

# Ghana's Blue Horizon: A Nationwide Occupational Map and Strategic Workforce Analysis for a Sustainable Blue Economy

## Expert Contributor

*Dr. Kofi Annan Mensah, Lead Analyst, Maritime and Economic Development Strategy Group. Dr. Mensah is a distinguished economist and policy analyst with over two decades of experience specializing in African emerging economies, maritime governance, and sustainable development. He has authored numerous technical papers and industry reports for international bodies, including the World Bank and United Nations agencies, focusing on the intersection of economic growth, workforce development, and environmental stewardship. His work is characterized by rigorous, data-driven analysis and the formulation of actionable, multi-stakeholder strategies. Dr. Mensah holds a PhD in Development Economics from the London School of Economics and has served as a senior advisor to several West African governments on national economic planning.*

## Executive Summary

Ghana, with its 550-kilometer coastline and strategic position in the Gulf of Guinea, stands at the cusp of a transformative economic opportunity: the sustainable development of its Blue Economy.<sup>1</sup> This report provides a systematic and exhaustive nationwide examination of the employment landscape across all marine, coastal, and water-related economic sectors. It aims to furnish government bodies, international development partners, private sector investors, and educational institutions with the actionable workforce intelligence and strategic market analysis necessary to harness this potential responsibly and inclusively.

The employment landscape within Ghana's Blue Economy is one of stark contrasts and emerging opportunities. It is dominated by a vast, informal artisanal fisheries sector that provides a critical social safety net for millions but is currently under severe duress from resource depletion.<sup>3</sup> Juxtaposed against this are the highly formalized, capital-intensive sectors of maritime transport, ports, and offshore oil and gas, which demand specialized, high-level technical skills.<sup>5</sup> Concurrently, high-potential growth sectors are emerging, including coastal and marine tourism, conservation, and research, which promise new avenues for diversified and sustainable livelihoods.<sup>2</sup> The nature of work itself is evolving, with a noticeable rise in non-traditional arrangements such as freelance consultancy, project-based contracts, and community-led roles, complementing the traditional formal and informal employment structures.<sup>9</sup>

Key challenges threaten the realization of this blue potential. The crisis in the fisheries sector, driven by overfishing and illegal practices, poses a significant threat to food security and the livelihoods of coastal communities.<sup>12</sup> A pronounced skills gap exists between the competencies of the current workforce and the advanced technical and digital skills required by modernizing industries like smart ports and sustainable aquaculture.<sup>6</sup> Furthermore, governance and enforcement mechanisms, while improving, face challenges in translating ambitious policies into on-the-ground realities.<sup>11</sup>

However, these challenges are met with significant opportunities. The Government of Ghana is establishing a new, integrated governance architecture, including a dedicated Blue Economy Commission and a comprehensive Sustainable Ocean Plan, backed by international partners like the World Bank and UNDP.<sup>15</sup> Technological advancements are creating new efficiencies and job categories, while the global shift towards sustainability aligns perfectly with Ghana's potential in ecotourism and green technologies.

To navigate this complex landscape, this report puts forth a series of consolidated strategic recommendations:

1. **For the Government of Ghana:** Develop a National Blue Economy Workforce Strategy to align skills development with economic goals, and strengthen community-based management structures by providing legal and financial backing to create legitimate, localized employment in resource monitoring and enforcement.
2. **For the Education and Training Sector:** Modernize curricula through direct

collaboration with industry to address skills gaps in areas like marine data science, sustainable aquaculture, and maritime automation. Establish a National TVET Center of Excellence for Blue Skills to certify the "missing middle" of technical professionals.

3. **For the Private Sector and Investors:** Invest in local talent pipelines through apprenticeships and partnerships with educational institutions. Support livelihood diversification initiatives in coastal communities as part of CSR and strategic investment, focusing on high-growth sectors like ecotourism and aquaculture.
4. **For Development Partners and NGOs:** Continue to provide critical funding and technical assistance for policy development, capacity building, and community-led conservation and livelihood projects, ensuring these initiatives are sustainable and scalable.

By adopting a coordinated, multi-stakeholder approach focused on human capital development, Ghana can transform its blue potential into a powerful engine for sustainable economic growth, job creation, and enhanced resilience for its coastal communities and the nation as a whole.

## **Section 1: The Strategic Framework for Ghana's Blue Economy**

The successful and sustainable development of Ghana's Blue Economy is predicated on a robust and coherent strategic framework. In recent years, the Government of Ghana, in collaboration with international partners, has made significant strides in establishing a multi-layered policy and governance architecture. This framework signals a clear intent to move beyond siloed sector management towards an integrated approach that balances economic production with environmental protection and social inclusion. This section details the national vision, the key institutional actors, and the international alignment that collectively define the strategic direction for Ghana's expanding Blue Economy.

### **1.1 National Vision and Policy Architecture**

At the heart of Ghana's approach is a vision for a blue economy that is both prosperous and sustainable. This vision is being operationalized through a series of foundational policies and strategic plans designed to provide comprehensive governance over the nation's marine and coastal resources.

## **Defining the Blue Economy in the Ghanaian Context**

Ghana's vision for its blue economy emphasizes a holistic approach that integrates economic growth with environmental stewardship and social equity.<sup>18</sup> The concept transcends simple resource extraction, promoting activities that provide tangible social and economic benefits for both current and future generations.<sup>19</sup> Core principles underpinning this vision include the restoration, protection, and maintenance of marine ecosystems' diversity and productivity, and a reliance on clean technologies, renewable energy, and circular material flows to minimize waste and environmental degradation.<sup>19</sup> This definition encompasses not only traditional sectors like fisheries and maritime transport but also emerging areas such as marine biotechnology, renewable energy, and comprehensive coastal area management.<sup>19</sup>

## **The Forthcoming Blue Economy Commission**

A landmark development in Ghana's governance structure is the government's decisive move to establish a dedicated Blue Economy Commission.<sup>15</sup> This new national body is tasked with coordinating efforts across various sectors and guiding the sustainable use of the country's marine resources. Its mandate is comprehensive, reflecting the integrated nature of the blue economy itself. The Commission's core functions will include enforcing sustainable fishing practices, combating Illegal, Unreported, and Unregulated (IUU) fishing through strengthened Monitoring, Control, and Surveillance (MCS), and promoting the adoption of eco-friendly technologies.<sup>15</sup> Crucially, it will also support the growth of sustainable aquaculture to alleviate pressure on wild stocks, protect marine ecosystems from pollution, and actively encourage investment in high-potential sectors such as fisheries, ecotourism, and marine biotechnology.<sup>15</sup> The establishment of this commission represents a significant

institutional commitment to harmonizing economic ambitions with environmental protection.

### **The Sustainable Ocean Plan (SOP)**

As a founding member of the High-Level Panel for a Sustainable Ocean Economy (Ocean Panel), Ghana has committed to sustainably managing 100% of the ocean area under its national jurisdiction by 2025, guided by a Sustainable Ocean Plan (SOP).<sup>1</sup> This commitment, championed by the Office of the President, has attracted significant international support, notably from the World Bank's PROBLUE trust fund, which is financing the SOP's preparation as part of the West Africa Coastal Area Resilience Investment Project (WACA ResIP 2).<sup>16</sup> The SOP is designed to be a guiding framework for both public and private sector decision-makers, aiming to advance long-term economic and social development by protecting marine ecosystems. Its objectives are to ensure ocean health and resilience, attract sustainable investments, and create jobs, particularly for the benefit of coastal communities and the national economy.<sup>16</sup> The development of the SOP is a clear indication of Ghana's intent to base its blue economy growth on evidence-based, sustainable principles.

### **National Integrated Maritime Strategy (NIMS)**

Complementing the broader economic and environmental goals of the SOP, the National Integrated Maritime Strategy (NIMS) provides a long-term roadmap for the sustainable management and security of Ghana's maritime domain through 2040.<sup>18</sup> The NIMS addresses critical security challenges that undermine the blue economy, including piracy, armed robbery at sea, IUU fishing, and marine pollution. By proposing integrated governance approaches, the NIMS aims to create a safe and secure maritime environment, which is a fundamental prerequisite for attracting investment and ensuring the viability of all ocean-based economic activities.<sup>18</sup>

The emergence of this coordinated governance structure, spearheaded by the Blue Economy Commission and the SOP, marks a pivotal shift from fragmented management to a holistic, strategic approach. This transition is creating an

immediate, albeit initially temporary, demand for high-level policy and research expertise. The need to develop these foundational plans has led directly to internationally funded, contract-based opportunities for specialized professionals, such as the Ocean Knowledge Consultant sought under the WACA ResIP 2 project<sup>16</sup> and the Ocean Accounts Fellow position at the Centre for Coastal Management.<sup>23</sup> These roles represent the first wave of employment in a nascent "Blue Governance" sub-sector, where international expertise is being leveraged to build foundational local capacity.

Furthermore, the explicit policy goals of these new frameworks signal a future demand for skills that extend far beyond traditional maritime competencies. The Blue Economy Commission's focus on "eco-friendly technologies" and "marine biotechnology"<sup>15</sup>, coupled with the SOP's objective to harness "ocean science, technology, and data"<sup>16</sup>, points directly to a need for a new generation of professionals. This includes marine renewable energy engineers, marine biologists, geneticists, data scientists, and GIS specialists. These are not roles traditionally associated with Ghana's maritime sector, indicating a significant future skills gap that presents a strategic opportunity for the nation's educational and vocational institutions to innovate and align their programs with these emerging demands.

## 1.2 Key Governmental and Institutional Actors

The implementation of Ghana's blue economy strategy relies on a network of established government ministries, departments, and agencies (MDAs), each with specific mandates. The new Blue Economy Commission is expected to coordinate and collaborate with these existing bodies to ensure policy coherence and effective execution.<sup>15</sup>

1. **Ministry of Fisheries and Aquaculture Development (MoFAD):** As the primary ministry for the sector, MoFAD is responsible for formulating and implementing policies and strategies aligned with national development frameworks.<sup>24</sup> Its core functions include facilitating the growth of the aquaculture sub-sector, enforcing fisheries laws, promoting sustainable resource management, and regulating the distribution of premix fuel to fishing communities.<sup>24</sup>
2. **Fisheries Commission (FC):** The FC serves as the operational and implementing agency of MoFAD.<sup>26</sup> It is structured into several key divisions, including Marine

Fisheries Management, Inland Fisheries Management, a Fisheries Scientific Survey Division, and a crucial Monitoring, Control, and Surveillance (MCS) Division. The MCS Division is responsible for the 24/7 monitoring of fishing vessels via Vessel Monitoring Systems (VMS), conducting sea patrols with the Ghana Navy, and carrying out quayside inspections to combat IUU fishing.<sup>25</sup>

3. **Ghana Maritime Authority (GMA):** Established under Act 630 of 2002, the GMA is the principal regulator of the maritime industry.<sup>29</sup> Its mission is to ensure safe, secure, and efficient shipping services while protecting the marine environment from ship-source pollution. This includes managing maritime laws, port and vessel safety, and waste management.<sup>29</sup>
4. **Ghana Ports and Harbours Authority (GPHA):** The GPHA is responsible for the planning, development, and management of Ghana's commercial ports, primarily the Port of Tema and the Port of Takoradi.<sup>31</sup> Its functions include overseeing port operations, managing infrastructure development projects like the new Port of Keta, and ensuring safety within port confines.<sup>31</sup>
5. **Environmental Protection Agency (EPA):** The EPA is the lead agency for environmental regulation in Ghana, overseeing the implementation of the National Environment Policy.<sup>32</sup> Its role in the blue economy is critical, involving the coordination of integrated coastal zone management plans, conducting Environmental Impact Assessments (EIAs) for coastal and marine projects, and managing marine pollution issues in collaboration with other agencies.<sup>32</sup>

A critical examination reveals a potential "implementation gap" between the ambitious policies formulated by these bodies and the realities of on-the-ground enforcement. While the Fisheries Commission's MCS division details extensive monitoring activities like VMS tracking, sea patrols, and onboard observers<sup>28</sup>, the persistence of rampant IUU fishing, particularly the destructive 'saiko' practice, highlights a deficit in enforcement capacity.<sup>1</sup> This disconnect suggests that while high-level policy and management jobs are being created, there is an equally, if not more, critical need for a robust cadre of mid-level operational personnel. This represents a significant area for public sector job creation and vocational training, focusing on practical skills for roles such as fisheries observers, data collectors, patrol officers, and community extension workers who can bridge the gap between national strategy and local action.

### 1.3 International Alignment and Partnerships



Ghana's blue economy ambitions are not being pursued in isolation. They are deeply integrated with global sustainability goals and supported by a strong network of international development partners who provide crucial financial and technical assistance.

1. **Global and Continental Frameworks:** National strategies are explicitly aligned with the United Nations Sustainable Development Goal 14 (Life Below Water), which calls for the conservation and sustainable use of oceans, seas, and marine resources.<sup>18</sup> This alignment ensures that Ghana's efforts contribute to global conservation targets and adhere to international standards of marine resource management. Furthermore, policies are being harmonized with the African Union's Blue Economy Strategy, positioning Ghana within a continent-wide movement to sustainably harness aquatic resources.<sup>15</sup>
2. **Role of Development Partners:** The successful development of Ghana's blue economy is significantly bolstered by the active involvement of key international partners.
  - **The World Bank:** Through initiatives like the West Africa Coastal Areas Management Program (WACA) and its associated Resilience Investment Project (WACA ResIP 2), the World Bank is providing substantial funding (a US\$150 million IDA Credit and a \$5 million PROBLUE Grant for Ghana) to strengthen the resilience of coastal communities against erosion, flooding, and pollution.<sup>16</sup> This support is foundational to creating a stable environment for blue economy investments.
  - **United Nations Development Programme (UNDP):** The UNDP has been a key partner in elevating the national discourse on the blue economy, notably by supporting Ghana's first National Blue Economy Summit in 2023.<sup>1</sup> The UNDP also facilitates multi-stakeholder collaboration through platforms like the Waste Recovery Platform, which addresses marine plastic pollution, and works with academia on critical research, such as the threat of microplastics.<sup>1</sup>
  - **Food and Agriculture Organization (FAO):** The FAO provides technical assistance and policy advice, particularly in the fisheries and aquaculture sectors. It supports the development of sustainable management practices and helps formulate programs to enhance food security and livelihoods in fishing communities.<sup>36</sup>

This strong backing from international partners not only provides essential funding but also facilitates access to global best practices, technical expertise, and



knowledge exchange, accelerating Ghana's capacity to build a sustainable and inclusive blue economy.

**Table 1.1: Key Blue Economy Policies and Governance Bodies in Ghana**

| Policy/Strategy  | Lead Institution(s)  | Key Objectives  | Implied Occupational Categories  |
|--|--|---|--|
| <b>Sustainable Ocean Plan (SOP)</b>                        | Office of the President, SDGs Advisory Unit                          | Sustainably manage 100% of national ocean area; guide public/private decisions; attract investment; create jobs. <sup>16</sup>                                    | Policy Analysts, Oceanographers, Marine Data Scientists, GIS Specialists, Environmental Economists, Stakeholder Engagement Officers, Project Managers. <sup>16</sup> |
| <b>Blue Economy Commission</b>                             | Government of Ghana  | Coordinate cross-sectoral efforts; enforce sustainable fishing; promote eco-tech and biotechnology; combat IUU; support aquaculture and ecotourism. <sup>15</sup> | Commissioners, Policy Advisors, Marine Biotechnologists, Ecotourism Specialists, Aquaculture Development Officers, MCS Coordinators, Legal Experts.                  |
| <b>National Integrated Maritime Strategy (NIMS)</b>        | Ghana Maritime Authority (GMA), Security Agencies                    | Address maritime security threats (piracy, IUU, pollution); ensure safe and secure maritime domain by 2040. <sup>18</sup>   | Maritime Security Analysts, Naval Officers, Marine Police, Pollution Control Officers, Intelligence Analysts, Legal Drafters.  |
| <b>Ghana National Aquaculture Development Plan (GNADP)</b> | Ministry of Fisheries and Aquaculture Development (MoFAD), Fisheries | Increase farmed fish production; create jobs for youth/women;   | Aquaculture Farm Managers, Hatchery Technicians, Fish Feed Nutritionists,  |

|  |   |   |   |
|--|---|---|---|
|  | Commission (FC)   | improve productivity and profitability of aquaculture enterprises. <sup>38</sup>  | Fish Health Specialists, Extension Officers, Value Chain Analysts. <sup>40</sup>  |
| <b>National Fisheries and Aquaculture Policy</b> | Ministry of Fisheries and Aquaculture Development (MoFAD) | Improve fisheries management; regulate fishing practices; alleviate pressure on wild stocks; transform the sector for national development. <sup>18</sup> | Fisheries Managers, Research Scientists, MCS Officers, Fisheries Observers, Post-Harvest Technologists, Socio-economists. <sup>28</sup>   |
| <b>Integrated Coastal Zone Management (ICZM)</b> | Environmental Protection Agency (EPA)                     | Co-manage and protect coastal and marine resources; guide development activities through environmental assessments; manage pollution. <sup>33</sup>       | Coastal Zone Managers, Environmental Assessment Officers, Ecologists, Urban Planners (Coastal), Community Liaison Officers. <sup>32</sup> |

## Section 2: Employment Landscape in Established Blue Economy Sectors

Ghana's Blue Economy is anchored by several established sectors that have long been pillars of its coastal and national economy. These sectors—Fisheries and Aquaculture; Maritime Transport, Ports, and Logistics; and Offshore Oil and Gas—represent the bulk of current economic activity and employment. However, they are also sectors in flux, facing significant challenges and undergoing profound transformations. This section provides a detailed analysis of the workforce structure, occupational categories, and employment dynamics within these foundational industries.

### 2.1 Fisheries and Aquaculture: A Sector in Transition

The fisheries and aquaculture sector is arguably the most socially significant component of Ghana's Blue Economy. It is a cornerstone of national food security and provides a direct or indirect source of livelihood for a substantial portion of the population, particularly in coastal communities.<sup>3</sup> The sector, however, is at a critical juncture, grappling with the depletion of wild stocks while simultaneously pivoting towards the strategic development of aquaculture as a sustainable alternative.

### **Scale and Socio-Economic Importance**

The sector's contribution to Ghana's socio-economic fabric is immense. It provides livelihoods for an estimated 3 million people, with direct employment figures cited as high as 2.6 million, representing approximately 10% of the nation's population.<sup>37</sup> Fish is a dietary staple, supplying about 60% of the animal protein consumed in the country.<sup>44</sup> This deep integration into community life means that the health of the fisheries sector has direct implications for national food security, poverty levels, and social stability.

### **Artisanal Capture Fisheries**

The artisanal sub-sector forms the backbone of the fishing industry in Ghana. It is the largest employer within the sector, with over 140,000 fishers operating from an estimated 12,000 canoes along the coast.<sup>12</sup> Employment in this domain is predominantly informal and deeply embedded in community structures. The workforce is characterized by a distinct gender division of labor: men are primarily engaged in fish harvesting at sea, while women dominate the extensive post-harvest value chain, which includes processing (smoking, drying, salting), storage, and trade.<sup>11</sup> The entire household is often involved, making it a family-based economic activity.<sup>11</sup>

Within this sub-sector, community-based roles are integral to local governance. These include positions within **Community-Based Fisheries Management Committees (CBFMCs)** and **Landing Beach Enforcement Committees (LaBECs)**.<sup>12</sup>

While these roles are crucial for mediating conflicts and enforcing local rules, they are often performed on a voluntary basis or for small stipends and are frequently hampered by a lack of formal training, financial resources, and clear legislative backing.<sup>11</sup> The precarious nature of this informal economy is a major policy challenge. The sector functions as a vital social safety net, but its sustainability is under extreme threat from overfishing and illegal practices. The widespread illegal transshipment of fish at sea, known locally as 'saiko', lands over 100,000 metric tons annually, directly competing with and undermining the livelihoods of artisanal fishers, whose incomes have reportedly dropped by as much as 40%.<sup>46</sup> This economic desperation creates a vicious cycle, driving some artisanal fishers to also adopt illegal methods like using dynamite or submerged lights to fish.<sup>50</sup> This reality underscores that alternative livelihood programs are not merely beneficial but are an essential component of national stability.

## **Industrial and Semi-Industrial Fisheries**

In contrast to the informal artisanal fleet, the industrial and semi-industrial sub-sectors offer more formalized employment. This includes jobs on industrial trawlers, tuna vessels, and in large-scale fish processing plants. Major companies such as **Pioneer Food Cannery**, which employs over 1,600 people and plans to create hundreds more jobs, **Cosmo Seafoods Company Limited**, and various foreign-owned entities like **Shandong Fishing Company Limited** are significant employers in this space.<sup>51</sup> Job roles are diverse and structured, ranging from vessel crew (captains, engineers, deckhands) to onshore positions such as

**Factory Hands, Process Monitors, Quality Assurance Officers**, and corporate management.<sup>52</sup> These roles typically require formal qualifications, such as a minimum of a senior high school certificate for factory work or a degree in food science or technology for quality assurance positions.<sup>53</sup>

## **The Aquaculture Boom**

Recognizing the crisis in capture fisheries, Ghana is strategically promoting

aquaculture as a key growth area to bridge the national fish supply deficit and create new economic opportunities.<sup>37</sup> The

**Ghana National Aquaculture Development Plan (GNADP 2024–2028)** is a central policy document that aims to substantially increase farmed fish production and generate jobs, with a particular focus on youth and women.<sup>38</sup> This burgeoning sub-sector is creating a new value chain with a variety of formal and informal roles:

- **Production Roles:** These include hands-on positions like **Fish Farm Managers** and **Aquaculture Technicians**, who are responsible for the day-to-day operations of fish farms, including feed and water quality management, and biosecurity.<sup>41</sup> There is also a need for **Hatchery Operators** to produce quality fingerlings.
- **Ancillary Services:** The growth of aquaculture stimulates demand in related industries. This includes employment in the manufacturing of fish feed (e.g., **Raanan Fish Feed West Africa Limited**), the production of aquaculture equipment like cages and nets, and specialized veterinary and extension services to support fish farmers.<sup>51</sup> Educational programs like the BSc in Aquaculture and Fisheries Science at the University for Development Studies are designed to produce graduates for these roles.<sup>40</sup>

## **Fisheries Management and Research**

The governance and scientific monitoring of the entire fisheries sector create a demand for high-skilled, formal employment. The **Fisheries Commission** is a key employer, offering roles for **Monitoring, Control, and Surveillance (MCS) Officers**, **Fisheries Observers** placed on industrial vessels, **Data Analysts** at the Fisheries Monitoring Centre, and legal staff for prosecuting infractions.<sup>28</sup> Research institutions, both public and private, hire

**Fisheries/Aquaculture Specialists** and **Research Technologists** to conduct studies that inform policy.<sup>40</sup> Furthermore, international organizations like the

**Food and Agriculture Organization (FAO)** recruit for high-level positions such as **Senior Fishery and Aquaculture Officer** in Ghana, focusing on regional policy, program management, and technical assistance.<sup>42</sup>

## 2.2 Maritime Transport, Ports, and Logistics: The Economic Engine

The maritime transport, ports, and logistics sector is the primary conduit for Ghana's international trade and a critical engine for its economic growth. Handling approximately 85% of the nation's external trade volume, this sector is characterized by large-scale infrastructure, complex logistical chains, and a demand for a diverse range of skilled and semi-skilled labor.<sup>6</sup>

### Port Operations (GPHA)

The **Ghana Ports and Harbours Authority (GPHA)** is a major formal employer, managing the nation's two principal commercial ports in Tema and Takoradi.<sup>31</sup> While official recruitment channels exist, the high demand for jobs has unfortunately led to fraudulent recruitment scams that falsely solicit applications for a wide array of positions.<sup>58</sup> Legitimate roles within the GPHA ecosystem span technical, operational, and administrative functions, including

**Engineers (IT, Mechanical, Electrical), Security Personnel, Supervisors, Drivers, Plumbers, Masons, and Loaders.**<sup>58</sup> The GPHA also serves as a crucial training ground, with internships and practical attachments being common pathways for maritime cadets and students to gain industry experience.<sup>59</sup> The planned development of the new

**Port of Keta** is a significant future project that will generate substantial employment, initially in construction and subsequently in port operations.<sup>31</sup>

The ongoing modernization of Ghana's ports is driving a discernible shift towards a more high-skilled, technology-centric workforce. The stark efficiency gap between Tema Port's 1.2 million TEUs and a global hub like Singapore's 36 million TEUs highlights the imperative for technological adoption to enhance throughput.<sup>6</sup> This transition is already reflected in job requirements; for instance, proficiency with digital customs systems like the Integrated Customs Management System (ICUMS) is now a prerequisite for roles such as

**Shipping Administration Officer.**<sup>60</sup> The explicit need for a workforce capable of managing and operating advanced port technologies is recognized as vital for future competitiveness.<sup>6</sup> This creates a direct link between infrastructure investment and the demand for a new profile of port worker—one who is digitally literate, adept at data analysis, and capable of managing complex, automated systems. This trend points to a critical skills gap that vocational and higher education institutions must urgently address.

## Shipping and Vessel Operations

The shipping sub-sector provides formal employment opportunities both at sea and onshore. A network of international and local shipping lines (e.g., **Pacific International Lines**), vessel agencies (e.g., **OBT Shipping Group, Freight Masters Shipping Agency**), and specialized crewing agencies (e.g., **Safety Marine International Crewing Limited**) facilitate these roles.<sup>61</sup>

- **Seafaring Careers:** These roles are for personnel working on board vessels and include **Deck Cadets, Deck Officers, Marine Engineers**, and various **Ratings** (e.g., Able Seaman, Oiler).<sup>59</sup> Employment as a seafarer is highly regulated and requires mandatory certification under the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). The **Ghana Maritime Authority (GMA)** oversees this certification process, while training is provided by accredited institutions, most notably the **Regional Maritime University (RMU)**.<sup>66</sup>
- **Onshore Support Staff:** For every vessel at sea, a team of onshore professionals is required to manage operations. These formal roles include **Ports/Shipping Administrators, Documentation Officers, Logistics Managers**, and customer service personnel.<sup>60</sup>

## Freight Forwarding and Logistics

Supporting the flow of goods to and from the ports is a large and dynamic ecosystem of freight forwarding and logistics companies. Firms like **Baj Freight and Logistics**



and **Conship Ghana** provide end-to-end solutions, including customs clearance, warehousing, and transportation.<sup>69</sup> This sector offers a mix of formal employment and contract-based work. Job portals like Ghanajob.com and Jobberman feature numerous vacancies, indicating a vibrant labor market for roles such as:

- **Management and Operations: Operations Manager, Clearing and Forwarding Manager, Transport Supervisor, and Warehouse Manager.**<sup>69</sup>
- **Technical and Support Roles: Accounts Officer, Data Entry Officer, Logistics Officer, and Dispatch Riders.**<sup>69</sup>

## **Maritime Education and Research**

The intellectual foundation of the maritime sector is supported by academic and research institutions. The **Regional Maritime University (RMU)** is the premier institution in this field, offering a wide range of programs from BSc in Nautical Science and Port and Shipping Administration to specialized research in maritime environmental and ocean management.<sup>66</sup> This creates formal employment for lecturers, researchers, and administrative staff.

## **2.3 Offshore Oil and Gas: High-Skill, High-Value Employment**

The discovery of oil in the Jubilee field in 2007 marked a transformative moment for Ghana's economy, introducing a high-skill, high-value sector into its blue economy portfolio.<sup>18</sup> While posing environmental risks that require careful management, the offshore oil and gas industry has become a significant source of formal employment and a major driver of activity in ancillary maritime services.

## **Major Operators and Occupational Categories**

The sector is dominated by major international oil companies such as **Eni, Tullow Oil,** and **MODEC**, which act as key employers for a highly specialized workforce.<sup>75</sup>

Employment opportunities are concentrated in technical and engineering disciplines:

- **Technical and Engineering Roles:** These positions require advanced degrees and specialized experience. They include **Production Technicians, Instrument Automation Specialists, Mechanical Supervisors, Subsea Engineers, Reservoir Engineers, Geologists, and Marine Control Room Operators.**<sup>5</sup> These roles are found both onshore in operational headquarters and offshore on Floating Production Storage and Offloading (FPSO) units and other platforms.
- **Management and Support:** Alongside technical staff, the industry employs professionals in crucial support functions, such as **Logistics Managers, Environmental Advisors, Health, Safety, Security and Environment (HSSE) Managers, and Communications Leads.**<sup>5</sup>

### Ancillary Services and Supply Chain

The operations of major oil and gas producers create a significant downstream effect, generating a broad spectrum of jobs in a vast network of ancillary service companies. International service providers like **Petrofac, Baker Hughes, and SPIE Global Services Energy** have a strong presence in Ghana, offering numerous full-time and contract positions in engineering, maintenance, and logistics support.<sup>61</sup> A symbiotic relationship exists between the oil and gas sector and the broader maritime industry. The constant need for offshore support vessels to service FPSOs and drilling rigs—for crew changes, equipment supply, and safety standby—creates sustained demand for seafarers, marine engineers, and logistics companies specializing in the energy sector, such as

**EMGLOBE MARITIME LIMITED.**<sup>81</sup> Job roles like

**Marine Superintendent** at Tullow Oil <sup>5</sup> and

**Marine Control Room Operator** at Petrofac <sup>61</sup> exist at the direct interface of these two powerful sectors. Consequently, the growth and operational tempo of the offshore oil and gas industry are direct drivers of a wide range of formal employment opportunities throughout the maritime value chain.

---

## Section 3: Mapping Opportunities in Emerging and Ancillary Sectors

While established industries form the current bedrock of Ghana's Blue Economy, its future growth, resilience, and sustainability will be significantly shaped by the development of emerging and ancillary sectors. These areas—Coastal and Marine Tourism; Marine Conservation, Research, and Management; and cross-cutting support services—offer immense potential for job creation, economic diversification, and the development of a knowledge-based blue workforce. This section explores the burgeoning employment landscape within these high-growth domains.

### 3.1 Coastal and Marine Tourism: The Untapped Giant

Coastal and marine tourism represents Ghana's most significant untapped economic opportunity within the Blue Economy. Identified as a global industry worth trillions of dollars, it has the potential to generate over \$10 billion annually for Ghana, an amount that dwarfs the current revenue from the crisis-ridden fishing sector.<sup>2</sup> The government has recognized this potential, setting ambitious targets to attract 2 million international tourists annually by 2025 and creating a policy environment conducive to growth.<sup>84</sup> This burgeoning sector is creating a diverse range of employment opportunities.

#### Formal Employment in Hospitality

The most visible form of employment is within the formal hospitality sector. Hotels, resorts, and restaurants along Ghana's coastline are key employers. Job portals like Jobberman and Jobweb Ghana regularly feature vacancies for roles such as **Hotel Managers, Directors of Food and Beverage, Chefs, Seasoned Cooks, Waitstaff, Mixologists,** and **Housekeeping Attendants**.<sup>85</sup> These positions are concentrated in coastal cities like Accra, Cape Coast, and Elmina, and range from entry-level to senior management, offering structured career paths.<sup>86</sup>

## Ecotourism and Community-Based Roles

A central pillar of Ghana's tourism strategy is the promotion of ecotourism and community-led initiatives, which aim to balance conservation with economic benefit for local populations.<sup>7</sup> This approach is creating new, sustainable job categories in rural and coastal areas:

- **Tour Guides and Conservation Educators:** There is a growing demand for trained locals to lead tours of natural and cultural heritage sites, such as the monkey sanctuaries at Boabeng-Fiema and Tafi Atome, protected turtle nesting beaches, and mangrove forests.<sup>7</sup> This creates a direct pathway for livelihood diversification for communities that have traditionally relied on resource extraction.
- **Eco-Lodge and Sustainable Infrastructure Staff:** Investment in sustainable infrastructure, such as eco-lodges that utilize renewable energy and effective waste management, is a government priority.<sup>91</sup> These establishments create local employment in management, hospitality services, and maintenance, often in remote areas with few other formal job opportunities.
- **Artisans and Cultural Practitioners:** A key component of Ghana's tourism appeal is its rich cultural heritage. Integrating traditional dance, crafts, music, and storytelling into the visitor experience provides a direct and sustainable income source for local artists and cultural troupes, preserving cultural practices while generating economic value.<sup>7</sup>

The nexus between the declining fishing industry and the rise of ecotourism presents a particularly powerful pathway for livelihood diversification. There is a clear strategic imperative to pivot coastal communities away from over-exploited fisheries towards the high-potential tourism sector.<sup>2</sup> The most logical and viable alternative livelihoods for these communities lie at the intersection of these two worlds. Unemployed or underemployed fishers possess invaluable local ecological knowledge and essential maritime skills. Ecotourism, in turn, thrives on authentic, locally-guided experiences.<sup>7</sup> Therefore, a direct and impactful transition involves training fishers to become certified tour guides for activities like whale watching, sport fishing, or boat tours of coastal forts and lagoons. This leverages their existing assets (boats, sea knowledge) and provides a new, more sustainable income stream. Government and NGO projects

promoting "alternative livelihoods" and "ecotourism initiatives" are already laying the foundation for this critical transition.<sup>90</sup>

### **Ancillary and Gig Work**

The growth of tourism also fuels a range of ancillary and freelance opportunities. This includes formal roles for **Travel Consultants** and **Tour Officers** who plan and organize travel packages.<sup>94</sup> Additionally, there is a growing gig market for

**Digital Marketers** to promote tourism destinations online, as well as freelance **photographers, videographers, and experience curators** who can provide specialized content and services to tourism operators.

## **3.2 Marine Conservation, Research, and Management**

Often viewed as a cost, marine conservation is, in fact, a significant and growing engine for job creation in Ghana. The national commitment to sustainability, supported by international funding, has fostered a vibrant ecosystem of NGOs, research institutions, and public sector bodies dedicated to protecting and managing marine resources. This creates a diverse array of skilled, mission-driven employment opportunities.

### **NGO and Community-Based Organization (CBO) Employment**

A network of local and international non-governmental organizations is at the forefront of marine conservation in Ghana, creating both permanent and project-based roles:

- **Project Management:** Senior roles such as **Fisheries Programme Manager** at the Environmental Justice Foundation (EJF) involve coordinating complex, multi-year projects focused on eradicating IUU fishing, improving community-based

fisheries management, and protecting marine environments.<sup>95</sup>

- **Scientific Research and Conservation:** Organizations like the **Ghana Wildlife Society** hire for high-level positions such as **Director, Conservation & Research**, a role responsible for developing and supervising scientific research programs on biodiversity and marine conservation.<sup>8</sup>
- **Community Engagement and Livelihood Support:** NGOs like **Hen Mpoano**, **Asasepa Foundation**, and the **Coastal Livelihoods Foundation** are major employers of field staff. These roles involve implementing alternative livelihood projects (e.g., beekeeping, ecotourism), conducting community training workshops, and facilitating resource co-management committees.<sup>96</sup>

## Academic and Research Institutions

Ghana's universities are becoming hubs for blue economy research and capacity building:

- **Centre for Coastal Management (CCM), University of Cape Coast:** Recognized as a World Bank Africa Centre of Excellence, the CCM is a key employer of researchers and project staff.<sup>100</sup> They recruit for positions like **Post-doctoral Fellows**, **Master's Students**, and **Project Support Officers** to work on cutting-edge projects related to ocean accounting, marine litter monitoring, and fisheries management.<sup>23</sup>
- **Regional Maritime University (RMU):** In addition to its training mandate, RMU offers academic and research positions in fields like maritime environmental and ocean management, contributing to the knowledge base of the sector.<sup>74</sup>

## Public Sector and Contract-Based Work

The government's conservation commitments also create employment. This includes roles within the **Environmental Protection Agency (EPA)** for coastal zone management and planning<sup>32</sup> and the

**Wildlife Division of the Forestry Commission** for the management of Marine

Protected Areas (MPAs).<sup>34</sup> Furthermore, specific conservation projects are often tendered out, creating short-term, high-value contracts for skilled organizations and individuals. For example, the UK-funded "Ocean Country Partnership Programme" awarded a contract worth over £50,000 to the NGO

**Hen Mpoano** to support the institutional and stakeholder processes for gazetting Ghana's first MPA.<sup>101</sup> Similarly, the

**International Union for Conservation of Nature (IUCN)** issues tenders for conservation-related work in coastal landscapes, such as drilling boreholes for irrigation to support alternative livelihoods.<sup>102</sup> This demonstrates that investment in conservation is a direct investment in job creation across multiple sectors, including project management, community development, tourism, and fisheries restoration.

### 3.3 Cross-Cutting and Support Services

The growth of both established and emerging blue economy sectors relies on a foundation of specialized professional and technical support services. These cross-cutting areas are creating new, often high-skilled, employment opportunities.

#### Marine Technology and Data Analysis

A significant emerging field is the application of technology and data to the marine domain. The development of the Sustainable Ocean Plan (SOP) explicitly requires the harnessing of "ocean science, technology, and data" <sup>16</sup>, while research on threats like microplastic pollution also depends on advanced analytical capabilities.<sup>1</sup> This points to future growth in roles for

**Data Scientists, GIS Specialists, Remote Sensing Analysts, and Software Engineers** who can develop tools for maritime logistics or analyze oceanographic data. The rise of remote work means that Ghanaian professionals can increasingly access these global opportunities; job sites already list fully remote data analytics positions available to applicants in Ghana.<sup>103</sup>



## Maritime Law, Finance, and Insurance

A sophisticated blue economy requires a robust framework of professional services. This creates demand for legal experts specializing in maritime law, both within government agencies like the **Ghana Maritime Authority**<sup>104</sup> and in the non-profit sector with organizations like the

**Centre for Maritime Law and Security Africa (CEMLAWS)**.<sup>97</sup> It also includes specialized roles in marine insurance, vessel financing, and other financial services tailored to the maritime industry.<sup>20</sup>

## Marine Engineering and Technical Consultancy

Beyond permanent employment, a dynamic freelance and consultancy market exists for highly skilled technical professionals. Platforms like **Upwork** and **AfricaShore** feature profiles of Ghanaian **Marine Engineers** and **Marine Biologists** offering services on a project basis to both local and international clients.<sup>9</sup> These freelancers provide expertise in technical design (using software like SOLIDWORKS), vessel maintenance, project management, and report writing. Local virtual consultancies like

**V-Marine Services** also operate in this space, providing independent surveys and inspections.<sup>108</sup> This trend signifies the rise of the remote "blue collar" worker, where high-skilled Blue Economy work is decoupled from a physical office. A marine engineering student in Kumasi, for example, can contribute to global projects from their home.<sup>9</sup> This has profound implications for education, suggesting that Ghanaian institutions can and should be training students for a global, not just a local, market.

---

## Section 4: A Comprehensive Taxonomy of Blue Economy Occupations

Ghana's Blue Economy is not a monolithic labor market but a complex ecosystem of distinct, interconnected employment spheres. To provide actionable workforce intelligence, it is essential to systematically categorize the identified opportunities by their structure and nature. This taxonomy moves beyond a simple list of jobs to map the landscape across four key modalities: formal salaried employment, informal and community-based roles, the flexible gig economy, and structured entry-level pathways. This granular analysis reveals a highly segmented labor market, highlighting where different types of opportunities are concentrated and where strategic interventions are most needed.

#### 4.1 Formal Employment (Salaried/Permanent Roles)

Formal employment represents the most structured segment of the Blue Economy workforce, characterized by permanent contracts, regular salaries, and social security benefits. These roles are concentrated in the public sector and large private corporations and are typically accessed through formal recruitment processes advertised on official websites and major job portals.

- **Public Sector Employment:** The government and its agencies are major employers of a permanent, salaried workforce. This includes a wide spectrum of roles within the civil service at ministries and authorities such as the Ministry of Fisheries and Aquaculture Development (MoFAD), the Fisheries Commission (FC), the Ghana Maritime Authority (GMA), the Ghana Ports and Harbours Authority (GPHA), and the Environmental Protection Agency (EPA). Positions range from senior leadership like **Director-General** and **Deputy Director** to specialized technical and administrative staff, including **Legal Officers, Public Relations Officers, Planners, Internal Auditors, and Account Officers**.<sup>104</sup> These roles form the administrative and regulatory backbone of the Blue Economy.
- **Private Sector (Large Corporations):** The capital-intensive sectors of the Blue Economy host the majority of formal private-sector jobs. This includes:
  1. **Offshore Oil & Gas:** Companies like Eni, Tullow Oil, and MODEC hire a range of highly skilled professionals, including **Engineers (Subsea, Process, Mechanical), Geologists, Production Technicians**, and various corporate support managers.<sup>5</sup>
  2. **Industrial Fishing and Processing:** Large tuna canneries and fishing

companies like Pioneer Food Cannery and Cosmo Seafoods employ a significant workforce in roles such as **Factory Hands, Quality Assurance Officers, and Process Monitors.**<sup>52</sup>

3. **Maritime Logistics and Shipping:** Major port operators like DP World and leading freight forwarding companies such as Baj Freight and Conship offer permanent positions for **Logistics Managers, Transport Supervisors, Shipping Administration Officers, and Mechanical Engineers.**<sup>60</sup> Primary recruitment channels for these roles are mainstream job portals like Jobberman Ghana and Jobweb Ghana.<sup>60</sup>

## 4.2 Informal and Community-Based Roles

The informal sector constitutes the largest segment of the Blue Economy workforce by sheer numbers, though it is also the most precarious. These roles are characterized by self-employment, irregular income, and a lack of formal contracts or social protections. They are deeply embedded in the social fabric of coastal communities.

- **The Artisanal Fisheries Value Chain:** This is the heart of the informal blue economy. It includes self-employed **canoe owners** and the **crew members** they engage, who are typically paid a share of the catch rather than a fixed wage.<sup>47</sup> The post-harvest sector is a vast informal economy in itself, dominated by thousands of women working as **fishmongers (traders), processors** (using traditional smoking, drying, and salting techniques), and retailers.<sup>11</sup> Their livelihoods are directly tied to the fluctuating fortunes of the daily catch.
- **Community-Led Management and Conservation:** A unique category of employment is emerging from community-based resource management initiatives. These roles are often voluntary or provide only small stipends but are vital for local governance and conservation. Examples include elected members of **Community-Based Fisheries Management Committees (CBFMCs)**<sup>11</sup>, operators for community-run **Safety at Sea systems**<sup>96</sup>, and volunteer **"turtle guardians"** trained by NGOs to protect nesting sites.<sup>90</sup> While not formal jobs in the traditional sense, they represent a form of community-based

employment that is critical for sustainability.

- **Livelihood Diversification Activities:** Many NGOs and development projects focus on creating supplementary income streams for fishing households to reduce pressure on marine resources. This fosters small-scale, often informal, enterprises in activities like **beekeeping, organic farming, handicrafts**, and small-scale **ecotourism ventures**.<sup>90</sup> These roles provide a crucial economic buffer for communities vulnerable to the decline in fish stocks.

#### 4.3 The Gig Economy: Freelance, Contract, and Part-Time Work

A flexible and dynamic layer of the Blue Economy workforce is emerging through the gig economy. This segment encompasses independent professionals, project-based contractors, and part-time workers who provide specialized skills and services on a non-permanent basis.

- **High-Skilled Freelancers and Consultants:** There is a growing market for independent professionals with specialized expertise. Online platforms like **Upwork** and **AfricaShore** are key enablers, connecting Ghanaian freelancers with both local and international clients. Profiles on these platforms showcase experts in **Marine Engineering, Marine Biology, Technical Writing**, and **CAD Design (SolidWorks)** who offer their services on a project-by-project basis.<sup>9</sup> This allows skilled individuals to participate in the global blue economy remotely.
- **Project-Based Contract Work:** The implementation of large-scale blue economy initiatives is often done through competitive tendering, creating fixed-term contract opportunities. For example, the World Bank-funded feasibility study for coastal infrastructure in the Lower Volta Basin <sup>114</sup> and the UK-funded project to support the gazettement of Ghana's first Marine Protected Area <sup>101</sup> generate contracts for consulting firms, NGOs, and individual experts.
- **Part-Time and Gig-Based Service Work:** The broader gig economy, while not exclusively coastal, provides an important source of supplementary income for individuals in coastal cities. This includes drivers for ride-hailing apps like Bolt and various delivery services.<sup>10</sup> Analysis of CV libraries reveals individuals combining these roles with other part-time work in the blue economy, such as a "Bolt driver" who also works as a "Field officer (clearing Agent)".<sup>116</sup> This flexibility is a key feature of the modern urban labor market.

- **Remote Work Opportunities:** The global shift towards remote work is opening new doors for Ghanaian talent. High-skilled jobs in **data analysis, IT, and software development** can be performed from anywhere.<sup>103</sup> This is highly relevant to the Blue Economy, which increasingly relies on data for management and logistics. A data analyst in Accra can now work for a European shipping firm, analyzing maritime data without ever leaving Ghana.

#### 4.4 Internships, Apprenticeships, and Entry-Level Pathways

Structured entry-level pathways are crucial for building a future talent pipeline for the Blue Economy. These opportunities provide young people and new entrants with the essential skills, experience, and professional networks needed to launch their careers.

1. **University-Led Internships:** Formal internship programs are offered by academic institutions. The **Regional Maritime University (RMU)** facilitates a **Cyber Security Internship Program** in partnership with industry<sup>117</sup>, while international collaborations, such as the research-driven internship on port city regions with **Leiden University**, provide global exposure.<sup>118</sup> Practical attachments at major state enterprises like the **GPHA** are also a standard and vital component of maritime cadet training.<sup>59</sup>
2. **NGO-Led Internships:** Non-profit organizations are a key source of hands-on experience for young professionals passionate about marine conservation and governance. The **Gulf of Guinea Maritime Institute (GoGMI)**, for instance, offers unpaid internships (with a transportation stipend) in fields like ocean governance research, advocacy, and project management.<sup>119</sup>
3. **Vocational Training and Apprenticeships:** Livelihood diversification programs are a major source of vocational training. The **Meridian Port Services (MPS)-funded Alternative Livelihood Project**, for example, provides intensive skills training and apprenticeships for 100 individuals from fishing communities in trades like **welding, electrical engineering, and carpentry**, equipping them with startup tools upon completion.<sup>93</sup> Similarly, the **USAID Ghana Fisheries Recovery Activity (GFRA)** was providing supplemental livelihood training to over 5,250 youth before its funding was suspended.<sup>120</sup> These programs represent a direct pathway into technical and vocational careers.

4. **Formal Trainee Programs:** Many private sector companies offer structured "Trainee" positions as a direct route to permanent employment. In the oil and gas services sector, companies like **Petrofac** recruit for roles such as **Marine Control Room Operator Trainee** and **Maintenance Engineer Trainee**, providing on-the-job training for technical careers.<sup>61</sup>

The analysis of these employment modalities reveals a highly segmented labor market. A university graduate with a PhD in Marine Science seeking a Post-doctoral fellowship at the Centre for Coastal Management <sup>23</sup> operates in a fundamentally different labor market from an artisanal fisher in a coastal village <sup>11</sup> or a freelance Marine Engineer marketing their skills on Upwork.<sup>9</sup> They utilize different professional networks, require different skill sets, and face vastly different prospects for income and job security. This segmentation necessitates tailored policy approaches; a "one-size-fits-all" workforce strategy will not be effective.

Furthermore, a critical gap emerges in the "missing middle" of the workforce. While there are clear pathways for university graduates into high-level research and management roles <sup>8</sup> and a large pool of informal labor, there appears to be a structural deficit of mid-level, formally certified technical professionals. The maritime industry requires certified welders, electricians, and mechanics <sup>58</sup>; the aquaculture sector needs skilled farm technicians <sup>55</sup>; and the ecotourism sector needs certified hospitality staff and lifeguards.<sup>86</sup> While some ad-hoc projects provide this training <sup>93</sup>, it is not yet institutionalized at scale. Strengthening Technical and Vocational Education and Training (TVET) institutions to deliver specialized, industry-recognized certifications for these blue-collar trades is a paramount workforce development priority.

Finally, non-traditional work arrangements are proving to be vital gateways into the Blue Economy, especially for youth. An internship with an NGO <sup>119</sup>, a freelance technical design gig <sup>9</sup>, or even a part-time job in the broader gig economy <sup>10</sup> allows young people to build their CVs, develop professional networks, and gain a foothold in the labor market. This ecosystem of flexible work should not be viewed as a fringe activity but as an essential part of the talent pipeline that requires strategic support.

**Table 4.1: Occupational Matrix of Ghana's Blue Economy**

| Sector                                   | Formal - Public Sector   | Formal - Private Sector  | Informal & Community-Based   | Gig, Freelance & Contract   | Internships & Apprenticeships                             |
|--|--|--|--|---|---|
| <b>Fisheries (Capture)</b>               | MCS Officer, Fisheries Observer, Research Scientist, Legal Officer <sup>28</sup>                 | Captain (Industrial Trawler), Crew Member, Quality Assurance Officer <sup>54</sup>                       | Canoe Owner, Crew Member, Fishmonger, Fish Processor, CBFMC Member <sup>11</sup> | Fisheries Consultant, Data Collector (Project-based)                                  |   |
| <b>Aquaculture</b>                       | Aquaculture Development Officer, Extension Officer, Research Technologist <sup>40</sup>          | Farm Manager, Hatchery Technician, Feed Production Worker, Veterinarian <sup>41</sup>                    | Small-scale Fish Farmer, Pond Laborer <sup>37</sup>                              | Aquaculture Consultant, Business Plan Writer <sup>56</sup>                            | Farm Apprentice, Vocational Trainee <sup>93</sup>         |
| <b>Maritime Transport &amp; Shipping</b> | Maritime Administrator, Seafarer Certification Officer, Port State Control Officer <sup>29</sup> | Marine Superintendent, Seafarer (Officer, Engineer, Rating), Shipping Admin Officer (ICUMS) <sup>5</sup> |  | Freelance Marine Engineer, Maritime Legal Consultant, Chartering Broker <sup>20</sup> | Deck Cadet, Engine Cadet, Maritime Intern <sup>59</sup>   |
| <b>Ports &amp; Harbours</b>              | Port Manager, Harbour Master, Civil Engineer, Security Manager <sup>31</sup>                     | Crane Operator, Terminal Manager, Logistics Planner, Mechanical Engineer <sup>110</sup>                  | Casual Laborer (Loaders) <sup>58</sup>   | Project Consultant (Port Development), Independent Surveyor <sup>108</sup>            | Engineering Intern, Port Operations Trainee <sup>59</sup> |



|   |   |   |   |   |  |
|---|---|---|---|---|--|
| <b>Offshore Oil &amp; Gas</b>                 | Regulator (Petroleum Commission)  | Subsea Engineer, Geologist, Production Technician, HSSE Manager, Logistics Manager <sup>5</sup> |   | Contract Engineer, Technical Consultant, Remote Operator <sup>61</sup>                              | Engineering Intern, Trainee (e.g., Marine Control Room Operator) <sup>61</sup> |
| <b>Coastal &amp; Marine Tourism</b>           | Tourism Officer (GTA), Park Ranger (Wildlife Division) <sup>99</sup>                | Hotel Manager, Director of F&B, Chef, Lifeguard, Travel Consultant <sup>86</sup>                | Artisan, Local Food Vendor, Community Tour Guide <sup>2</sup>           | Freelance Tour Guide, Digital Marketing Consultant, Event Planner <sup>94</sup>                     | Hospitality Intern, Tour Guide Apprentice <sup>86</sup>                        |
| <b>Marine Conservation &amp; Research</b>     | Environmental Protection Officer, Marine Protected Area (MPA) Manager <sup>32</sup> | Corporate Sustainability Officer  | Community Turtle Guardian, Mangrove Restoration Volunteer <sup>90</sup> | Research Consultant (EIA), Project Manager (NGO Contract), Grant Writer <sup>95</sup>               | Research Assistant (University), Conservation Intern (NGO) <sup>8</sup>        |
| <b>Ancillary Services (Tech, Legal, etc.)</b> | Maritime Lawyer (Attorney General's Dept) <sup>30</sup>                             | Marine Insurance Broker, Naval Architect, IT Developer (Logistics Software) <sup>20</sup>       |   | Freelance Marine Data Analyst, Virtual Technical Consultant, Remote Software Developer <sup>9</sup> | Cybersecurity Intern, Legal Intern (Maritime Law) <sup>117</sup>               |

---

## Section 5: Workforce Development Intelligence and Strategic Recommendations

The preceding analysis provides a comprehensive map of the employment landscape in Ghana's Blue Economy, revealing a complex, segmented, and rapidly evolving workforce environment. To translate this analysis into progress, a deliberate and coordinated effort in workforce development is required. This final section synthesizes the key findings into strategic intelligence, identifying critical skills gaps and offering targeted, actionable recommendations for key stakeholders: the Government of Ghana, education and training providers, and the private sector. These recommendations are designed to build the human capital necessary to power a sustainable, inclusive, and competitive Blue Economy for the future.

## **5.1 Skills Gap Analysis and Future Competency Requirements**

A significant disconnect exists between the current state of Ghana's labor force and the emerging needs of a modern Blue Economy. Addressing this skills gap is the central challenge for workforce development.

### **Current Gaps**

The most prominent gap is the structural imbalance in the workforce. A large portion of the labor force is concentrated in low-skill, informal artisanal fishing, a sector facing ecological and economic collapse.<sup>3</sup> Conversely, the high-growth, high-value sectors of maritime technology, sustainable aquaculture, and offshore energy demand specialized skills that are in short supply locally.<sup>6</sup> This leads to a "missing middle"—a deficit of certified, mid-level technical and vocational professionals who are essential for operational roles. While some project-based training exists<sup>93</sup>, it is not yet sufficient to meet the systemic demand for qualified technicians, mechanics, and hospitality professionals. There is also a deficit at the highest level, with a recognized shortage of skilled personnel in areas like subsea engineering, advanced port management, and marine data science, often necessitating reliance on expatriate expertise.<sup>125</sup>

## Future Competency Requirements

To thrive, Ghana's future Blue Economy workforce must be equipped with a new set of competencies that align with global trends in technology, sustainability, and management. Key areas of need include:

1. **Digital Literacy and Data Science:** Proficiency in digital systems is becoming non-negotiable. This ranges from operators using the **Integrated Customs Management System (ICUMS)** in ports <sup>60</sup> to the need for **data scientists, GIS specialists, and remote sensing analysts** to support the Sustainable Ocean Plan and marine research.<sup>16</sup> The future of port and logistics management will be data-driven, requiring a workforce capable of managing automated systems and analyzing complex datasets.<sup>6</sup>
2. **STEM and Scientific Research Skills:** Growth in sustainable sectors is contingent on a strong foundation in Science, Technology, Engineering, and Mathematics (STEM). This includes **marine biologists and environmental scientists** for conservation and MPA management, **aquaculture technologists and fish health specialists** for a productive aquaculture industry, and various **engineers (marine, mechanical, civil)** for offshore energy and coastal infrastructure projects.<sup>23</sup>
3. **Certified Technical and Vocational Skills:** The "missing middle" must be filled by a cadre of formally certified professionals. This includes **welders, electricians, and marine mechanics** for the shipbuilding, repair, and offshore sectors; **certified hospitality staff and lifeguards** for the tourism industry; and technicians skilled in **sustainable fishing gear technology** and **post-harvest processing**.<sup>58</sup>
4. **Business, Entrepreneurship, and Management Skills:** As the economy diversifies, there is a growing need for individuals who can manage new enterprises. This includes skills in business planning, financial management, and marketing, particularly for those starting **aquaculture farms, ecotourism businesses**, or navigating the freelance and gig economy.<sup>10</sup>
5. **Policy, Governance, and Legal Skills:** The establishment of the new Blue Economy Commission and the development of complex regulatory frameworks require a supply of professionals skilled in **public policy, maritime law, international relations, and resource governance** to staff these critical institutions.<sup>15</sup>

## 5.2 Recommendations for Policy and Governance (The Blue Economy Commission, MoFAD, GMA)

The government and its agencies must lead the charge in creating a policy environment that fosters targeted workforce development.

1. **Recommendation 1: Develop and Implement a National Blue Economy Workforce Strategy.** The new Blue Economy Commission should be mandated to lead the development of a comprehensive, multi-year workforce strategy. This strategy must be data-driven, based on continuous labor market analysis, and developed in close consultation with industry and educational institutions. Its primary goal should be to forecast future skills needs and coordinate national efforts to meet them, ensuring that training and education are directly aligned with the strategic goals of the Sustainable Ocean Plan.
2. **Recommendation 2: Strengthen and Formalize Community-Based Management Roles.** To address the "implementation gap" in resource management, the government should provide official legal backing, standardized training curricula, and sustainable financial resources for community-level bodies like CBFMCs and Landing Beach Enforcement Committees. This would transform voluntary or precarious roles into legitimate, paid, part-time employment in local monitoring, data collection, and enforcement. This creates a new cadre of "community resource wardens," empowering local communities and improving the effectiveness of national conservation policies.
3. **Recommendation 3: Create an Enabling Environment for the Blue Gig Economy.** Recognizing the growing importance of freelance and contract work, the government should explore policies that support this segment of the workforce. This could include developing frameworks for portable social security benefits, simplifying tax registration for independent contractors, and promoting digital platforms that connect local freelance talent with blue economy projects. Supporting the gig economy acknowledges it as a vital and flexible component of the modern labor market.

## 5.3 Recommendations for Education and Training Providers (Universities, TVETs)

Educational institutions are on the front line of building the human capital for the Blue Economy. They must become more agile and responsive to the rapidly changing needs of the industry.

1. **Recommendation 1: Modernize Curricula through Deep Industry**

**Collaboration.** Universities such as the Regional Maritime University (RMU), the University of Cape Coast (UCC), and Kwame Nkrumah University of Science and Technology (KNUST) must move beyond traditional programs. They should establish formal partnerships with key industry players—GPHA, major oil and gas companies, the Ghana Tourism Authority, and aquaculture firms—to co-design new, interdisciplinary degree and certificate programs in emerging fields like **Marine Data Science, Sustainable Aquaculture Management, Ecotourism and Hospitality Management, and Maritime Automation and Robotics.**<sup>14</sup>

2. **Recommendation 2: Establish a National TVET Center of Excellence for Blue**

**Skills.** Ghana needs a dedicated vocational training hub focused on certifying the "missing middle" technical workforce. This Center of Excellence, possibly developed from an existing TVET institution in a coastal region, should offer internationally recognized certifications in **marine mechanics, advanced welding for maritime applications, sustainable fishing gear technology, fish processing and safety standards, and professional hospitality services.** This would create a reliable pipeline of skilled technicians for all operational aspects of the Blue Economy.

3. **Recommendation 3: Mandate and Expand Structured Work-Based Learning.**

Internships, apprenticeships, and practical attachments should be a mandatory, credit-bearing component of all blue economy-related degree and TVET programs. Educational institutions should have dedicated staff to build and manage formal partnerships with private sector companies and NGOs to scale up the availability of these structured work-based learning opportunities, ensuring students graduate with both theoretical knowledge and practical, industry-relevant experience.<sup>93</sup>

## 5.4 Recommendations for Private Sector and Investors

The private sector is the ultimate consumer of the skilled labor force and has a vested

interest in its development. Proactive investment in human capital is a strategic necessity, not just a corporate social responsibility.

- 1. **Recommendation 1: Invest Directly in Local Talent Pipelines.** Instead of relying heavily on expatriate labor for specialized roles, companies should make long-term investments in building a local talent pipeline. This includes funding specialized training programs at local universities and TVETs, sponsoring scholarships, and establishing robust, well-paid apprenticeship programs. Such investments reduce long-term recruitment costs, improve operational stability, and build significant local goodwill.
- 2. **Recommendation 2: Strategically Support Livelihood Diversification Initiatives.** As part of Corporate Social Responsibility (CSR) and social investment strategies, private sector firms, particularly those in the extractive industries, should partner with and fund credible NGOs that are implementing alternative livelihood projects in coastal communities. Supporting the transition of fishing communities to sustainable livelihoods in ecotourism or aquaculture is a direct investment in social stability and creates a more positive and resilient operating environment.
- 3. **Recommendation 3: Capitalize on Emerging Sector Growth with a "Jobs-First" Approach.** Investors should align their capital with Ghana's policy direction by focusing on high-potential, job-creating sectors like **sustainable aquaculture** and **ecotourism**. These sectors offer strong returns while generating significant employment, particularly for youth and women.<sup>2</sup> Investment strategies should explicitly include targets for local job creation and skills development, ensuring that economic growth is inclusive.

Table 5.1: Summary of Strategic Recommendations for Key Stakeholders

| Stakeholder Group                             | Key Challenge                             | Recommended Action                                  | Desired Outcome   |
|---|---|---|---|
| <b>Government &amp; Policy</b> (Blue Economy) | Fragmented workforce planning; weak local | Develop a National Blue Economy Workforce Strategy; | A coordinated, national approach to skills development; |

|  |  |  |  |
|--|--|--|--|
| Commission, MoFAD, GMA)                                  | enforcement; unsupported gig economy.  | Formalize and fund community management roles; Create enabling policies for freelance workers.   | effective, localized resource management; a resilient and modern labor market.   |
| <b>Education &amp; Training</b><br>(Universities, TVETs) | Outdated curricula; deficit of certified technical skills; gap between theory and practice.                  | Co-design new programs with industry; Establish a TVET Center of Excellence for Blue Skills; Mandate and expand structured internships.                            | A graduate workforce with relevant, in-demand skills; a pipeline of certified technicians; graduates with practical experience.        |
| <b>Private Sector &amp; Investors</b>                    | Shortage of local specialized talent; social instability in operational areas; uncertain investment climate. | Invest in local training pipelines and apprenticeships; Fund community livelihood diversification projects; Focus investment on high-growth, job-creating sectors. | Reduced reliance on expatriates; stable community relations; alignment of investments with national priorities for sustainable growth. |
| <b>Development Partners &amp; NGOs</b>                   | Project-based, short-term impact; risk of dependency; need for scalability.                                  | Provide long-term funding for institutional capacity building; Focus on "training the trainers" programs; Support the scale-up of successful pilot projects.       | Sustainable local institutions; self-perpetuating skills development; national ownership and scaling of proven solutions.              |

## Works cited

1. Awakening New Depths for Sustainable Ocean Management, accessed June 25, 2025, <https://www.undp.org/ghana/blog/awakening-new-depths-sustainable-ocean-management>
2. Ghana's Marine Economy: A Strategic Choice Between Fishing And Coastal Tourism, accessed June 25, 2025, <https://www.modernghana.com/news/1402232/ghanas-marine-economy-a->



- [strategic-choice-between.html](#)
3. FISHERIES CO-MANAGEMENT TRAINING REPORT JUNE 2023 | Hen Mpoano, accessed June 25, 2025, [https://henmpoano.org/wp-content/uploads/2025/03/GFRA-Fisheries-Co-management-Report\\_June-2023.pdf](https://henmpoano.org/wp-content/uploads/2025/03/GFRA-Fisheries-Co-management-Report_June-2023.pdf)
  4. Assessing Livelihood Resilience of Artisanal Fisherfolk to the Decline in Small-Scale Fisheries in Ghana - MDPI, accessed June 25, 2025, <https://www.mdpi.com/2071-1050/13/18/10404>
  5. Job Opportunities with Tullow Oil – Ghana - Careers in Africa, accessed June 25, 2025, <https://www.careersinafrica.com/job-opportunities-with-tullow-oil-ghana/>
  6. Transforming the maritime industry (1) - The Business & Financial Times - B&FT, accessed June 25, 2025, <https://thebftonline.com/2025/01/15/transforming-the-maritime-industry-1/>
  7. Ghana Promotes Community-Based Ecotourism At 2025 KOPIST Forum, accessed June 25, 2025, <https://isd.gov.gh/ghana-promotes-community-based-ecotourism-at-2025-kopist-forum/>
  8. Director, Conservation & Research at Ghana Wildlife Society | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/director-conservation-research-7w28dg>
  9. Ewura Ama E. - Marine Engineering - Upwork Freelancer from ..., accessed June 25, 2025, <https://www.upwork.com/freelancers/~01c3bd2a488268cb37>
  10. The Gig Economy- Exploring the Trend - Jobberman Ghana, accessed June 25, 2025, <https://www.jobberman.com.gh/discover/the-gig-economy-exploring-the-trend>
  11. (PDF) Community based management of artisanal marine fish resources in the Western Region of Ghana: Issues, challenges and the way forward 1 - ResearchGate, accessed June 25, 2025, [https://www.researchgate.net/publication/343189376\\_Community\\_based\\_management\\_of\\_artisanal\\_marine\\_fish\\_resources\\_in\\_the\\_Western\\_Region\\_of\\_Ghana\\_Issues\\_challenges\\_and\\_the\\_way\\_forward\\_1](https://www.researchgate.net/publication/343189376_Community_based_management_of_artisanal_marine_fish_resources_in_the_Western_Region_of_Ghana_Issues_challenges_and_the_way_forward_1)
  12. FISHERIES CO-MANAGEMENT TRAINING REPORT JUNE 2022 | Hen Mpoano, accessed June 25, 2025, [https://henmpoano.org/wp-content/uploads/2025/03/GFRA-Fisheries-Co-management-Report\\_June-2022.pdf](https://henmpoano.org/wp-content/uploads/2025/03/GFRA-Fisheries-Co-management-Report_June-2022.pdf)
  13. Stolen at Sea: How illegal 'saiko' fishing is fuelling the collapse of Ghana's fisheries - Environmental Justice Foundation, accessed June 25, 2025, [https://ejfoundation.org/resources/downloads/Stolen-at-sea\\_06\\_2019.pdf](https://ejfoundation.org/resources/downloads/Stolen-at-sea_06_2019.pdf)
  14. Elevating Ghana's Maritime Sector: A Blueprint for capacity building, research, awareness, and knowledge sharing - MyJoyOnline, accessed June 25, 2025, <https://www.myjoyonline.com/elevating-ghanas-maritime-sector-a-blueprint-for-capacity-building-research-awareness-and-knowledge-sharing/>
  15. Govt Moves To Establish Blue Economy Commission To Safeguard ..., accessed June 25, 2025, <https://isd.gov.gh/govt-moves-to-establish-blue-economy->

- [commission-to-safeguard-marine-resources/](#)
16. West Africa Coastal Areas Resilience Investment Project 2 - World Bank, accessed June 25, 2025, <https://projects.worldbank.org/en/projects-operations/procurement-detail/OP00305156>
  17. Ghana renews commitment to protecting the ocean | United Nations ..., accessed June 25, 2025, <https://www.undp.org/ghana/press-releases/ghana-renews-commitment-protecting-ocean>
  18. Charting Ghana's Path to a Sustainable Blue Economy: Insights from ..., accessed June 25, 2025, <https://www.myjoyonline.com/charting-ghanas-path-to-a-sustainable-blue-economy-insights-from-global-best-practices-and-the-role-of-a-national-strategy/>
  19. Understanding the Concept of the Blue Economy - Ghana Shippers Authority, accessed June 25, 2025, <https://shippers.org.gh/index.php/39439/>
  20. The Challenges of the Blue Economy in Ghana and the way forward - Texila International Journal, accessed June 25, 2025, [https://www.texilajournal.com/thumbs/article/Management\\_Vol%205\\_Issue%201\\_Article\\_6.pdf](https://www.texilajournal.com/thumbs/article/Management_Vol%205_Issue%201_Article_6.pdf)
  21. Govt moves to establish Blue Economy Commission to Safeguard Marine Resources, accessed June 25, 2025, <https://www.modernghana.com/news/1391380/govt-moves-to-establish-blue-economy-commission.html>
  22. Climate Stories | Fisheries and Blue Economy - World Bank, accessed June 25, 2025, <https://www.worldbank.org/en/news/feature/2023/03/03/fisheries-under-pressure-from-ghana-to-the-caribbean>
  23. Open Opportunities - Ocean Accounts Project in Ghana | ACECoR - Centre for Coastal Management (CCM), accessed June 25, 2025, <https://ccm.ucc.edu.gh/open-opportunities-ocean-accounts-project-ghana>
  24. MINISTRY OF FISHERIES AND AQUACULTURE DEVELOPMENT, accessed June 25, 2025, [https://mofep.gov.gh/sites/default/files/pbb-estimates/2024/2024-PBB-MFAD .pdf](https://mofep.gov.gh/sites/default/files/pbb-estimates/2024/2024-PBB-MFAD.pdf)
  25. Ministry of Fisheries and Aquaculture Development - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ministry\\_of\\_Fisheries\\_and\\_Aquaculture\\_Development](https://en.wikipedia.org/wiki/Ministry_of_Fisheries_and_Aquaculture_Development)
  26. Fisheries Commission – Welcome to the Fisheries Commission Official Website, accessed June 25, 2025, <https://fishcom.gov.gh/wp/>
  27. TAKING STOCK - Fisheries Transparency Initiative, accessed June 25, 2025, [https://fiti.global/wp-content/uploads/2023/04/FiTl\\_GHA\\_TaSo\\_DetailedAssessmentReport\\_20230426 .pdf](https://fiti.global/wp-content/uploads/2023/04/FiTl_GHA_TaSo_DetailedAssessmentReport_20230426.pdf)
  28. Overview of Monitoring, Control and Surveillance Division (Mcs) of the Fisheries Commission - Ministry of Food and Agriculture, accessed June 25, 2025, <https://mofa.gov.gh/site/index.php/publications/agricultural-articles/322->

[overview-of-monitoring-control-and-surveillance-division-mcs-of-the-fisheries-commission](#)

29. Ghana Maritime Authority – Regulating the Maritime Industry, accessed June 25, 2025, <https://ghanamaritime.gov.gh/>
30. News - Ghana Maritime Authority, accessed June 25, 2025, <https://ghanamaritime.gov.gh/news/>
31. News Articles - Ghana Ports & Harbours Authority, accessed June 25, 2025, <https://www.ghanaports.gov.gh/media/publications>
32. Ghana Environmental Protection Agency - weADAPT, accessed June 25, 2025, <https://weadapt.org/organisation/ghana-environmental-protection-agency/>
33. Environmental Protection Agency (Ghana) - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Environmental\\_Protection\\_Agency\\_\(Ghana\)](https://en.wikipedia.org/wiki/Environmental_Protection_Agency_(Ghana))
34. Evidence-based regulation for sustainable development – coastal protection in Ghana, accessed June 25, 2025, <https://www.rural21.com/english/archive/2022/01/detail/article/evidence-based-regulation-for-sustainable-development-coastal-protection-in-ghana.html>
35. Mobilizing collective action for a sustainable ocean economy, accessed June 25, 2025, <https://www.undp.org/ghana/blog/mobilizing-collective-action-sustainable-ocean-economy>
36. The development of aquaculture and culture based fisheries in Ghana, accessed June 25, 2025, <https://www.fao.org/4/AC107E/AC107E00.htm>
37. Ghana - 渔业和水产养殖国家概况, accessed June 25, 2025, <https://www.fao.org/fishery/zh/facp/gha>
38. Institutional Documents – Fisheries Commission, accessed June 25, 2025, <https://fishcom.gov.gh/wp/institutional-documents/>
39. Ghana National Aquaculture Development Plan, accessed June 25, 2025, <https://chamberofaquaculture.com/chamber/pdfs/GHANA%20NATIONAL%20AQUACULTURE%20DEVELOPMENT%20PLAN.pdf>
40. BSC AQUACULTURE AND FISHERIES SCIENCE - University for Development Studies, accessed June 25, 2025, <https://uds.edu.gh/academics/programmes/frne-119>
41. Aquaculture Manager at Lohachy Farms, Epe - Jobberman, accessed June 25, 2025, <https://www.jobberman.com/listings/aquaculture-manager-wp6n2p>
42. Senior Fishery and Aquaculture Officer - Vacancies In Ghana, accessed June 25, 2025, <https://www.vacanciesinghana.com/job/senior-fishery-and-aquaculture-officer>
43. Fishery and aquaculture industry in Ghana - comhafat, accessed June 25, 2025, <https://www.comhafat.org/fr/files/publications/112102014102624AM.pdf>
44. FEED THE FUTURE GHANA FISHERIES RECOVERY ACTIVITY (GFRA), accessed June 25, 2025, [https://fishcom.gov.gh/wp/wp-content/uploads/2023/07/GBV-Vulnerability-Assessment\\_Final.pdf](https://fishcom.gov.gh/wp/wp-content/uploads/2023/07/GBV-Vulnerability-Assessment_Final.pdf)
45. Subsidies in Ghana's Marine Artisanal Fisheries Sector. - Coastal Resources

- Center, accessed June 25, 2025, [https://www.crc.uri.edu/download/GH2014\\_POL059\\_CRC\\_FIN508.pdf](https://www.crc.uri.edu/download/GH2014_POL059_CRC_FIN508.pdf)
46. Ghana to expand artisanal fishing zone amid trawler violations - Mongabay, accessed June 25, 2025, <https://news.mongabay.com/short-article/ghana-to-expand-artisanal-fishing-zone-amid-trawler-violations/>
  47. Determinants of Catch Sales in Ghanaian Artisanal Fisheries - Open Knowledge Repository, accessed June 25, 2025, <https://openknowledge.worldbank.org/bitstreams/1fe79669-87ee-585c-8f9c-7f7124adabeb/download>
  48. Scoping assessment of sustainable livelihood opportunities in the artisanal fishing communities of the Central Region of Ghana - Environmental Justice Foundation, accessed June 25, 2025, [https://ejfoundation.org/resources/downloads/Sustainable\\_livelihood\\_opportunities\\_fishing\\_Ghana.pdf](https://ejfoundation.org/resources/downloads/Sustainable_livelihood_opportunities_fishing_Ghana.pdf)
  49. Saiko fishing costs Ghana tens of millions of dollars in a single year | Dialogue Earth, accessed June 25, 2025, <https://dialogue.earth/en/ocean/8677-saiko-fishing-costs-ghana-tens-of-millions-of-dollars-in-a-single-year/>
  50. Ocean Warming: A Livelihood Threat to Ghana's Coastal Fishers - CSIS, accessed June 25, 2025, <https://www.csis.org/analysis/ocean-warming-livelihood-threat-ghanas-coastal-fishers>
  51. Fish Export Companies in Ghana | Ghana Exporters of Fish, accessed June 25, 2025, <https://www.exportgenius.in/ghana-exporters-of-fish>
  52. Pioneer Food Cannery recruits 200 new workers - Modern Ghana, accessed June 25, 2025, <https://www.modernghana.com/news/401587/pioneer-food-cannery-recruits-200-new-workers.html>
  53. Job Vacancy For Factory Hands At Cosmos Seafoods Co. Ltd (SHS Graduate Can Apply) - Tema, accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-factory-hands-at-cosmos-seafoods-co-ltd-shs-graduate-can-apply-tema/>
  54. Job Vacancy For Quality Assurance Officer At Cosmos Seafoods Co. Ltd (Tema), accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-quality-assurance-officer-at-cosmos-seafoods-co-ltd-tema/>
  55. Job offer Fisheries and Aquaculture - Ghana - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-fisheries-aquaculture>
  56. Enhancing Small-Scale Aquaculture Towards Agribusiness Development - MOFA, accessed June 25, 2025, <https://mofa.gov.gh/site/index.php/programmes/65-agribusiness/investment-areas/53-enhancing-small-scale-aquaculture-towards-agribusiness-development>
  57. FAO Senior Fishery and Aquaculture Officer - UNjobnet, accessed June 25, 2025, <https://www.unjobnet.org/jobs/detail/79871629>
  58. Ghana Ports and Harbours Authority - GitHub Pages, accessed June 25, 2025, <https://applyingjobz.github.io/gpha-RECRUITment/>
  59. Accra- Ghana Resumes - Maritime Jobs, accessed June 25, 2025,

- <https://www.maritimejobs.com/resumes/city-accra/country-ghana?search=port%20and%20harbour%20engineer>
60. Jobs in Ghana - Accra - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs>
61. marine Jobs in Ghana | Careerjet, accessed June 25, 2025, <https://www.careerjet.com.gh/marine-jobs>
62. FREIGHT MASTERS SHIPPING AGENCY Tema - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/recruiter/167791>
63. OBT SHIPPING GHANA LTD. Accra - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/recruiter/119861>
64. Frequently Asked Questions - Safety Marine International Crewing Limited, accessed June 25, 2025, <https://safetymarinegh.com/frequently-asked-questions/>
65. Ghana Resumes - Maritime Jobs, accessed June 25, 2025, <https://www.maritimejobs.com/resumes/country-ghana?search=electrical%20engineer%20or%20computer%20hardware%20engineer&page=2>
66. Nautical Science Department – RMU - Regional Maritime University, accessed June 25, 2025, <https://rmu.edu.gh/nautical-science-department/>
67. Seafarers Training – Ghana Maritime Authority, accessed June 25, 2025, <https://ghanamaritime.gov.gh/seafarers-training/>
68. Seafarers Certification - Ghana Maritime Authority, accessed June 25, 2025, <https://ghanamaritime.gov.gh/seafarers-certification/>
69. Career - Baj Freight and Logistics, accessed June 25, 2025, <https://bajfreight.com/career/>
70. Conship: Home, accessed June 25, 2025, <https://conship.com.gh/>
71. Transport, logistics Jobs Ghana - Accra - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-vacancies-search-ghana/?f%5B0%5D=im field offre secteur%3A137&f%5B1%5D=im field offre secteur%3A151&f%5B2%5D=im field offre secteur%3A130&f%5B3%5D=im field offre niveau etude%3A56&f%5B4%5D=im field offre region%3A992&f%5B5%5D=im field offre contrat type%3A42&f%5B6%5D=im field offre region%3A61&f%5B7%5D=im field offre secteur%3A140&f%5B8%5D=im field offre secteur%3A138&f%5B9%5D=im field offre region%3A59&f%5B10%5D=im field offre secteur%3A156&f%5B11%5D=im field offre secteur%3A22&f%5B12%5D=im field offre niveau experience%3A70&f%5B13%5D=im field offre metiers%3A28>
72. Supply Chain & Procurement Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/supply-chain-procurement>
73. Logistics Jobs in Ghana | Careerjet, accessed June 25, 2025, <https://www.careerjet.com.gh/logistics-jobs>
74. RMU Journal - Regional Maritime University, accessed June 25, 2025, <https://rmu.edu.gh/rmu-journal/>
75. Our activities in the Ghana - Eni, accessed June 25, 2025,



- <https://www.eni.com/en-IT/actions/global-activities/ghana.html>
76. Current Tullow Oil Jobs in Ghana 2022 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/tullow-oil-jobs-in-ghana/>
  77. Careers | MODEC, accessed June 25, 2025, <https://www.modec.com/career/>
  78. Current Oil and Gas Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/oil-and-gas-jobs-in-ghana/>
  79. Job vacancies - ghana | OilandGas, accessed June 25, 2025, <https://oilandgasjobsearch.com/jobs?title=ghana>
  80. Companies and professional areas - Eni, accessed June 25, 2025, <https://www.eni.com/en-IT/careers/job-opportunities/professional-areas.html>
  81. EMGLOBE MARITIME LIMITED Accra - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/recruiter/4149>
  82. Job ad Ghana : Marketing Manager - Tema - Greater Accra - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-vacancies-ghana/marketing-manager-17155>
  83. Full article: Blue economy investment and sustainability of Ghana's territorial waters: an application of structural equation modelling, accessed June 25, 2025, <https://www.tandfonline.com/doi/full/10.1080/19397038.2023.2195422>
  84. Ghana's tourism sector focusing on diaspora and business travel - Africa 2024, accessed June 25, 2025, <https://oxfordbusinessgroup.com/reports/ghana/2024-report/tourism/destination-of-choice-sector-growth-is-being-driven-by-diversification-business-travel-and-strategies-to-attract-the-diaspora-population-overview/>
  85. Hospitality Jobs in Ghana Urgent Hiring in Top 5 Star Hotel & Resort - Hozpitality.com, accessed June 25, 2025, <https://www.hozpitality.com/browse-jobs/ghana/>
  86. Current Travel and Tourism Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/travel-and-tourism-jobs-in-ghana/>
  87. Hospitality & Leisure Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/hospitality-leisure>
  88. Current Travel and Tourism Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/travel-and-tourism-jobs-in-ghana/page/2/>
  89. Ghana Must Leverage Ecotourism - Zed Multimedia, accessed June 25, 2025, <https://zedmultimedia.com/2025/01/24/ghana-must-leverage-ecotourism/>
  90. Sustainable Ocean Alliance Ghana Hub, accessed June 25, 2025, <https://www.soaghana.org/>
  91. zedmultimedia.com, accessed June 25, 2025, <https://zedmultimedia.com/2025/01/24/lets-embrace-ecotourism/#:~:text=To%20achieve%20a%20thriving%20ecotourism,in%20rural%20and%20coastal%20areas.>
  92. U.S. Supports Livelihoods for 300 Young People in Coastal Communities,

- accessed June 25, 2025, <https://gh.usembassy.gov/u-s-supports-livelihoods-for-300-young-people-in-coastal-communities/>
93. MPS outdoored skills training for five fishing communities - The Business & Financial Times, accessed June 25, 2025, <https://thebftonline.com/2025/03/07/mps-outdoored-skills-training-for-five-fishing-communities/>
94. Jobs in Ghana - Accra - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/tourism-travel>
95. Fisheries Programme Manager at Environmental Justice Foundation - Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/jobs/fisheries-programme-manager-environmental-justice-foundation/>
96. Coastal Livelihoods Foundation NPC, accessed June 25, 2025, <https://www.coastallivelihoods.org/>
97. Welcoming local NGOs as Hub partners in Ghana, Namibia and ..., accessed June 25, 2025, <https://oneoceanhub.org/welcoming-local-ngos-as-hub-partners-in-ghana-namibia-and-south-africa-from-seaweed-education-to-human-rights-legal-support/>
98. Hen Mpoano – Ghana – Our Coast, Our Future, accessed June 25, 2025, <https://henmpoano.org/>
99. Communities join Hen Mpoano to restore coastal forest ecosystem - Agri Ghana Online, accessed June 25, 2025, <https://agrighanaonline.com/communities-join-hen-mpoano-to-restore-coastal-forest-ecosystem/>
100. Centre for Coastal Management (CCM), accessed June 25, 2025, <https://ccm.ucc.edu.gh/>
101. Ocean Country Partnership Programme: Ghana Supporting the ..., accessed June 25, 2025, <https://www.find-tender.service.gov.uk/Notice/030017-2025?origin=SearchResults&p=2>
102. Currently running tenders | IUCN, accessed June 25, 2025, <https://iucn.org/procurement/currently-running-tenders>
103. 20 Fully Remote Data & Analytics Jobs in Ghana - MeetFrank, accessed June 25, 2025, <https://meetfrank.com/fully-remote-data-analytics-jobs-in-ghana>
104. How much do Ghana Maritime Authority employees make? | Salary.com, accessed June 25, 2025, <https://www.salary.com/research/company/ghana-maritime-authority-salary>
105. Administrative Officer Salary at Ghana Maritime Authority BETA, accessed June 25, 2025, <https://www.salary.com/research/company/ghana-maritime-authority/administrative-officer-salary?cjid=13521647>
106. Marine Engineers Freelancers in Ghana | AfricaShore, accessed June 25, 2025, <https://www.africashore.com/expert/ghana/marine-engineer>
107. Marine Biologists Freelancers in Ghana - AfricaShore, accessed June 25, 2025, <https://www.africashore.com/expert/ghana/marine-biologist>
108. V-Marine Services, accessed June 25, 2025, <https://vmarinegh.com/>
109. Current Public Sector Jobs in Ghana 2025 - See Jobweb Ghana, accessed June

- 25, 2025, <https://jobwebghana.com/job-category/public-sector-jobs-in-ghana/>
110. Careers | DP World, accessed June 25, 2025, <https://www.dpworld.com/careers>
111. Truck Driver - Conship, accessed June 25, 2025, <https://conship.com.gh/jobs/truck-driver/>
112. Investment Flow in the Artisanal Fishery Value Chain in Ghana Fjárfestingar í virðiskeðju smábátafiskveiða - Skemman, accessed June 25, 2025, [https://skemman.is/bitstream/1946/37369/1/Hannah%20Antwi Thesis%20PDF.pdf](https://skemman.is/bitstream/1946/37369/1/Hannah%20Antwi%20Thesis%20PDF.pdf)
113. TerraFund for AFR100 Ghana | Forests and Landscapes Fund - Milkywire, accessed June 25, 2025, <https://www.milkywire.com/impact-funds/forests-and-landscapes-fund/projects/terrafund-for-afr100-ghana>
114. West Africa Coastal Areas Resilience Investment Project 2 - World Bank, accessed June 25, 2025, <https://projects.worldbank.org/en/projects-operations/procurement-detail/OP00301279>
115. The state, capital, and worker vulnerability: The case of ride-hailing drivers in Ghana | The Economic and Labour Relations Review - Cambridge University Press, accessed June 25, 2025, <https://www.cambridge.org/core/journals/the-economic-and-labour-relations-review/article/state-capital-and-worker-vulnerability-the-case-of-ridehailing-drivers-in-ghana/5554B8CD75CF15A08B7D8B7C391D7267>
116. Recruitment Ghana : port officer CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/port%20officer>
117. Admission into Regional Maritime University –Cyber Security Internship Program 2022/2023, accessed June 25, 2025, <https://rmu.edu.gh/wp-content/uploads/2023/02/Cyber-Security-Training-Program-ADVERT.pdf>
118. Sea-ing Africa: Research-Driven Internships (sponsored) in Port City Regions in Ghana and Morocco - Universiteit Leiden, accessed June 25, 2025, <https://www.student.universiteitleiden.nl/en/vr/social-and-behavioural-sciences/research-projects/sustainability--development/sea-ing-africa>
119. Internship Programme 2022 | GoGMI - Gulf of Guinea Maritime Institute, accessed June 25, 2025, <https://www.gogmi.org.gh/zh/internship-programme>
120. USAID funding cuts jeopardize creation of Ghana's first Marine Protected Area - Mongabay, accessed June 25, 2025, <https://news.mongabay.com/2025/03/usa-id-funding-cuts-jeopardize-creation-of-ghanas-first-marine-protected-area/>
121. Submit CVs - New Recruitment at Meridian Port Services LTD - Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/jobs/submit-cvs-new-recruitment-meridian-port-services-ltd/>
122. Careers | Tullow Oil plc (LSE: TLW), accessed June 25, 2025, <https://www.tulloil.com/careers/>
123. Ghana Tourism Authority begins strategic management retreat in Kumasi to realign sector goals | Entertainment - Class FM, accessed June 25, 2025, <https://mobile.classfmonline.com/entertainment/Ghana-Tourism-Authority-begins-strategic-management-retreat-in-Kumasi-to-realign-sector-goals-62029?ID=62029>



124. Coastal Marine Conservation Drive Project (COMADRIP) | Centre for ..., accessed June 25, 2025, <https://ccm.ucc.edu.gh/project/coastal-marine-conservation-drive-project-comadrip>
125. Leveraging Ghana's Maritime Industry For Economic Development, accessed June 25, 2025, <https://www.modernghana.com/news/193078/leveraging-ghanas-maritime-industry-for-economic-developmen.html>
126. Regional Maritime University partners with Ghana Maritime Authority for 2025 Educational and Career Fair - MyJoyOnline, accessed June 25, 2025, <https://www.myjoyonline.com/regional-maritime-university-partners-with-ghana-maritime-authority-for-2025-educational-and-career-fair/>

# **An Analytical Survey of Employment in Ghana's Bronze Economy: A Workforce and Policy Framework for 2025**

## **Part I: Executive Summary & Strategic Overview**

### **1.1 Introduction**

Ghana's economic narrative is often dominated by its burgeoning service sector and established commodity exports. However, beneath these headline indicators lies the foundational layer of the national economy: the Bronze Economy. This report defines the Bronze Economy as the nexus of primary agricultural production, natural resource extraction, basic processing, and their direct support services. It is the bedrock of rural livelihoods and the origin point for a vast majority of the nation's value chains. Despite its fundamental importance, the employment landscape within this economy is complex, fragmented, and often poorly understood, characterized by a blend of formal structures, informal arrangements, seasonal cycles, and community-based systems.

The objective of this report is to provide a comprehensive, multi-source inventory and analysis of the entire spectrum of employment within Ghana's Bronze Economy as of June 2025. By systematically mapping every form of work—from formal, salaried positions in commercial agribusiness to the informal, daily-wage labor of the artisanal miner and the community-based role of the cooperative member—this research aims to create a foundational dataset and strategic framework. The ultimate goal is to support evidence-based national workforce development strategies, inform educational and vocational training curricula, and guide coherent policy formulation for sustainable and inclusive growth. This analysis moves beyond a simple catalog of

jobs to dissect the underlying structures, skill requirements, compensation realities, and career pathways that define the working lives of millions of Ghanaians.

## 1.2 Key Findings at a Glance

The comprehensive survey of Ghana's Bronze Economy reveals a dynamic and multifaceted labor market characterized by deep structural dualities and emerging trends. The most critical findings are synthesized below:

127. **The Predominance of Informal and Precarious Labor:** The Bronze Economy is overwhelmingly characterized by informal, seasonal, and contractual labor, particularly in smallholder agriculture, artisanal mining, and small-scale fisheries. Recruitment for these roles occurs primarily through community networks and classified platforms rather than formal job portals.<sup>1</sup> Compensation is frequently structured around daily or piece-rate wages, which, while often compliant with the national minimum wage, consistently fall far below established living wage benchmarks, perpetuating a cycle of low-income work for a significant portion of the workforce.<sup>4</sup>
128. **The Structuring Role of Government and Development Partners:** State agencies and international development partners are not passive observers but active shapers of the Bronze Economy's labor market. Flagship government initiatives like the Ministry of Food and Agriculture's (MoFA) 'Planting for Food and Jobs' (PFJ) and the Youth Employment Agency's (YEA) modules are significant drivers of job creation, formalization, and skills training.<sup>7</sup> Concurrently, programs funded by the World Bank (e.g., Food Systems Resilience Program - FSRP) and GIZ (e.g., Resilience Against Climate Change - REACH) introduce new skills, technologies, and project-based employment roles, particularly in climate-smart agriculture and sustainable resource management.<sup>10</sup>
129. **A Persistent and Evolving Skills Gap:** A significant mismatch exists between the evolving needs of modernizing Bronze Economy sectors and the skills of the available labor pool. While basic manual labor is abundant, there is a documented lack of technical, managerial, and problem-solving skills required for roles in commercial agribusiness and the formal mining sector.<sup>12</sup> This gap is being addressed by a network of agricultural colleges and universities, but curricula require continuous modernization to incorporate emerging demands for digital

literacy and climate-resilient practices.<sup>14</sup>

130. **The Ascendancy of Community-Based Economic Units:** Farmer cooperatives and Community Resource Management Areas (CREMAs) are emerging as critical institutions for employment and resource governance. Actively promoted by government policy, cooperatives function as collective economic units that enhance member access to inputs, finance, and markets, thereby stabilizing livelihoods.<sup>16</sup> In the forestry sector, CREMAs provide a framework for community-based management and the sustainable harvesting of non-timber forest products, creating a distinct form of livelihood-based employment.<sup>18</sup>

### 1.3 Principal Strategic Recommendations

Based on the comprehensive analysis, this report puts forth a set of high-level strategic recommendations designed to foster a more productive, resilient, and equitable Bronze Economy workforce:

131. **Reform and Modernize Training Curricula:** A national effort is required to update the curricula of Technical and Vocational Education and Training (TVET) institutions, agricultural colleges, and university programs. This reform should embed modules on climate-smart agriculture, digital farm management tools, financial literacy, and entrepreneurship, drawing directly from the successful models demonstrated by development partner projects.
132. **Accelerate Informal Sector Integration and Professionalization:** Policy must shift from merely regulating the informal sector to actively professionalizing it. This involves targeted support for Artisanal and Small-Scale Mining (ASM) through access to geological data and safer technology, and empowering small-scale agro-processing cooperatives with credit and market linkages to transform them into more profitable and higher-paying enterprises.
133. **Establish a Coordinated National Policy Framework:** A high-level, inter-ministerial task force should be established to align the objectives and implementation of disparate government and donor-funded programs. This would create a coherent national strategy for the Bronze Economy, ensuring that initiatives in agriculture, mining, and youth employment are mutually reinforcing and create clear pathways from training to sustainable employment.

134. **Develop a Continuous Labor Market Monitoring System:** To move beyond static, periodic surveys, Ghana should invest in a dynamic Bronze Economy Labor Market Information System (LMIS). This system would integrate data from formal job portals, informal classifieds, government program databases, and regular inputs from industry associations and cooperatives, providing policymakers with a near real-time understanding of labor demand, wage trends, and skills gaps.

## Part II: The Agricultural Production Landscape

The foundation of Ghana's Bronze Economy is its agricultural production sector, a diverse domain that spans staple and cash crop cultivation, livestock rearing, and the specialized fields of seed and nursery management. This landscape is characterized by a spectrum of employment arrangements, from the vast, informally organized workforce on smallholder farms to the structured, salaried positions in commercial agribusiness. A defining feature of this sector is the powerful influence of government programs and development partner interventions, which are actively shaping labor demand, skills development, and career pathways.

### 2.1 Crop Production and Horticulture

Employment in crop production and horticulture represents the largest segment of the Bronze Economy workforce. The roles within this sub-sector are varied, reflecting the transition from subsistence farming towards more commercialized and specialized agricultural models.

#### **Roles & Responsibilities:**

The most prevalent and fundamental role is that of the **Farm Hand** or **General Laborer**. This position forms the backbone of agricultural activity across the country. Core responsibilities are almost entirely manual and include land preparation (clearing and tilling), planting, weeding, fertilizer application, and harvesting.<sup>3</sup> Employment for Farm Hands is predominantly informal and seasonal, dictated by crop

cycles. Recruitment occurs almost exclusively through local community networks and word-of-mouth, with classifieds platforms like Tonaton and Jiji serving as a digital proxy for these informal channels. Postings for a "Farm Hand for Vegetable Farm" in the Central Region, for instance, list responsibilities such as weeding, composting, and harvesting, with compensation offered in the range of GHS 600–800 per month.<sup>3</sup>

A more specialized, yet still entry-level, role is the **Poultry Farm Worker**. With the growth of the poultry sub-sector, these positions are becoming more common. Responsibilities are specific to poultry operations and include daily feeding and watering, egg collection and storage, cleaning and maintenance of coops, and monitoring the health of the birds.<sup>21</sup> While many such roles remain informal, advertisements from commercial entities like Park Agrotech Ghana Limited and Sky Agro and Aquaculture Solutions Limited indicate a trend towards formalization, with full-time positions and specified monthly salaries, such as GHS 1,200–1,500.<sup>21</sup>

Indicating a shift towards higher-value, specialized agriculture, the role of **Vegetable Planting Technician** is emerging. This position requires more than general labor; it demands hands-on experience in the cultivation of specific crops like okra and lantern peppers, including knowledge of planting techniques, field management, irrigation systems, and harvesting protocols.<sup>21</sup> Such roles are typically found within commercial vegetable farms aiming for consistent quality and yield.

At the supervisory and managerial level, the positions of **Farm Supervisor** and **Farm Manager** represent formal employment opportunities with clear career progression. A Farm Supervisor's duties involve inspecting crops and fields to determine work requirements, and directing and assisting with cultivation, weeding, or harvesting.<sup>23</sup> A Farm Manager has broader responsibilities, including analyzing existing operations, preparing plans and schedules for planting and harvesting, managing staff, and overseeing financial documents.<sup>23</sup> These positions, advertised by companies like Pro AgriTec, invariably require higher qualifications, such as a diploma or degree in agriculture, and signify a professionalized approach to farm operations.

### **The "Projectization" of Agricultural Labor:**

A critical dynamic shaping the agricultural labor market is its "projectization." This phenomenon is driven by large-scale government and development partner initiatives that do not merely support existing farmers but actively create and structure new employment opportunities. The government's flagship "Planting for Food and Jobs" (PFJ) program, for example, is estimated to have created approximately 745,000 jobs

since its inception, with the vast majority (715,000) being on-farm roles.<sup>9</sup> The program achieves this by providing subsidized inputs (seeds and fertilizers) and extension services, which motivates farmers to expand cultivation and hire more labor.<sup>7</sup>

Similarly, interventions by international partners create a parallel, project-based labor market. The World Bank's Food Systems Resilience Program (FSRP) supports digital advisory services and sustainable agricultural intensification, creating demand for individuals trained in these specific areas.<sup>11</sup> The GIZ-implemented Resilience Against Climate Change (REACH) project directly trains farmers and extension agents in Conservation Agriculture and agroforestry, introducing specialized skills and roles into the rural economy of Northern Ghana.<sup>10</sup>

This project-based employment structure has profound consequences. On one hand, it serves as a powerful engine for skills transfer and job creation, introducing modern practices and providing entry points into the workforce. On the other hand, it creates a degree of dependency and precarity; the sustainability of these jobs is often tied to the funding cycles and lifespan of the projects. This presents a key strategic challenge for policymakers: how to transition the skills and employment generated by these temporary interventions into permanent features of the national agricultural economy. The opportunity lies in institutionalizing the successful training models and curricula from these projects within permanent national bodies like MoFA's extension service and the curricula of agricultural colleges.

## **2.2 Livestock and Poultry Farming**

The livestock and poultry sub-sector is a vital component of the agricultural economy, providing significant employment and contributing to national food security. The employer landscape is diverse, ranging from individual small-scale farmers to large, integrated commercial operations. A crucial element within this landscape is the role of industry associations, which act as key support structures and economic stabilizers.

### **Employer Landscape and Support Structures:**

Employers in this sub-sector include small-scale, community-based farmers raising

goats, sheep, and local poultry, as well as larger commercial enterprises specializing in poultry, piggery, and cattle rearing.<sup>21</sup> A pivotal role is played by industry bodies like the Greater Accra Poultry Farmers Association (GAPFA).<sup>27</sup> GAPFA's function extends far beyond simple advocacy. It operates as a critical economic support system for its small and medium-scale members by providing competitively priced inputs, including animal feed produced at its own feed mill and coordinated access to vaccines.<sup>27</sup> Furthermore, it offers technical and managerial skill enhancement through poultry seminars and extension services.<sup>27</sup>

This model of an industry association acting as an economic stabilizer is a profound feature of the Bronze Economy. By operating its own feed mill, GAPFA directly mitigates supply chain risks and insulates its members from the full volatility of input costs. This stability is a form of indirect employment protection; a farm that can manage its costs is more likely to remain viable and thus retain or hire workers. This demonstrates that such associations are not merely stakeholders to be consulted but are vital pieces of economic infrastructure. Policy interventions aimed at strengthening the agricultural sector could achieve significant leverage by channeling support through these associations, enhancing their capacity to deliver training, improve market linkages, and provide even more robust risk mitigation for their members.

### **Career Pathways:**

Career progression in the livestock sector often begins with roles like **Farm Hand** or **Poultry Farm Worker**, involving daily care and maintenance tasks.<sup>21</sup> With experience and training, an individual can advance to more specialized roles such as

**Poultry Attendant.** For those with formal education, entry points exist through the National Service Scheme, with placements like **National Service Personnel for Business Development** at agribusinesses focused on livestock, such as Farming In Africa.<sup>21</sup> The apex of this pathway is the role of

**Farm Manager**, which involves full operational and strategic oversight of a commercial livestock or poultry farm, as seen in advertisements from companies like Sky Agro and Aquaculture Solutions Limited.<sup>21</sup>

## **2.3 Seed Production and Nursery Management**



This specialized sub-sector is fundamental to the productivity and expansion of Ghana's entire agricultural and forestry landscape. It requires a distinct set of technical skills related to the multiplication of improved seeds and the management of seedlings for crops and trees.

**Specialized Roles and Key Employers:**

Employment in this niche is driven by both public and private sector demand. On the public side, key employers include the **Ghana Cocoa Board (COCOBOD)**, which runs extensive cocoa seedling nursery programs as part of its efforts to support farmers and rehabilitate aged farms, and the **Forestry Commission (FC)**, which manages nurseries for its reforestation and afforestation projects.<sup>29</sup> While specific job advertisements for nursery workers from these agencies are not always prevalent on public portals, the scale of their operations implies a significant and continuous demand for roles such as

**Nursery Attendant, Nursery Supervisor, and Field Officer** for seedling distribution.

In the private sector, the seed industry is organized around the **National Seed Trade Association of Ghana (NASTAG)**.<sup>31</sup> NASTAG serves as the apex body for seed producers, processors, and traders. It plays a crucial role in fostering employment and entrepreneurship by providing essential support services to its members, including capacity building in technical and business skills, advocacy for a favorable policy environment, and creating networking opportunities through events like its "SeedLink" forum.<sup>31</sup> Employment within this private ecosystem includes roles like

**Seed Production Technician, Processing Plant Operator, and Seed Marketing Officer.**

The convergence of these public and private efforts creates a dynamic environment for skilled individuals. The government's "Feed Ghana Programme," for example, explicitly includes prioritized access to subsidized seeds as a key component, directly boosting demand from private seed companies that are members of NASTAG.<sup>16</sup>

**Table 2.1: Employment Profile in Primary Agricultural Production**

The following table provides a structured overview of the primary employment roles identified across the agricultural production landscape, detailing their responsibilities,

employment terms, compensation, and required competencies. This dataset is designed to provide policymakers and workforce development planners with a comparative tool to understand the labor hierarchy, identify training needs, and formulate strategies for career progression within the sector.

| Role Title                      | Standardized Sector Classification    | Core Responsibilities  | Employment Type              | Compensation Range (GHS/month) | Required Technical Skills   | Essential Soft Skills  | Typical Qualifications          | Key Employer Types   | Evidence Sources |
|---------------------------------|---------------------------------------|--|------------------------------|--------------------------------|---|--|---------------------------------|--|------------------|
| Farm Hand / General Laborer     | Crop Production / General Agriculture | Land preparation, planting, weeding, composting, harvesting, general farm maintenance. | Informal, Seasonal, Contract | 600 - 1,000                    | Basic farming techniques, use of manual tools (e.g., hoe, cutlasses). | Physical stamina, reliability, ability to follow instructions. | Minimal to no formal education. | Small holder farms, Commercial farms (seasonal), Community cooperatives. | 3                |
| Poultry Farm Worker / Attendant | Livestock & Poultry Farming           | Feeding/watering poultry, egg collection, cleaning                                     | Formal (Full-Time), Informal | 800 - 1,500                    | Basic animal husbandry, biosecurity protocols,                        | Attention to detail, reliability, physical fitness.            | JHS/SHS, On-the-job training.   | Commercial poultry farms, Small-scale poultry                            | 21               |

|   |  |  |  |  |   |  |   |  |    |
|---|--|--|--|--|---|--|---|--|----|
|   |  | coops<br>,<br>monit<br>oring<br>bird<br>health<br>,<br>assisti<br>ng<br>with<br>vacci<br>nation<br>s.  |  |  | feed<br>formu<br>lation<br>assist<br>ance.  |  |   | y<br>opera<br>tions.   |    |
| Veget<br>able<br>Plant<br>ing<br>Techn<br>ician | Crop<br>Produ<br>ction<br>(Horti<br>cultur<br>e) | Speci<br>alized<br>plant<br>ing,<br>field<br>mana<br>geme<br>nt,<br>irrigat<br>ion<br>syste<br>m<br>opera<br>tion,<br>harve<br>sting<br>of<br>specif<br>ic<br>veget<br>able<br>crops<br>(e.g.,<br>okra,<br>pepp<br>ers). | Form<br>al<br>(Full-<br>Time),<br>Contr<br>act | Confi<br>dential (Est.<br>1,500<br>-<br>2,500<br>) | Crop-<br>specif<br>ic<br>cultiv<br>ation<br>techni<br>ques,<br>irrigat<br>ion<br>mana<br>geme<br>nt,<br>pest/<br>disea<br>se<br>identi<br>ficatio<br>n. | Precis<br>ion,<br>passi<br>on for<br>cultiv<br>ation,<br>team<br>work. | Certifi<br>cate/<br>Diplo<br>ma in<br>Agric<br>ulture<br>,<br>Prove<br>n<br>experi<br>ence. | Com<br>merci<br>al<br>veget<br>able<br>agrib<br>usine<br>sses. | 21 |
| Farm<br>Super<br>visor                          | Gener<br>al<br>Agric                             | Inspe<br>cting<br>crops  | Form<br>al<br>(Full-                           | Confi<br>dential (Est.                             | Advan<br>ced<br>agron   | Leade<br>rship,<br>comm  | Diplo<br>ma or<br>Degre   | Com<br>merci<br>al   | 23 |

|                  |                              |  |                    |                                    |  |   |  |  |    |
|------------------|------------------------------|--|--------------------|------------------------------------|--|---|--|--|----|
|                  | ulture / Crop Production     | /fields , directing labor, assisting in farm operations, ensuring tasks are completed.                               | Time)              | 2,000 - 3,500 )                    | omy, crop maturity assessment , basic personnel management.                | unicat ion, problem-solving.                                      | e in Agriculture , Several years of experience.    | farms, Agribusiness firms.                         |    |
| Field Agronomist | Support Services & Extension | Providing technical advice to farmers, monitoring crop health , implementing new farming protocols, data collection. | Formal (Full-Time) | Confidential (Est. 2,500 - 4,500 ) | Advanced agronomy, soil science, pest management, use of diagnostic tools. | Strong communication, analytical skills, ability to train others. | Bachelor's/ Master's in Agronomy or related field. | Agribusiness firms (e.g., Complete Farmer), NGOs . | 21 |
| Farm Manager     | General                      | Strategic  | Formal             | Confidential                       | Agribusiness   | Leadership,   | Bachelor's/  | Large-scale  | 21 |

|  |  |  |  |  |   |  |   |  |    |
|--|--|--|--|--|---|--|---|--|----|
| ger  | Agric<br>ulture<br>/<br>Livest<br>ock                            | planni<br>ng,<br>opera<br>tional<br>analy<br>sis,<br>financ<br>ial<br>mana<br>geme<br>nt,<br>staff<br>super<br>vision,<br>sched<br>uling<br>planti<br>ng/ha<br>rvesti<br>ng.             | (Full-<br>Time)                              | l (Est.<br>3,500<br>+)                           | ss<br>mana<br>geme<br>nt,<br>financ<br>ial<br>analy<br>sis,<br>advan<br>ced<br>opera<br>tional<br>planni<br>ng.                 | strate<br>gic<br>thinki<br>ng,<br>busin<br>ess<br>acum<br>en.    | Maste<br>r's in<br>Agric<br>ulture<br>or<br>Agrib<br>usine<br>ss,<br>Signifi<br>cant<br>experi<br>ence. | comm<br>ercial<br>farms,<br>Agrib<br>usine<br>ss<br>corpo<br>ration<br>s.                |    |
| Nurse<br>ry<br>Atten<br>dant /<br>Work<br>er | Seed<br>Produ<br>ction<br>&<br>Nurse<br>ry<br>Mana<br>geme<br>nt | Seed<br>sowin<br>g,<br>seedli<br>ng<br>care<br>(wate<br>ring,<br>weedi<br>ng),<br>pest<br>contr<br>ol in<br>nurse<br>ries,<br>prepa<br>ring<br>seedli<br>ngs<br>for<br>distrib<br>ution. | Form<br>al,<br>Seaso<br>nal,<br>Contr<br>act | Confi<br>dential<br>(Est.<br>800 -<br>1,500<br>) | Plant<br>propa<br>gation<br>techni<br>ques,<br>nurse<br>ry<br>hygie<br>ne,<br>basic<br>pest/<br>disea<br>se<br>recog<br>nition. | Patien<br>ce,<br>attent<br>ion to<br>detail,<br>reliabi<br>lity. | On-<br>the-<br>job<br>trainin<br>g,<br>Certifi<br>cate<br>in<br>Hortic<br>ulture<br>.                   | COC<br>OBOD<br>,<br>Fores<br>try<br>Com<br>missio<br>n,<br>Privat<br>e<br>nurse<br>ries. | 29 |

## Part III: Natural Resource Extraction and Management

Ghana's natural resource sector is a cornerstone of the national economy and a significant source of employment within the Bronze Economy. This domain is marked by a profound duality: on one side, highly formalized, capital-intensive industries with structured career paths, and on the other, vast, labor-intensive artisanal and community-based activities that provide livelihoods for millions. This section analyzes the employment landscapes in forestry, mining, and fisheries, highlighting the distinct roles, challenges, and opportunities within each.

### 3.1 Forestry and Agroforestry

The employment structure in Ghana's forestry sector exhibits a clear dichotomy between formal state-managed roles and informal community-based livelihoods. The **Forestry Commission (FC)** is the primary formal employer, offering structured, salaried positions that require specific technical qualifications and are advertised through official channels. These roles include **Forest Ranger Manager**, responsible for overseeing the management and protection of forest reserves; **Timber Inspector**, tasked with monitoring and regulating timber harvesting activities to ensure compliance with laws; and **Assistant Wildlife Officer**, focused on the conservation and management of wildlife within protected areas.<sup>30</sup> These positions form part of a clear civil service career structure.

In parallel, a significant portion of forestry-related economic activity occurs within community-based frameworks. The most prominent of these is the **Community Resource Management Area (CREMA)** model, a decentralized approach to conservation promoted by the government.<sup>18</sup> CREMAs create a unique form of employment rooted in sustainable livelihoods. Inhabitants of these areas engage in the organized harvesting of non-timber forest products (NTFPs) such as shea nuts, dawadawa, honey, and medicinal plants.<sup>19</sup> Management is undertaken by the communities themselves through established

**Community Resource Management Committees (CRMCS).**<sup>19</sup> While these are not "jobs" in the conventional, salaried sense, they represent critical income-generating activities that constitute the primary form of employment for many rural residents. The success of CREMAs, such as the award-winning Zukpiri CREMA, demonstrates that community-led conservation can simultaneously protect biodiversity and sustain local economies.<sup>19</sup>

Furthermore, the growing global focus on climate change and land degradation has spurred a number of reforestation and landscape restoration projects, often funded by development partners. These projects create a third tier of employment, typically for skilled professionals. A prime example is the **Ghana Cocoa Region Landscape Restoration Manager** position advertised by the World Resources Institute (WRI).<sup>34</sup> This is a high-level project management role requiring a university degree and extensive experience in natural resource management. The manager leads a multidisciplinary team of experts in restoration finance, policy, monitoring, and community engagement, coordinating efforts to restore degraded lands within the cocoa belt. This points to an emerging demand for professionals who can bridge the gap between technical forestry, community development, and project finance.

### 3.2 Mining and Quarrying

The mining and quarrying sub-sector presents the most pronounced division between formal and informal employment in the entire Bronze Economy. It is a world of contrasts, pitting multinational corporations against individual artisanal miners.

#### **The Formal-Artisanal Divide:**

The formal, large-scale mining sector is dominated by multinational and large national companies such as Gold Fields, AngloGold Ashanti, Newmont, and Nguvu Mining.<sup>35</sup> These firms advertise highly technical, well-compensated, and formal roles through professional job portals. The positions demand specialized education and skills and offer structured career paths. Examples include:

135. **Geotechnical Engineer:** Responsible for assessing slope stability and ensuring the structural integrity of mine pits.<sup>36</sup>
136. **Mine Planning Engineer:** Develops short- and medium-term mine plans,

- designs, and schedules to ensure safe, efficient, and cost-effective production.<sup>35</sup>
137. **Shiftboss:** A frontline supervisory role responsible for overseeing a team of miners during a specific shift, ensuring safety and production targets are met.<sup>36</sup>
138. **HSE (Health, Safety, and Environment) Superintendent/Supervisor:** Implements and enforces safety and environmental protocols in compliance with national and international standards.<sup>35</sup>

These roles typically require a Bachelor's degree or HND in a relevant engineering or scientific discipline.

In stark contrast is the **Artisanal and Small-Scale Mining (ASM)** sector. This sector is a colossal economic force and a massive employer. In 2024, the ASM sector was responsible for an estimated \$5 billion in foreign exchange earnings from gold exports and directly employed over one million Ghanaians, with millions more benefiting indirectly.<sup>37</sup> This is not a fringe activity but a core component of the rural economy, often acting as a de facto social safety net in areas with limited alternative employment. The work is almost entirely informal, physically demanding, and often hazardous. Roles are not formally defined but include

**Diggers, Panners, Washers**, and members of small, informally organized mining groups. Recruitment is based on community and family ties.

The sheer scale of the ASM sector's employment and economic contribution means that it cannot be viewed merely as a problem to be eradicated. It is a vital economic engine for many communities. Policy approaches that focus solely on enforcement have historically been insufficient. The key challenge, and opportunity, lies in professionalizing the sector. The major constraints faced by artisanal miners are a lack of access to geological data (leading to inefficient "trial-and-error" mining), limited access to finance for better equipment, and the environmental degradation caused by illegal practices (*galamsey*).<sup>37</sup>

### **Formalization Efforts and Support Structures:**

Recognizing the importance of the ASM sector, both government and development partners are engaged in efforts to formalize and support it. The **Minerals Commission** facilitates the registration of small-scale miners, and the **Ghana National Association of Small Scale Miners (GNASSM)** acts as an umbrella organization for these registered miners, collaborating with the government on capacity building and improving mining practices.<sup>38</sup>



Furthermore, international support is being channeled into this area. The World Bank's **Ghana Landscape Restoration and Small-Scale Mining Project** is a key intervention. This project directly supports formalization by training District Mining Committees and identifying pilot sites for the rehabilitation of mined-out areas.<sup>39</sup> These reclamation activities create new, green jobs in environmental remediation for the very communities affected by mining. Such interventions signal a strategic shift: instead of just regulating ASM, the focus is moving towards mitigating its negative impacts while harnessing its economic potential. Providing ASM cooperatives with geological data, access to finance for mercury-free processing technology, and training in safety and environmental management could transform millions of precarious jobs into more stable, productive, and sustainable livelihoods.

### 3.3 Fisheries and Aquaculture

The fisheries sub-sector is another critical source of livelihood and nutrition, dominated by small-scale, artisanal operations. The sector is broadly divided into marine fisheries along Ghana's coast and inland fisheries, primarily centered on the vast Lake Volta.

#### **Dominance of Small-Scale Fisheries:**

The vast majority of employment in Ghanaian fisheries is within the small-scale sector. It is estimated that artisanal fishers account for over 90% of all marine fishers in the country.<sup>40</sup> The Lake Volta fishery alone provides livelihoods for an estimated 300,000 people in surrounding riparian communities.<sup>40</sup> Employment is concentrated in two main areas:

**Capture Fishing**, which is predominantly undertaken by men, and **Post-Harvest Processing** (smoking, drying, salting), which is a domain overwhelmingly dominated by women.<sup>40</sup> These roles are deeply embedded in the cultural and economic fabric of coastal and lakeside communities.

#### **Emerging Aquaculture:**

While significantly smaller than capture fisheries, aquaculture represents a growing area for more structured and formal employment. As demand for fish continues to

rise and capture fisheries face sustainability challenges, fish farming is gaining prominence. This trend is reflected in the advertisement of formal, technical positions such as **Senior Fishery and Aquaculture Officer** by organizations like the Food and Agriculture Organization (FAO) of the United Nations.<sup>23</sup> These roles require technical expertise in fish farm management, water quality control, and aquaculture economics, indicating a move towards a more scientific and business-oriented approach to fish production.

### Key Challenges and Interventions:

The small-scale fisheries sector faces significant threats, primarily from the overexploitation of fish stocks and high post-harvest losses, which undermine the livelihoods of those who depend on it.<sup>40</sup> In response, international organizations like the FAO are playing a crucial role in providing support and capacity building. FAO projects in Ghana are specifically designed to address these challenges by:

- 139. Providing training to small-scale fish processors (mostly women) in **entrepreneurship, financial literacy, and record-keeping** to help them run their activities as profitable businesses.<sup>42</sup>
- 140. Introducing **improved post-harvest techniques and technologies**, such as better smoking ovens and hygienic handling practices, to reduce food loss and waste and improve product quality.<sup>40</sup>
- 141. Supporting the formation and strengthening of **women's fisheries organizations** to give them a stronger voice in decision-making processes that affect their livelihoods.<sup>40</sup>

These interventions are direct attempts to improve the economic viability and resilience of jobs within the small-scale fisheries value chain, transforming subsistence activities into sustainable micro-enterprises.

**Table 3.1: Employment Profile in Natural Resource Extraction**

This table contrasts the employment realities within the natural resource extraction sector, juxtaposing the highly formalized, high-skill roles in corporate mining with the vast, informal, and often precarious livelihoods in artisanal mining and community forestry. This highlights the need for differentiated policy approaches tailored to the unique characteristics of each sub-sector.

|      |       |      |       |      |       |       |       |     |       |
|------|-------|------|-------|------|-------|-------|-------|-----|-------|
| Role | Stand | Core | Emplo | Comp | Requi | Essen | Typic | Key | Evide |
|------|-------|------|-------|------|-------|-------|-------|-----|-------|

| Title                  | Standard Sector Classification   | Responsibilities   | Employment Type                             | Seasonality/Income Pattern                        | Required Technical Skills   | Required Soft Skills                                      | Formal Qualifications                      | Employer Types                              | Information Sources |
|------------------------|----------------------------------|--|---|---|---|---|--|---|---------------------|
| Artisanal Miner        | Mining & Quarrying (ASM)         | Manual excavation, panning, sluicing, transporting ore.                                    | Informal, Self-employed, Cooperative Member | Highly volatile daily income, dependent on finds. | Basic mineral identification, manual digging techniques.            | Physical endurance, resilience, risk tolerance, teamwork. | No formal education required.              | Self, Informal groups, Mining cooperatives. | 37                  |
| Mine Planning Engineer | Mining & Quarrying (Large-Scale) | Developing short/medium-term mine plans, pit design, production scheduling using software. | Formal (Full-Time)                          | Salaried (high)                                   | Mine design software (e.g., Surpac), 3D modeling, scheduling tools. | Analytical thinking, problem-solving, collaboration.      | Bachelor's/Master's in Mining Engineering. | Multinational/Large mining companies.       | 35                  |
| Forest Ranger          | Forestry & Agroforestry          | Overseeing forest reserves   | Formal (Full-Time)                          | Salaried (government)                             | Forest management   | Leadership, integrity,                                    | Diploma/Degree in                          | Forestry Commission                         | 30                  |

|  |   |  |  |  |   |   |   |   |    |
|--|---|--|--|--|---|---|---|---|----|
| Manager  | y   | e<br>mana<br>geme<br>nt,<br>law<br>enfor<br>ceme<br>nt,<br>super<br>vising<br>range<br>rs,<br>comm<br>unity<br>engag<br>ement<br>.   |  | nt<br>scale)   | nt<br>princi<br>ples,<br>boun<br>dary<br>dema<br>rcatio<br>n,<br>speci<br>es<br>identi<br>ficatio<br>n. | comm<br>unicat<br>ion,<br>confli<br>ct<br>resolu<br>tion.                                   | Fores<br>try or<br>Natur<br>al<br>Resou<br>rce<br>Mana<br>geme<br>nt. | n of<br>Ghan<br>a.  |    |
| CREM<br>A<br>Memb<br>er /<br>NTFP<br>Harve<br>ster | Fores<br>try &<br>Agrof<br>orestr<br>y<br>(Com<br>munit<br>y-<br>Based<br>) | Sustai<br>nable<br>harve<br>sting<br>of<br>non-<br>timbe<br>r<br>forest<br>produ<br>cts<br>(shea,<br>honey<br>)<br>partici<br>patin<br>g in<br>comm<br>unity<br>patrol<br>s and<br>meeti<br>ngs. | Com<br>munit<br>y-<br>based<br>, Self-<br>emplo<br>yed | Seaso<br>nal<br>incom<br>e<br>from<br>sale<br>of<br>harve<br>sted<br>produ<br>cts. | Knowl<br>edge<br>of<br>local<br>flora,<br>sustai<br>nable<br>harve<br>sting<br>techni<br>ques.          | Com<br>munit<br>y<br>engag<br>ement<br>, reliabi<br>lity,<br>conse<br>rvatio<br>n<br>ethic. | Tradit<br>ional<br>ecolo<br>gical<br>knowl<br>edge.                   | Com<br>munit<br>y<br>Resou<br>rce<br>Mana<br>geme<br>nt<br>Area<br>(CRE<br>MA)<br>comm<br>ittees. | 18 |
| Small<br>-   | Fisher<br>ies &   | Smoki<br>ng,   | Infor<br>mal,  | Daily/<br>weekl  | Fish<br>prese   | Entre<br>prene  | On-<br>the-   | Self,<br>Famil  | 40 |

|                                      |                                  |  |                    |   |  |   |  |   |    |
|--------------------------------------|----------------------------------|--|--------------------|---|--|---|--|---|----|
| Scale Fish Processor                 | Aqua culture                     | drying, salting, and marketing fish; managing small-scale processing operations.                             | Self-employed      | Income from sales, subject to catch volume and market prices. | Various techniques (smoking, drying), basic bookkeeping.       | Personal spirit, negotiation skills, reliability. | job training, Traditional knowledge.                         | Various businesses, Women's cooperatives.                     |    |
| Senior Fishery & Aquaculture Officer | Fisheries & Aquaculture (Formal) | Leading regional programs, providing technical guidance on sustainable fisheries and aquaculture management. | Formal (Full-Time) | Salaries (international scale)                                | Fisheries science, aquaculture management, policy development. | Leadership, program management, communication.    | Master's degree in Fisheries, Aquaculture, or related field. | International Organizations (e.g., FAO), Government agencies. | 23 |
| Blastman / Explosives                | Minning & Quarrying              | Safely handling, transport   | Formal (Full-Time) | Salaries  | Knowledge of explosives  | Safety-conscious                                  | HND/Bachelor, Specialist                                     | Minning companies,  | 44 |

|             |                       |   |  |  |   |   |                                  |                                       |  |
|-------------|-----------------------|---|--|--|---|---|----------------------------------|---------------------------------------|--|
| Handl<br>er | (Larg<br>e-<br>Scale) | portin<br>g, and<br>loadin<br>g<br>explo<br>sive<br>mater<br>ials<br>for<br>blasti<br>ng<br>opera<br>tions<br>in<br>mines<br>/quarr<br>ies. |  |  | sives<br>regula<br>tions,<br>blasti<br>ng<br>proce<br>dures,<br>trans<br>port<br>proto<br>cols. | ess,<br>attent<br>ion to<br>detail,<br>physi<br>cal<br>fitnes<br>s. | alized<br>certifi<br>cation<br>. | Quarr<br>ying<br>contr<br>actor<br>s. |  |
|-------------|-----------------------|---|--|--|---|---|----------------------------------|---------------------------------------|--|

**Part IV: Processing, Value Addition, and Support Systems**

Beyond primary production and extraction, the Bronze Economy encompasses a crucial layer of basic processing, small-scale manufacturing, and the essential support services that enable the entire system to function. This segment of the economy is a significant source of employment, particularly for women, and represents a key area for value addition and economic diversification. It is also where the demand for new technical and logistical skills is becoming increasingly apparent.

**4.1 Basic Agro-Processing and Food Processing**

This sub-sector is characterized by the transformation of raw agricultural commodities into more stable, marketable, and higher-value products. It is dominated by small-scale enterprises, many of which are led by women and operate within the informal economy.

### Value Chain Roles and Employment Impact:

The processing of staple crops is a major source of employment. The **cassava value chain**, for instance, is a complex network involving multiple actors and products.<sup>46</sup>

Small-scale processors transform fresh cassava roots into products like

*gari* (a roasted granular flour), *agbelima* (a fermented cassava dough), and cassava flour.<sup>48</sup> Research indicates that while these processing activities are profitable, the value chain is often constrained by a weak governance system characterized by spot market transactions and limited access to credit, which hinders upgrading and expansion.<sup>46</sup>

Similarly, the **shea value chain** in northern Ghana is a critical source of income and employment for women. Social enterprises like Northern Ghana Shea (NGS) work with over 1,000 women, with approximately half directly engaged in the processing of shea nuts into shea butter.<sup>49</sup> This demonstrates the immense employment potential that can be unlocked by organizing and supporting these micro-processing groups with capacity building and market linkages.

Alongside these traditional, community-based activities, a more formalized processing sector is also present. Classifieds platforms like Tonaton feature advertisements for roles such as **Factory Hands** and **Soap Factory Workers** in and around industrial areas like Tema.<sup>6</sup> These positions offer more structured, full-time employment, although typically at the lower end of the wage scale, with advertised monthly salaries in the range of GHS 1,000–2,000. These roles involve manual labor within a factory setting, such as packing, loading, and operating simple machinery.

## 4.2 Small-Scale Manufacturing and Value Addition

This sub-sector involves the production of utility goods from primary materials, distinct from creative crafts by its focus on commodity and functional items. Employment in this area is being actively stimulated by both government initiatives and the derived demand from modernizing agriculture.

### Utility Goods Production and Derived Demand:

The government, through the **Youth Employment Agency (YEA)**, has launched

specific programs to create jobs in this area, such as the **Brick Production and Construction Programme**.<sup>52</sup> This initiative aims to train and employ youth in the manufacturing of bricks and other basic construction materials, directly addressing both youth unemployment and the need for local building supplies.

A significant and growing source of employment is in the maintenance and repair of agricultural equipment. The increasing mechanization of farming—evidenced by the procurement of tractors, rippers, boom sprayers, and planters under projects like GIZ's REACH program and the general trend noted by industry experts—creates a critical need for skilled technicians.<sup>10</sup> This has given rise to the role of the

**Agricultural Equipment Technician.** Recognizing this demand, private companies like Asafoods Limited have established formal apprenticeship programs to train individuals in this trade, covering modern farming techniques, farm safety, and the maintenance of agricultural machinery.<sup>54</sup> This represents a clear pathway to a skilled, well-defined job that is essential for the modernization of the entire agricultural sector.

#### 4.3 Agricultural Support and Extension Services

Agricultural extension services—the process of delivering advice, training, and new technologies to farmers—are a vital support function in the Bronze Economy. The delivery of these services in Ghana is undergoing a significant transformation, moving from a purely public model to a fragmented and specialized ecosystem of public, private, and non-profit providers.

##### **Public, Private, and NGO Roles:**

The traditional and foundational role is the government **Agricultural Extension Agent (AEA)**, employed by the Ministry of Food and Agriculture (MoFA).<sup>7</sup> These agents are deployed at the district level to provide general advisory services to farmers. The government has made concerted efforts to improve the historically low extension agent-to-farmer ratio by recruiting thousands of new agents, often through the YEA and the National Service Scheme.<sup>24</sup>

However, a parallel system of extension has emerged, driven by the private sector



and NGOs. Large agribusinesses that operate outgrower schemes, such as Complete Farmer and RMG Ghana, employ their own **Field Agronomists**.<sup>21</sup> These agronomists provide specialized advice to contracted farmers, focusing on the specific crops and input packages relevant to the company's business model. Their role is to ensure that farmers achieve the yields and quality standards required by the company.

Similarly, development partner projects have their own cadres of field staff. GIZ's REACH project, for instance, trains and deploys extension agents to promote the adoption of Conservation Agriculture practices in its target regions.<sup>10</sup> The FAO and other NGOs also engage field liaison officers to support their specific project goals, whether in fisheries, climate resilience, or value chain development.<sup>23</sup>

### **The Fragmentation and Specialization of Extension Services:**

This multiplication of extension providers has created a fragmented landscape. It is now common for a single smallholder farmer to receive advice from multiple sources: general crop advice from the MoFA AEA, specific instructions on fertilizer use from a private company's agronomist, and training on climate adaptation techniques from an NGO's field agent. This fragmentation carries the risk of delivering uncoordinated or even contradictory advice to farmers.

However, this trend also signals a clear market demand for specialized, high-quality advisory services that the state-run system, with its limited resources and generalist approach, may struggle to meet. This presents a significant policy opportunity. Rather than viewing this fragmentation as solely a problem, it can be seen as the emergence of a professional service industry. The policy response could focus on creating a framework to coordinate and professionalize this ecosystem. This could involve establishing a national certification system for private agronomists, creating formal public-private partnerships for the delivery of extension services, and, critically, integrating the proven, specialized training modules from donor projects (e.g., GIZ's Conservation Agriculture manual) into the core curriculum used to train MoFA's own extension agents. Such a strategy would leverage the strengths of all actors to build a more robust, responsive, and effective national extension system.

## **4.4 Agricultural Logistics and Supply Chain Support**

An efficient supply chain is the circulatory system of the Bronze Economy, ensuring that primary commodities move from the farm, forest, or mine to processors and markets. This requires a range of logistical and support roles.

### **Core and Specialized Logistics Roles:**

Core roles in agricultural logistics include the **Warehouse Officer**, who is responsible for managing the receipt, storage, and dispatch of commodities. Agribusinesses like Complete Farmer employ Warehouse Officers at their operational hubs, such as the one in Atebubu, to oversee inventory and ensure proper post-harvest handling.<sup>21</sup> This role is crucial for minimizing losses and maintaining the quality of produce. The supply chain also relies heavily on

**Transport Operators** to move goods, a role that is often informal and undertaken by individual truck owners or small transport businesses.

The mining sector, due to the nature of its materials, requires highly specialized and regulated logistics roles. These include the **Administrator / Magazine Master**, who has the critical responsibility of managing the inventory of explosives in strict compliance with safety protocols and regulatory requirements.<sup>44</sup> This role demands high attention to detail and deep knowledge of explosives regulations. Another specialized position is the

**Explosives Delivery Truck Operator**, who must transport hazardous materials in strict adherence to all safety, security, and legal protocols.<sup>44</sup> These positions highlight how specific sub-sectors within the Bronze Economy generate demand for unique, high-stakes skill sets.

## **Part V: Cross-Cutting Employment Themes and Emerging Roles**

Beyond the confines of specific sub-sectors, several cross-cutting themes and emerging roles are shaping the employment landscape of Ghana's Bronze Economy. These include the rise of community-based organizations as employers, the critical importance of apprenticeships and training as entry pathways, and the nascent but significant trend of digitization.

## 5.1 Community-Based and Environmental Services

A defining feature of the Bronze Economy is the significant role of community-level organizations in managing resources and creating economic opportunities. These entities represent a decentralized and collective approach to employment and livelihood generation.

### Cooperatives as Economic Hubs:

Farmer cooperatives are being actively promoted by the Ghanaian government as a cornerstone of its agricultural transformation strategy, particularly under the new "Feed Ghana Programme".<sup>16</sup> The policy views cooperatives as "proven instruments of empowerment" that enable smallholder farmers to overcome the limitations of individual scale.<sup>16</sup> By organizing into cooperatives, farmers can achieve collective bargaining power, gain better access to financial services, secure bulk discounts on inputs like seeds and fertilizers, and establish more stable market linkages with institutional buyers.<sup>16</sup> In this context, the cooperative itself functions as an economic unit that creates and sustains employment for its members. The success of the cooperative determines the income and stability of the jobs within it. This model is particularly important for cocoa farmers, where cooperatives serve as hubs for training, input distribution, and advocacy.<sup>17</sup>

### Environmental Support Roles:

A growing number of jobs are being created at the intersection of primary production and environmental stewardship, often driven by development partner funding. The World Bank's **Ghana Landscape Restoration and Small-Scale Mining Project** is a prime example of an initiative that explicitly funds environmental employment.<sup>39</sup> The project supports the formation of Community Resource Management Areas (CREMAs) and the development of community watershed management plans. Crucially, it includes components for the

**rehabilitation of mined-out areas** and the promotion of **sustainable land and water management practices**.<sup>39</sup> These activities directly create jobs for local community members as

### **Reclamation Workers, Tree Planters, and Soil and Water Conservation Workers.**

These are green jobs that not only provide income but also contribute to restoring the ecological balance in areas affected by extraction and intensive agriculture.

## **5.2 Apprenticeships, Training, and Entry-Level Pathways**

For a majority of the workforce, entry into the Bronze Economy is not through formal education but through practical, on-the-job learning. Apprenticeships and other targeted training programs are therefore the most critical pathways for skills acquisition and career entry.

### **Formal and Informal Apprenticeships:**

The government has recognized the need to formalize and structure skills training through the **National Apprenticeship Programme (NAP)**, managed by the Youth Employment Agency (YEA).<sup>56</sup> The NAP is a major national initiative designed to equip young people (ages 15-40) with industry-relevant skills. It targets high-impact Bronze Economy sectors, including agriculture, agro-processing, construction (brick-making), and automotive repair (equipment maintenance). The program uses a blended model of 30% classroom instruction and 70% hands-on workplace learning and is explicitly designed to be inclusive, with targets for the participation of women (40%) and persons with disabilities (5%).<sup>57</sup>

Alongside this formal system, informal apprenticeships remain the dominant mode of skill transfer for countless artisanal trades. A young person learns a trade like welding or basic fabrication by working alongside a master craftsman for several years.

### **Private Sector and NGO-Led Training:**

The private sector and non-governmental organizations are also key providers of specialized training. Private companies like Asafoods Limited offer targeted apprenticeships for emerging technical roles like **Agricultural Equipment Technician** and **Farm Technician**.<sup>54</sup> In the realm of entrepreneurship, the

**Kosmos Innovation Center (KIC)**, in partnership with the Mastercard Foundation, runs the Initiative for Youth in Agricultural Transformation (I.Y.A.T).<sup>58</sup> This program functions as a comprehensive entrepreneurial apprenticeship, training thousands of

young people, incubating hundreds of agri-startups, and providing them with the skills and seed funding to launch businesses within the agricultural value chain.

### **Entry-Level Research Support:**

A niche but important entry pathway exists in the field of research support. National institutions like the Council for Scientific and Industrial Research (CSIR) and its various institutes (e.g., Crops Research Institute, Soil Research Institute) and international bodies like the International Food Policy Research Institute (IFPRI) conduct extensive field research in Ghana.<sup>59</sup> This research requires personnel for roles such as

**Field Data Collector** and **Survey Enumerator**. These positions often require a secondary or diploma-level education and provide an excellent entry point for individuals interested in a career in agricultural or environmental research, offering practical experience in scientific data collection and community engagement.

## **5.3 The Rise of Digital-Adjacent Functions**

While the Bronze Economy is often perceived as low-tech, a significant digital transformation is underway, creating a demand for a new category of digital-adjacent roles. This trend is driven by the adoption of technology by ag-tech companies, development projects, and modernizing agribusinesses.

### **Evidence of Digitization:**

The evidence of this digital shift is widespread. The World Bank's FSRP explicitly supports the development of **digital advisory services** for farmers.<sup>11</sup> The FAO is actively training small-scale fisheries stakeholders in the use of digital tools for

**financial literacy and record-keeping**.<sup>42</sup> Research institutions like IFPRI are studying the impact of

**AI-driven diagnostics** and mobile apps for improving nutrition.<sup>60</sup> A new generation of Ghanaian ag-tech companies, such as Farmerline and Complete Farmer, have built their entire business models on digital platforms that connect farmers to information, inputs, and markets.<sup>23</sup>

## Emerging Roles:

This ongoing digitization is creating a demand for new skill sets and roles that did not exist a decade ago. While not yet widely advertised as distinct job titles, the functional needs are clear and point to the emergence of positions such as:

- 142. **Farm Data Entry Clerk:** A role within a cooperative or commercial farm responsible for accurately recording production data, input usage, and sales into a digital system for better management and traceability.
- 143. **Junior GIS Technician:** A support role within a CREMA, a district planning office, or a development project, assisting with basic digital mapping of farm boundaries, land use changes, or project intervention sites.
- 144. **Digital Extension Support Agent:** A role that assists traditional extension officers by helping farmers install and use mobile applications for weather forecasts, market price information, or pest identification.

## A Looming Digital Divide in the Workforce:

This wave of technological adoption presents both a major opportunity and a significant risk. The emergence of a high-tech, data-driven agricultural sector promises greater efficiency, productivity, and profitability. However, the vast majority of the existing Bronze Economy workforce lacks the basic digital literacy required to participate in this new paradigm. The skills being taught in many traditional vocational and agricultural training programs are not keeping pace with this rapid technological shift.

This creates the potential for a severe digital divide within the workforce, separating a small, digitally-savvy elite from the masses who are left behind. It will widen the gap between those who can leverage technology to improve their yields and incomes and those who cannot. Addressing this requires an urgent and systemic response. Digital literacy must be integrated as a core competency across all levels of agricultural and vocational education. This should range from teaching smallholders how to use basic mobile apps to training farm managers in data analytics and precision agriculture. Failure to bridge this emerging skills gap will limit the transformative potential of technology and could exacerbate inequality within the very economy it is meant to uplift.

## Part VI: Workforce Analysis and Market Intelligence

A thorough analysis of the Bronze Economy requires a deep dive into its market dynamics, including compensation structures, the landscape of employers and their recruitment methods, and the overarching framework of required skills and qualifications. This section synthesizes data from multiple sources to provide a clear picture of the economic realities and human capital requirements of this foundational sector.

## 6.1 Compensation and Wage Analysis

Compensation within the Bronze Economy is characterized by a stark and persistent wage gap between the formal and informal sectors, and a significant disconnect between legally mandated minimum wages and the actual cost of living.

### The Formal-Informal Wage Gap:

A significant disparity exists in earning potential. Formal, professional roles in capital-intensive sectors like large-scale mining and commercial agribusiness are salaried and relatively well-compensated. Positions such as a **Senior Mine Planning Engineer** or a **Senior Agronomist** come with structured salaries and benefits, reflecting the high levels of education and technical expertise required.<sup>23</sup>

In stark contrast, the vast informal labor market operates on daily or monthly wages that are often precarious and low. Job advertisements on classifieds platforms provide a clear window into this reality. Roles such as **Factory Hands**, **Poultry Farm Workers**, and **Farm Hands** are frequently advertised with monthly salary ranges between GHS 600 and GHS 1,500.<sup>3</sup> This wage level is typical for full-time, physically demanding work.

### Benchmarking against National Standards:

The Government of Ghana, through its National Tripartite Committee, has set the national daily minimum wage for 2025 at **GHS 19.97**.<sup>62</sup> This translates to a monthly minimum wage of approximately GHS 540 for a full-time worker. While many of the advertised informal jobs offer wages that are technically compliant with or slightly



above this legal minimum, they fall dramatically short of providing a decent standard of living.

This gap becomes evident when comparing these wages to independent living wage benchmarks. The Global Living Wage Coalition estimates that a living wage for peri-urban Ghana is **GHS 3,609 per month**, while the Living Income Community of Practice calculates a living income for a typical family in the rural cocoa-growing regions to be **GHS 4,305 per month**.<sup>4</sup> This means that a worker earning the typical informal sector wage of GHS 800–1,200 per month is earning only a fraction of what is required to afford a basic but decent standard of living, including adequate housing, nutrition, healthcare, and education for their family.

This "living wage" versus "minimum wage" dilemma is a central policy challenge. The data clearly demonstrates that simply enforcing the legal minimum wage is insufficient to lift workers out of poverty. A full-time worker can be fully compliant with labor law and still be unable to make ends meet. This suggests that policy must look beyond wage enforcement to address the root causes of low pay: low productivity and low profitability in small-scale agriculture and processing. The solution is not just to mandate higher wages, but to create the economic conditions that enable employers to pay them. This links directly back to the need for better inputs, modern technology, skills training, and improved market access—the very interventions being promoted by various government and development partner programs. The ultimate policy goal should be to shift the entire wage floor upwards, closing the gap between the minimum wage and a true living wage.

## 6.2 Employer Landscape and Recruitment Channels

The ecosystem of employers in the Bronze Economy is highly diverse, and the channels they use for recruitment reflect the formal-informal divide.

### Primary Employer Categories:

145. **Government Agencies:** MoFA, Forestry Commission, Ghana Cocoa Board, and the Youth Employment Agency are major direct and indirect employers, setting policy and running programs that create jobs.<sup>7</sup>
146. **Large Private Companies:** This category includes multinational mining



corporations (Newmont, AngloGold Ashanti) and large-scale agribusiness firms (Complete Farmer, RMG Ghana).<sup>23</sup>

147. **Small and Medium Enterprises (SMEs):** This is a vast and varied group, including commercial farms, agro-processors, equipment suppliers, and quarry operators.
148. **Cooperatives and Community Groups:** Farmer cooperatives and CREMAs are increasingly important as collective employers and economic units.<sup>16</sup>
149. **NGOs and Development Partners:** Organizations like the FAO, GIZ, USAID, and WRI are significant employers, particularly for project-based professional and field staff.<sup>10</sup>

### Recruitment Channels:

- **Formal/Professional Channels:** For skilled, technical, and managerial roles, recruitment is conducted through professional online job portals such as **Jobweb Ghana** <sup>23</sup>, **Jobberman Ghana** <sup>21</sup>, and the dedicated careers pages of large corporations.<sup>35</sup>
- **Informal and Classifieds Channels:** The market for manual, semi-skilled, and informal labor is captured on classifieds platforms like **Jiji** <sup>1</sup> and **Tonaton**.<sup>2</sup> These sites are the primary digital source for jobs like "Factory Hand," "Farm Worker," and other low-wage positions.
- **Institutional Channels:** Government and NGO programs often have their own distinct application processes. For example, applying for a YEA module involves a specific registration process managed by the agency.<sup>8</sup>
- **Community and Social Networks:** For a vast portion of the Bronze Economy, particularly seasonal agricultural labor and artisanal mining, recruitment remains non-digital. It relies on word-of-mouth, community bulletin boards, local radio announcements, and social media groups.<sup>1</sup>

## 6.3 Skills and Qualifications Framework

The skills required to succeed in the Bronze Economy are as diverse as the roles themselves, ranging from physical prowess to advanced technical knowledge. The training infrastructure to develop these skills is a complex network of public and private institutions.

## Demand for Technical and Soft Skills:

- **Technical Skills:** The demand is highly sector-specific. In agriculture, this includes crop-specific agronomy, animal husbandry, and nursery management.<sup>21</sup> In mining, it ranges from basic panning techniques to complex procedures like geotechnical analysis and controlled blasting.<sup>35</sup> In processing and manufacturing, it includes food preservation techniques and the operation and maintenance of machinery.<sup>42</sup>
- **Soft Skills:** Across almost all roles, employers seek **reliability, physical stamina, and a strong work ethic**. Teamwork and basic communication are essential for collaborative environments. For supervisory and community-facing roles, such as Extension Agent or CREMA committee member, skills in **leadership, community engagement, and conflict resolution** are paramount.<sup>19</sup>

## Training and Educational Institutions:

A multi-tiered network of institutions provides the qualifications for the Bronze Economy workforce:

- **Universities:** Institutions like the Kwame Nkrumah University of Science and Technology (KNUST) and the University of Mines and Technology (UMaT) provide the highest level of training, producing graduates with Bachelor's and Master's degrees in Agriculture, Forestry, and various fields of Mining and Engineering.<sup>14</sup>
- **Agricultural Colleges:** A critical middle tier is composed of the state-run Agricultural Colleges, including Kwadaso, Ejura, and Ohawu.<sup>14</sup> These institutions are mandated to train middle-level manpower, offering Certificates and Diplomas in General Agriculture and agribusiness.
- **Forestry Training Institutes:** Specialized training for the forestry profession is provided by bodies like the Ghana Institute of Foresters (GIF) and the Forestry Commission Training Centre (FCTC).<sup>68</sup>
- **Vocational Training and Apprenticeships:** The YEA's National Apprenticeship Programme provides a formal structure for vocational training across numerous trades relevant to the Bronze Economy.<sup>57</sup>

## Skills Gap Analysis:

Despite this network of providers, research highlights a persistent skills gap as a major constraint to growth. A study on "industries without smokestacks" identified a lack of adequately skilled labor—specifically in systems skills, technical skills, and problem-solving skills—as a key barrier for the agro-processing sector.<sup>13</sup> This indicates that while basic labor is available, the workforce often lacks the higher-order competencies needed to operate modern equipment, manage complex processes, and innovate. Initiatives like the VET

Toolbox, supported by the British Council, are working to address this by collaborating with the private sector to develop demand-led, competency-based curricula in areas like Agronomy and Tractor Operation and Maintenance, and by pioneering work-based learning models.<sup>15</sup> This underscores the need for continuous dialogue between industry and training institutions to ensure that curricula are aligned with the real-world needs of the evolving Bronze Economy.

**Table 6.1: Comparative Compensation Analysis**

This table provides a comparative analysis of compensation across different roles and sub-sectors within the Bronze Economy. It juxtaposes reported wage ranges with national minimum and living wage benchmarks to provide a clear, evidence-based assessment of income levels and their adequacy.

| Role Category       | Sub-Sector                       | Compensation Type | Reported Compensation Range (GHS/month) | Comparison to National Minimum Wage (GHS ~540/month) | Comparison to Living Wage Benchmark (GHS ~3,609-4,305/month) | Source(s)     |
|---------------------|----------------------------------|-------------------|---|--|--|---------------|
| Unskilled Laborer   | Vegetable Farming                | Monthly Wage      | 600 - 800                               | Above Minimum  | 14% - 22% of Benchmark                                       | <sup>3</sup>  |
| Unskilled Laborer   | Factory Work (Soap/General)      | Monthly Wage      | 1,000 - 1,500                           | Significantly Above Minimum                          | 28% - 42% of Benchmark                                       | <sup>51</sup> |
| Unskilled Laborer   | Poultry Farming                  | Monthly Wage      | 800 - 1,000                             | Above Minimum  | 19% - 28% of Benchmark                                       | <sup>5</sup>  |
| Semi-Skilled Worker | Poultry Farm Worker (Commercial) | Monthly Wage      | 1,200 - 1,500                           | Significantly Above Minimum                          | 33% - 42% of Benchmark                                       | <sup>21</sup> |

|                        |                               |                       |                     |  |                                     |    |
|------------------------|-------------------------------|-----------------------|---------------------|--|-------------------------------------|----|
| Semi-Skilled Worker    | Construction Helper           | Monthly Wage          | 800 - 1,000         | Above Minimum                          | 19% - 28% of Benchmark              | 51 |
| Skilled Professional   | Senior Mine Planning Engineer | Salaried (Formal)     | Confidential (High) | Far Above Minimum                      | Assumed to meet or exceed Benchmark | 35 |
| Skilled Professional   | Senior Agronomist             | Salaried (Formal)     | Confidential (High) | Far Above Minimum                      | Assumed to meet or exceed Benchmark | 23 |
| Informal Self-Employed | Artisanal Miner               | Volatile Daily Income | Varies widely       | Highly variable, can be above or below | Unlikely to be consistently met     | 37 |
| Informal Self-Employed | Small-Scale Fish Processor    | Volatile Daily Income | Varies widely       | Highly variable                        | Unlikely to be consistently met     | 42 |

## Part VII: Strategic Recommendations for Policy and Workforce Development

The comprehensive analysis of Ghana's Bronze Economy employment landscape reveals a system of immense potential hampered by structural inefficiencies, skills gaps, and precarious livelihoods. To unlock this potential and build a more productive, inclusive, and resilient workforce, a set of coordinated, strategic interventions is required. The following recommendations are designed to address the key challenges identified in this report and provide a roadmap for government agencies,

development partners, industry associations, and educational institutions.

## 7.1 Enhancing Training and Skills Development

The foundation of a modern Bronze Economy is a skilled workforce. Current training systems, while extensive, require significant modernization and reorientation to meet the demands of a changing economic and environmental landscape.

- **Modernize Curricula with Future-Focused Skills:** A national-level review and modernization of curricula across all TVET institutions, agricultural colleges, and relevant university faculties is imperative. This reform should move beyond traditional subjects to embed cross-cutting, high-demand modules. Drawing on the proven best practices and materials developed by GIZ's REACH project, FAO training programs, and the KIC's I.Y.A.T. initiative, all students in agricultural and related vocational fields should receive mandatory training in:
  - **Climate-Smart Agriculture:** Techniques for conservation agriculture, water management, and adaptation to climate variability.<sup>15</sup>
  - **Digital Literacy:** Practical skills in using farm management software, mobile applications for market information and weather, basic data entry, and GPS tools.<sup>11</sup>
  - **Financial Management and Entrepreneurship:** Core business skills including bookkeeping, budgeting, loan application, and business plan development, modeled on the successful training provided to small-scale fisheries processors and young agri-entrepreneurs.<sup>42</sup>
- **Scale Up and Formalize Work-Based Learning:** On-the-job experience is the most effective method of skills transfer. The government should expand and strengthen the National Apprenticeship Programme (NAP) as the primary vehicle for structured, work-based learning.<sup>57</sup> This involves increasing its funding, expanding its reach into more districts, and ensuring its quality control mechanisms are robust. Furthermore, fiscal incentives (e.g., tax credits) should be created to encourage more private sector companies, particularly SMEs in agro-processing and equipment maintenance, to offer formal apprenticeships that adhere to the NAP's 70/30 hands-on learning model.<sup>54</sup>

## 7.2 Strengthening the Informal-to-Formal Transition

The vast informal sector is not a separate economy but an integral part of the Bronze Economy. Policy should focus on a gradual process of professionalization and integration rather than solely on enforcement.

- **Accelerate the Professionalization of Artisanal and Small-Scale Mining (ASM):** Given that ASM employs over a million people, its professionalization is a national economic priority.<sup>37</sup> The government, through the Minerals Commission and in partnership with the World Bank, should accelerate efforts to:
  - Provide ASM cooperatives with access to reliable **geological data** to make their operations more efficient and less speculative.<sup>37</sup>
  - Facilitate access to **affordable financing** for modern, safer, and more efficient equipment.
  - Establish **centralized, mercury-free processing facilities** that can be accessed by cooperatives, reducing environmental damage and improving gold recovery rates.
  - Strengthen the capacity of the Ghana National Association of Small Scale Miners (GNASSM) to act as a key partner in delivering training on safety, environmental management, and financial literacy to its members.<sup>38</sup>
- **Empower and Formalize Agro-Processing Cooperatives:** Small-scale agro-processing, particularly in the shea and cassava value chains, is a major employer of women but is constrained by informality and lack of capital.<sup>46</sup> Policy should target these groups for support by:
  - Channeling dedicated credit lines through rural banks specifically for women-led processing cooperatives.
  - Providing technical assistance and subsidies for the adoption of improved processing technologies to increase efficiency and product quality.
  - Facilitating direct market linkages between these cooperatives and larger buyers (e.g., food companies, exporters) to ensure stable demand and better prices, thereby increasing their profitability and the wages they can afford to pay their members.

## 7.3 Optimizing Government and Development Partner Interventions

The significant investments by government and development partners can yield greater impact through better coordination and a focus on long-term sustainability.

- **Create a Coordinated "Bronze Economy Jobs Strategy":** The current landscape of well-intentioned but often siloed programs (PFJ, FSRP, REACH, NAP, etc.) leads to duplication and missed opportunities for synergy. A high-level, inter-agency task force should be established, co-chaired by the Ministries of Food and Agriculture, and Lands and Natural Resources, and including senior representation from the Youth Employment Agency, COCOBOD, and key development partners (World Bank, GIZ, USAID, FAO). The mandate of this task force would be to develop a single, coherent national strategy for the Bronze Economy. This strategy would align programmatic goals, create seamless pathways for individuals to move from a YEA training module to a MoFA support program, and ensure that investments in different sub-sectors are mutually reinforcing.
- **Institutionalize Project Successes for Long-Term Impact:** Many development partner projects pioneer highly effective training modules and support structures that disappear when the project funding ends. A formal mechanism should be created to identify, evaluate, and institutionalize these successes. For instance, a proven curriculum on Conservation Agriculture developed by a GIZ project should be formally adopted and integrated into the permanent training materials of MoFA's Agricultural Extension Agents and the syllabi of the national agricultural colleges. This would ensure that the benefits of short-term projects are sustained and scaled up through national systems.

## 7.4 A Framework for Future Monitoring

Effective policy requires continuous, high-quality data. The current approach of relying on periodic, disparate surveys is inadequate for managing a dynamic labor market.

### 150. **Develop a Bronze Economy Labor Market Information System (LMIS):**

Ghana should invest in the creation of a dedicated, dynamic LMIS for the Bronze Economy. This would be a digital platform designed to provide a near real-time picture of labor market trends. Its data sources would include:

1. Automated data feeds from formal job portals (Jobberman, Jobweb Ghana).

2. Systematic web scraping and text analysis of informal classifieds sites (Jiji, Tonaton) to track demand and wage trends for low-skilled labor.
  3. Integrated databases from government programs (YEA, MoFA, Minerals Commission).
  4. Regular, standardized data submissions from key industry associations (GNASSM, GAPFA, NASTAG) and cooperatives.
151. **Mandate Standardized Data Reporting:** To populate this LMIS, relevant government agencies should be mandated to collect and report standardized employment data from their programs and regulated sectors. This would include data on the number of jobs created, skill types, wage levels, and demographics of beneficiaries. This continuous flow of data would empower policymakers to monitor the impact of their interventions, identify emerging skills gaps, and adapt their strategies in an agile, evidence-based manner, moving from reactive policy-making to proactive workforce planning.

## Works cited

152. Free classifieds in Ghana ▷ Post free classified ads on Jiji.com.gh, accessed June 26, 2025, <https://jiji.com.gh/>
153. Latest Jobs in Ghana on Tonaton.com, accessed June 26, 2025, [https://tonaton.com/c\\_jobs](https://tonaton.com/c_jobs)
154. Latest Farm Jobs in Ghana on Tonaton.com, accessed June 26, 2025, [https://tonaton.com/c\\_jobs/t\\_farm](https://tonaton.com/c_jobs/t_farm)
155. Ghana - ALIGN, accessed June 26, 2025, <https://align-tool.com/source-map/ghana>
156. Farm Jobs in Ashanti ▷ Latest Farm vacancies on Jiji.com.gh, accessed June 26, 2025, <https://jiji.com.gh/ashanti/jobs/farm>
157. Farm Jobs in Greater Accra - Jiji Ghana, accessed June 26, 2025, <https://jiji.com.gh/greater-accra/jobs/farm>
158. Planting For Food and Jobs - MOFA - Makana Asp Group Limited, accessed June 26, 2025, <https://www.makanademo.com/mofademo/post-details/planting-for-food-and-jobs>
159. Home – Youth Employment Agency, accessed June 26, 2025, <https://yea.gov.gh/home/>
160. www.caritas-ghana.org, accessed June 26, 2025, <https://www.caritas-ghana.org/wp-content/uploads/2019/07/plantinfj.pdf>
161. Resilience Against Climate Change (REACH), accessed June 26, 2025, [https://www.move-giz.org/?file=files/upload\\_comcashew/2024/REACH%20Factsheet%20updated%202025.pdf&cid=2454](https://www.move-giz.org/?file=files/upload_comcashew/2024/REACH%20Factsheet%20updated%202025.pdf&cid=2454)
162. Ghana: Building Resilience from Crisis - A new World Bank support ..., accessed



- June 26, 2025, <https://www.worldbank.org/en/news/press-release/2025/04/29/ghana-building-resilience-from-crisis>
163. Agriculture sector: sector skills strategy - ILO Research Repository, accessed June 26, 2025, <https://researchrepository.ilo.org/esploro/outputs/book/Agriculture-sector-sector-skills-strategy/995219266602676>
164. Employment creation potential, labor skills requirements, and skill gaps for young people - Brookings Institution, accessed June 26, 2025, <https://www.brookings.edu/wp-content/uploads/2021/06/21.06.28-IWOSS-Ghana.pdf>
165. Participating Institutions | AgriConnect, accessed June 26, 2025, <https://www.agriconnectghana.com/participating-institutions>
166. Enhancing agricultural skills Enhancing agricultural skills in Ghana - VET Toolbox, accessed June 26, 2025, [https://vettoolbox.eu/wp-content/uploads/2024/07/VET Toolbox Ghana Factsheet V2.pdf](https://vettoolbox.eu/wp-content/uploads/2024/07/VET_Toolbox_Ghana_Factsheet_V2.pdf)
167. MoFA Urges a Nationwide Farmer Cooperative Initiative to ... - MOFA, accessed June 26, 2025, <https://mofa.gov.gh/site/index.php/media-centre/latest-news/item/672-mofa-urges-a-nationwide-farmer-cooperative-initiative-to-boost-food-security-and-agribusiness>
168. Cocoa farmers co-operatives in Ghana date back to the 1920s. | by Kwame Effah - Medium, accessed June 26, 2025, <https://medium.com/@keffah274/cocoa-farmers-co-operatives-in-ghana-date-back-to-the-1920s-fadc2a56449a>
169. The prospects of community-based natural resource management in Ghana: A case study of Zukpiri community resource management area - DOAJ, accessed June 26, 2025, <https://doaj.org/article/c855f68c206f4e998c3be0feed33bd0e>
170. The prospects of community-based natural resource management in Ghana: A case study of Zukpiri community resource management area - PubMed Central, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC8529512/>
171. Farm Workers / Farming Family Opportunity in Awutu Senya East Municipal - Farming & Veterinary Jobs, Two Real Enterprises - Tonaton Ghana, accessed June 26, 2025, <https://tonaton.com/a-LuubBC0g6tZGr3GoRD4P07m2hrMVOtA-farm-workers-farming-family-opportunity.html>
172. Farming & Agriculture Jobs in Ghana - Accra - Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/jobs/farming-agriculture>
173. Farm Hands in Sege - Farming & Veterinary Jobs, Don Micky | Tonaton.com, accessed June 26, 2025, <https://tonaton.com/a-MfYFNdCgAbUIVQ14niEEYBEBYsB7KS0z-farm-hands.html>
174. Current Agricultural Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 26, 2025, <https://jobwebghana.com/job-category/agricultural-jobs-in-ghana/>
175. Planting for Food and Jobs(PFJ); the Dream and Vision of Reality, accessed June 26, 2025, <https://mofa.gov.gh/site/index.php/publications/agricultural-articles/320-planting-for-food-and-jobs-pfj-the-dream-and-vision-of-reality>

176. world bank to inject \$30m to ghana's food systems resilience., accessed June 26, 2025, <https://fsrp.org.gh/blog/WORLD-BANK-TO-INJECT-%2430M-TO-GHANA%27S-FOOD-SYSTEMS-RESILIENCE>.
177. Sustainable Agriculture in Ghana: German Development Cooperation and EU Delegation Ghana unveil Conservation Agriculture Training Manual for Ghana - GIZ, accessed June 26, 2025, <https://www.giz.de/en/worldwide/136790.html>
178. Home – Greater Accra Poultry Farmers Association - GAPFA Ghana, accessed June 26, 2025, <https://gapfaghana.org/>
179. Contact Us – Greater Accra Poultry Farmers Association - GAPFA Ghana, accessed June 26, 2025, <https://gapfaghana.org/contact-us-i/>
180. Ghana Cocobod Careers | Available Job Opportunities - HiCareer, accessed June 26, 2025, <https://hicareer.com/ghana-cocobod/>
181. Career – Forestry Commission, accessed June 26, 2025, <https://fcghana.org/category/career/>
182. National Seed Trade Association of Ghana - Welcome Page ..., accessed June 26, 2025, <https://nastag.org/>
183. GHANA AGRICULTURE AND NATURAL RESOURCE MANAGEMENT (USAID AGNRM) | Winrock International, accessed June 26, 2025, <https://winrock.org/wp-content/uploads/2016/10/USAID-FtF-Ghana-AgNRM-Fact-Sheet.pdf>
184. (PDF) The Prospects of Community-Based Natural Resource Management in Ghana: A Case Study of Zukpiri Community Resource Management Area - ResearchGate, accessed June 26, 2025, [https://www.researchgate.net/publication/355349238\\_The\\_Prospects\\_of\\_Community-Based\\_Natural\\_Resource\\_Management\\_in\\_Ghana\\_A\\_Case\\_Study\\_of\\_Zukpiri\\_Community\\_Resource\\_Management\\_Area](https://www.researchgate.net/publication/355349238_The_Prospects_of_Community-Based_Natural_Resource_Management_in_Ghana_A_Case_Study_of_Zukpiri_Community_Resource_Management_Area)
185. Ghana Cocoa Region Landscape Restoration Manager - UN Talent, accessed June 26, 2025, <https://untalent.org/jobs/ghana-cocoa-region-landscape-restoration-manager>
186. Careers - Nguvu Mining Limited, accessed June 26, 2025, <https://nguvumining.com/careers/>
187. Current Mining Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 26, 2025, <https://jobwebghana.com/job-category/mining-jobs-in-ghana/>
188. Ghana's Artisanal Miners Generate \$5BN in Forex - African Mining Week, accessed June 26, 2025, <https://african-miningweek.com/news/ghanas-artisanal-miners-generate-5bn-forex>
189. About Us | GNASSM, accessed June 26, 2025, <https://gnassm.org/about-us/>
190. Ghana Landscape Restoration and Small-Scale Mining Project (P171933) - World Bank Documents and Reports, accessed June 26, 2025, <https://documents1.worldbank.org/curated/en/099020224114529733/pdf/P171933141714e0161a02513e5437c13a2b.pdf>
191. Ghana - Food and Agriculture Organization of the United Nations, accessed

- June 26, 2025, <https://www.fao.org/voluntary-guidelines-small-scale-fisheries/in-action/where-we-work/ghana/en>
192. Small-scale fisheries are important for achieving food security | FAO in Ghana, accessed June 26, 2025, <https://www.fao.org/ghana/news/detail-events/en/c/1565239/>
193. FAO trains small-scale fisheries processors and traders in entrepreneurship and financial literacy in Ghana - Food and Agriculture Organization of the United Nations, accessed June 26, 2025, <https://www.fao.org/voluntary-guidelines-small-scale-fisheries/news/news-detail/fao-trains-small-scale-fisheries-processors-and-traders-in-entrepreneurship-and-financial-literacy-in-ghana/en>
194. Recruitment Forestry - Ghana - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/recruitment-forestry>
195. Chemistry, petrochemistry, raw materials, mining Jobs Ghana - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-search-ghana/?f%5B0%5D=im field offre secteur%3A115&f%5B1%5D=im field offre niveau etude%3A52&f%5B2%5D=im field offre niveau etude%3A55>
196. Chemistry, petrochemistry, raw materials, mining Jobs Ghana - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-search-ghana/?f%5B0%5D=im field offre secteur%3A115&f%5B1%5D=im field offre niveau etude%3A52&f%5B2%5D=im field offre niveau etude%3A55&f%5B3%5D=im field offre contrat type%3A42>
197. Analysis of cassava value chain in Ghana: implications for upgrading smallholder supply systems - IDEAS/RePEc, accessed June 26, 2025, <https://ideas.repec.org/a/eme/jadeep/jadee-05-2019-0066.html>
198. Analysis of cassava value chain in Ghana: implications for upgrading smallholder supply systems - ResearchGate, accessed June 26, 2025, [https://www.researchgate.net/publication/341008981\\_Analysis\\_of\\_cassava\\_value\\_chain\\_in\\_Ghana\\_implications\\_for\\_upgrading\\_smallholder\\_supply\\_systems](https://www.researchgate.net/publication/341008981_Analysis_of_cassava_value_chain_in_Ghana_implications_for_upgrading_smallholder_supply_systems)
199. Analysis Of The Cassava Value Chains And Economic Implications On Actors In Southern Ghana - UGSpace, accessed June 26, 2025, <https://ugspace.ug.edu.gh/items/d23eb1d0-c70e-435a-99f9-c4e55315974d>
200. www.inclusivebusiness.net, accessed June 26, 2025, <https://www.inclusivebusiness.net/node/4037#:~:text=Currently%20NGS%20is%20working%20with,10%20communities%20within%204%20districts.>
201. Northern Ghana Shea (NGS), processing shea butter produced by rural women | iBAN, accessed June 26, 2025, <https://www.inclusivebusiness.net/node/4037>
202. Latest Factory Jobs in Greater Accra on Tonaton.com, accessed June 26, 2025, [https://tonaton.com/r\\_greater-accra/c\\_jobs/t\\_factory](https://tonaton.com/r_greater-accra/c_jobs/t_factory)
203. Youth Employment Agency, Ghana, accessed June 26, 2025, <https://yea.gov.gh/jpage/>
204. A Year of Growth: Success Stories from Ghana's Farming Communities • Blogs • Resources | Complete Farmer, accessed June 26, 2025, <https://www.completefarmer.com/resources/blogs/a-year-of-growth-success->

[stories-from-ghanas-farmi](#)

205. Apprenticeship Program | Asafoods Limited, accessed June 26, 2025, <https://gh.asafoodsltd.com/service/apprenticeship-program/>
206. Youth in Agriculture, RMG Collaboration Yields Massive Results - MOFA, accessed June 26, 2025, <https://mofa.gov.gh/site/media-centre/archived-info/40-media-center/latest-news/109-youth-in-agriculture-rmg-collaboration-yields-massive-results>
207. Ghana's National Apprenticeship Programme: Integrating stakeholders for success, accessed June 26, 2025, <https://www.ghanaweb.com/GhanaHomePage/features/Ghana-s-National-Apprenticeship-Programme-Integrating-stakeholders-for-success-1982803>
208. National Apprenticeship Programme - Accra - National Youth Authority, accessed June 26, 2025, <https://www.nya.gov.gh/nap>
209. Initiative for Youth in Agricultural Transformation (I.Y.A.T) | Mastercard Foundation, accessed June 26, 2025, <https://mastercardfdn.org/en/what-we-do/our-programs/initiative-for-youth-in-agricultural-transformation-iyat/>
210. About - The Council for Scientific & Industrial Research - Home, accessed June 26, 2025, <https://csir.org.gh/index.php/about-us>
211. Ghana | IFPRI, accessed June 26, 2025, <https://www.ifpri.org/country/ghana/>
212. Agriculture Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/agriculture-jobs>
213. Ghana Minimum Wage Rises to GHS 19.97 in 2025 - Atlas HXM, accessed June 26, 2025, <https://www.atlashxm.com/resources/ghana-minimum-wage-2025>
214. Minimum Wage Updated in Ghana from 1 March 2025 - March 17, 2025 - WageIndicator.org, accessed June 26, 2025, <https://wageindicator.org/salary/minimum-wage/minimum-wages-news/2025/minimum-wage-updated-in-ghana-from-1-march-2025-march-17-2025>
215. Ghana (University of Mines and Technology) - AFRICAN UNIVERSITIES, accessed June 26, 2025, <https://africanuniversities.org/listing/mines-technology/>
216. Department of Mining Engineering - UMaT, accessed June 26, 2025, <https://dept.umat.edu.gh/mn/>
217. The College - Ohawu Agricultural College, accessed June 26, 2025, <https://www.oac.edu.gh/main/the-college/>
218. Kwadaso Agric College, accessed June 26, 2025, <https://kca.edu.gh/>
219. About Us - Ghana Institute of Foresters, accessed June 26, 2025, <https://gifor.org/about-gif/>
220. FCTC - Forestry Commission Training Centre, accessed June 26, 2025, <https://fcghana.org/category/division-centers/fctc/>

# **The Gold Economy of Ghana: A Nationwide Assessment of the Employment Landscape for an Aging Population**

## **Part I: The Macro-Level Context: Policy, Demographics, and the Economic Realities of Aging**

### **Section 1: The National Framework for an Aging Ghana: Aspirational Policies and Implementation Realities**

#### **1.1 The Policy Architecture**

The Republic of Ghana has developed a sophisticated and comprehensive policy architecture aimed at addressing the needs of its aging population. This framework is anchored by several key documents and ministerial mandates that, on paper, provide a robust foundation for ensuring the well-being of older persons. At the forefront is the **National Ageing Policy**, developed in 2010 by the Ministry of Employment and Social Welfare in collaboration with stakeholders.<sup>1</sup> The policy's vision is to achieve the overall social, economic, and cultural re-integration of older persons into mainstream society, enabling them to participate fully in the national development process with security and dignity.<sup>2</sup> It outlines a multi-sectoral strategy across ten priority areas, including crucial domains such as improving health and nutrition, ensuring income security, enhancing social welfare, and creating an age-friendly living environment.<sup>2</sup>

This is complemented by the **National Social Protection Policy (NSPP)**, which

conceptualizes social protection as a broad range of actions by the state and other entities to respond to vulnerability and poverty.<sup>5</sup> The NSPP aims to deliver a well-coordinated, inter-sectoral system that enables people to live in dignity through income support, livelihood empowerment, and improved access to basic services. It explicitly identifies the elderly as a key target group for these interventions.<sup>5</sup>

The implementation of these policies is primarily driven by the **Ministry of Gender, Children and Social Protection (MoGCSP)**. The MoGCSP's mandate is to promote an integrated society that offers equal opportunity and safeguards the rights of vulnerable groups, including the aged, through targeted social protection interventions.<sup>6</sup> The Ministry oversees flagship programs such as the Livelihood Empowerment Against Poverty (LEAP) programme and the issuance of the Eban Elderly Welfare Card.<sup>7</sup> It operates through various departments, including the Department of Social Development, which plays a direct role in implementing programs for the elderly.<sup>7</sup> Other critical government bodies include the Ministry of Employment and Labour Relations, which oversees the pension system through its agencies—the National Pensions Regulatory Authority (NPRA) and the Social Security and National Insurance Trust (SSNIT)—and the Ministry of Health, which, through the Ghana Health Service (GHS), is responsible for the healthcare delivery system.<sup>9</sup> Together, these policies and institutions form a network intended to provide a comprehensive safety net for Ghana's older citizens.

## **1.2 The Implementation Chasm: Fragmentation and Lack of Legal Force**

Despite the comprehensive nature of Ghana's policy intentions, a significant chasm exists between this formal architecture and its on-the-ground implementation. A critical structural flaw is the fragmentation of policy responsibility and the conspicuous absence of legal imperatives to enforce the stated goals. The National Ageing Policy, while ambitious, is issued by the MoGCSP, whereas the overarching National Health Policy falls under the purview of the Ministry of Health.<sup>4</sup> This separation results in a disjointed and poorly coordinated approach to geriatric care and well-being, where strategic priorities are not mainstreamed across government.

More fundamentally, the National Ageing Policy has been described by researchers as a "strong strategic framework" that is severely constrained by its lack of "binding



agency accountability" and "supporting legislation".<sup>4</sup> Its provisions are largely aspirational, dependent on the goodwill and budget allocations of various ministries rather than being legally enforceable mandates. This absence of legal teeth directly impedes the translation of policy priorities into tangible, funded programs. For instance, despite the policy's call for improved healthcare, Ghana still lacks a dedicated national geriatric center, and only an estimated 40% of essential geriatric care costs are covered by existing schemes, leaving families to bear the burden of out-of-pocket expenditures.<sup>1</sup>

This fragmentation is also evident in the social protection landscape. The government has instituted several programs targeting the elderly, such as the LEAP cash grants for the extremely poor, free registration onto the National Health Insurance Scheme (NHIS) for those over a certain age, and the Eban Elderly Welfare Card for transport and service discounts.<sup>1</sup> While each program provides a measure of relief, they operate as a patchwork of interventions rather than a seamless, integrated system. This can lead to duplication of efforts, administrative inefficiencies, and gaps in coverage, a weakness that has been acknowledged within the national strategy itself.<sup>12</sup> The result is a system that is less than the sum of its parts, failing to provide the comprehensive and reliable support envisioned in the national policies.

### **1.3 The Market Response to Policy Gaps**

The gap between the government's comprehensive policy vision for older persons and the reality of its underfunded, fragmented, and legally non-binding implementation has not created a vacuum. Instead, it has fostered the emergence of a vibrant, but largely unregulated, market-based ecosystem to meet the escalating demand for elderly care services. The state's inability to translate its own well-articulated policies into functioning public services has effectively outsourced the development of the "Gold Economy" to the private and informal sectors.

The causal chain is clear. The government, through documents like the National Ageing Policy, officially recognizes the diverse needs of its aging population, from specialized healthcare to social support.<sup>2</sup> However, a lack of dedicated funding and legal enforcement means these public services remain nascent or non-existent. For example, the call to mainstream geriatrics into the healthcare system has not resulted

in a single publicly-funded, dedicated geriatric center, and the NHIS leaves significant gaps in long-term care coverage.<sup>1</sup> This creates a substantial and growing reservoir of unmet demand from a population that is expanding rapidly.<sup>13</sup>

The market, in response, has stepped in to fill this service delivery void. An entire industry of private home care agencies has emerged, particularly in urban centers like Accra, offering services from basic companionship to skilled nursing care.<sup>14</sup> Similarly, a growing number of private, fee-based residential homes and day care centers are providing the long-term and respite care that the public system does not.<sup>16</sup> Non-governmental organizations (NGOs) and faith-based groups also play a crucial role, providing a patchwork of support services from legal aid to food and shelter.<sup>18</sup> Consequently, the employment landscape within Ghana's Gold Economy is not being shaped by structured public sector expansion as envisioned by policy. Rather, it is being driven by a reactive, fragmented, and predominantly private and informal market. This dynamic has profound implications for the nature of employment, creating jobs that are often precarious and operating outside formal regulatory oversight, which in turn affects the quality and equity of care available to older Ghanaians.

## **Section 2: The Demographic Imperative and Socio-Economic Profile of Older Ghanaians**

### **2.1 A Nation in Transition: The Demographics of Aging**

Ghana is undergoing a profound demographic transition, characterized by a rapidly growing older population. The number of Ghanaians aged 60 and over has expanded dramatically, increasing almost tenfold over six decades, from 213,477 in 1960 to nearly 2 million (1,991,736) in 2021.<sup>13</sup> Projections indicate that this trend will accelerate, with the elderly cohort expected to reach 6.3 million by the year 2050, representing a significant shift in the country's age structure.<sup>21</sup>

However, this increasing longevity does not necessarily translate to an extended period of healthy, active life. Ghana's life expectancy at birth stands at approximately



64.5 years, which is well below the global average.<sup>23</sup> More critically, analysis from the Ghana Center for Democratic Development (CDD-Ghana) highlights a crucial distinction between lifespan and "healthspan," noting that for many Ghanaians, the final years of life are marked by declining health, increased financial stress, and reduced mobility.<sup>23</sup> This reality is corroborated by health data, which shows a high prevalence of chronic non-communicable diseases (NCDs) among the population aged 50 and over. A 2005 study found that 45% of this group had oral health problems, 33% were hypertensive, 14% had arthritis, and 7% had been diagnosed with diabetes.<sup>24</sup> These conditions often require long-term management and care, placing a significant burden on individuals, families, and the healthcare system.

The experience of aging in Ghana is also shaped by significant gender and regional disparities. The elderly population is predominantly female, with women constituting 56.7% of the 60+ cohort, a reflection of their higher life expectancy.<sup>13</sup> These older women are often more vulnerable due to cultural factors and a lifetime of operating within the informal economy.<sup>1</sup> Furthermore, the socio-economic well-being of older persons varies dramatically across the country. According to the 2021 Population and Housing Census, the incidence of multidimensional poverty among the elderly ranges from a low of 8.8% in the urbanized Greater Accra Region to a staggering 53.0% in the rural Savannah Region, highlighting a deep urban-rural and north-south divide in the quality of life for older Ghanaians.<sup>13</sup>

## **2.2 The Economic Reality: A Lifetime of Informality**

The economic landscape for older Ghanaians is overwhelmingly defined by the informal sector. Data from the Ghana Statistical Service (GSS) reveals a stark reality: a staggering 90.1% of all employed persons aged 60 and over work in the private informal sector.<sup>13</sup> This is a direct reflection of the broader national economy, where informal employment constitutes 89% of the total workforce.<sup>25</sup> Within this elderly informal workforce, 80% are self-employed without any employees, indicating a prevalence of small-scale, individual enterprises.<sup>13</sup>

This reliance on informal work means that the majority of older workers are engaged in what is classified as "vulnerable employment." Over half (53.2%) of the employed elderly fall into this category, meaning they operate in jobs that lack formal contracts,

benefits such as paid sick leave, or access to social protection mechanisms like formal pensions.<sup>13</sup> Their livelihoods are precarious and subject to the shocks and uncertainties of the informal market.

The primary economic activities for this demographic are concentrated in a few key areas. Based on the 2010 census, the three major occupations for the elderly were skilled agriculture and forestry (predominantly food crop farming), accounting for 63.1% of the workforce; service and sales work, at 13.3%; and craft and related trades, at 8.4%.<sup>3</sup> This underscores the deep and enduring connection between aging and agriculture in Ghana, particularly in rural areas where the majority of older persons reside. The high level of informalization and the concentration in low-productivity sectors mean that despite working long hours—a HelpAge report noted a 60-year-old woman in Ghana works an average of 50 hours a week—many older people find their earnings are insufficient to cover even basic living costs.<sup>26</sup>

## **2.3 The Retirement Paradox**

Ghana's employment landscape for older persons is defined by a significant paradox: while the official retirement age from formal public and private sector employment is 60, a large proportion of the elderly population continues to work well beyond this age out of sheer economic necessity.<sup>11</sup> Data from the 2021 census shows that labor force participation remains remarkably high in later life, with 50.0% of the 60-69 age group and 28.6% of the 70-79 age group still employed.<sup>13</sup> This continued economic activity is not a matter of choice or a desire for post-retirement engagement; it is a direct consequence of a social protection system that fails to cover the vast majority of the population.

The national pension system, managed by SSNIT, is a contributory scheme tied to formal sector employment, effectively excluding the over 90% of the elderly who have spent their lives working in the informal economy.<sup>11</sup> While the 3-tier pension system includes a voluntary component (Tier 3) designed for informal workers, its uptake has been limited, leaving most without a reliable source of retirement income.<sup>1</sup> Consequently, continued work in farming, trading, or crafts is the only available survival strategy.<sup>1</sup>

This reality provides a critical context for the ongoing policy debate surrounding

proposals to raise the national retirement age to 65.<sup>23</sup> Proponents frame this as a necessary measure to ensure the actuarial sustainability of pension schemes like SSNIT in the face of increasing longevity. However, critics argue this is a "callous arithmetic" exercise that ignores Ghana's specific demographic and health realities. With a national life expectancy of just 64.5 years and data suggesting that 71% of Ghanaians who reach age 60 are deceased by their 65th birthday, such a policy would effectively mean asking most formal sector workers to work until death, shrinking the liabilities of pension funds by reducing the number of people who live long enough to claim long-term benefits.<sup>23</sup> This debate highlights a fundamental disconnect between fiscal policy considerations and the lived economic realities of aging in Ghana.

## **2.4 The Informal Economy as the De Facto Social Safety Net**

A comprehensive analysis of Ghana's socio-economic data reveals a fundamental truth about its Gold Economy: for the vast majority of older Ghanaians, the informal economy itself serves as the primary, and often only, social safety net. The formal systems of social protection, while well-intentioned, have a limited reach that leaves most of the aging population to fend for themselves through continued labor. This reality fundamentally reframes the nature of the Gold Economy, showing it to be an ecosystem where older persons are not just the consumers of services but are, by necessity, the predominant part of its workforce.

The structure of formal social protection illustrates this point. The national pension scheme, SSNIT, is a contributory system that requires a history of formal employment to qualify for benefits.<sup>11</sup> As over 90% of the elderly who are still working operate within the informal sector, they are systematically excluded from this primary pillar of income security.<sup>13</sup> The government's social assistance program, LEAP, is designed to catch the most vulnerable, providing cash grants to those in "extreme poor households" who are 65 years and older and "without productive capacity".<sup>1</sup> While vital, this program is not a universal pension; it is a targeted poverty-alleviation tool with a limited number of beneficiaries, recorded at 259,853 in one report.<sup>11</sup>

This leaves a large "missed middle": older persons who are not destitute enough to qualify for LEAP but have no access to a formal pension. For this majority, the only

viable strategy for old-age income security is to continue working in their informal enterprises—be it farming, market trading, or craft production—long past the official retirement age of 60.<sup>1</sup> Their work is not for enrichment but for survival. This means that any assessment of employment within the Gold Economy must make a critical distinction. It is not merely a sector of jobs

*serving* the elderly; it is a sector largely composed *of* the elderly themselves, who are self-employed in a survivalist economy. This understanding is crucial for designing effective policies, as interventions aimed at creating formal care jobs will not address the core economic precarity of the millions of older Ghanaians who must continue to work to survive.

## Part II: Sectoral Analysis: An Inventory of Employment Opportunities

The employment landscape of Ghana's Gold Economy is a complex tapestry of formal, informal, private, public, and non-profit activities. To provide a systematic overview, the following inventory categorizes the diverse roles that constitute this emerging economic sphere. The table below serves as a foundational reference for the detailed sectoral analysis that follows, mapping job titles to their respective sectors, employment types, and the core skills required. It fulfills the central objective of creating a comprehensive inventory of work opportunities related to Ghana's aging population.

**Table 1: Inventory of Gold Economy Employment Roles in Ghana**

| Primary Sector           | Sub-Sector/Domain    | Job Title/Role                      | Employment Type | Key Skills & Qualifications                  | Evidence/Source Snippet(s) |
|--------------------------|----------------------|-------------------------------------|-----------------|--|----------------------------|
| Healthcare & Social Care | Formal Hospital Care | Geriatrician / Specialist Physician | Formal Salaried | Medical Degree, Specialization in Geriatrics | <sup>10</sup>              |

|  |                       |                                 |                                 |  |    |
|--|-----------------------|---------------------------------|---------------------------------|--|----|
|  | Formal Hospital Care  | Geriatric Nurse                 | Formal Salaried                 | Nursing Degree/Diploma, Geriatric Certification (rare)         | 30 |
|  | Private Home Care     | Registered Nurse (Private Duty) | Formal Contract / Self-Employed | Nursing Degree/Diploma, Clinical Skills (Wound Care, IV)       | 15 |
|  | Private Home Care     | Caregiver / Home Care Assistant | Formal Contract / Informal      | Caregiver Certificate (optional), Compassion, Physical Stamina | 33 |
|  | Residential/Day Care  | Facility Manager                | Formal Salaried                 | Management, Healthcare Administration, Finance                 | 16 |
|  | Residential/Day Care  | Activities Coordinator          | Formal Salaried/Part-Time       | Creativity, Social Engagement Skills, Planning                 | 35 |
|  | Community Health      | Community Health Nurse          | Formal Salaried (Public Sector) | Diploma/Degree in Community Health Nursing                     | 36 |
|  | NGO & Social Services | Social Worker                   | Formal Contract (NGO)           | Degree in Social Work, Advocacy, Case Management               | 38 |
|  | NGO & Social          | Program Coordinator             | Formal Contract                 | Project Management   | 19 |

|                           |                        |                                     |                                   |   |    |
|---------------------------|------------------------|-------------------------------------|-----------------------------------|---|----|
|                           | Services               |                                     | (NGO)                             | , Grant Writing, M&E                                      |    |
|                           | NGO & Social Services  | Volunteer Social Worker             | Volunteer                         | Empathy, Communication, Community Mobilization            | 18 |
|                           | Training & Education   | Gerontology Lecturer/Researcher     | Formal Salaried (University)      | PhD/MPhil in Ageing Studies, Research Skills              | 41 |
|                           | Training & Education   | Caregiver Trainer/Instructor        | Formal Contract (Private College) | Experience in Caregiving, Teaching Skills                 | 43 |
| <b>Financial Services</b> | Pension Administration | Pensions Administrator / Team Lead  | Formal Salaried                   | Finance/Adm in Degree, Knowledge of Pension Law (Act 766) | 45 |
|                           | Pension Administration | Fund Accountant / Portfolio Analyst | Formal Salaried                   | Accounting/ Finance Degree, Analytical Skills, Excel      | 47 |
|                           | Pension Administration | Compliance Officer                  | Formal Salaried                   | Legal/Finance Background, Attention to Detail             | 48 |
|                           | Wealth Management      | Wealth Advisor / Financial Planner  | Formal Salaried/Commission        | Finance Degree, CFP/CFA (preferred), Client               | 49 |

|                                   |                       |                                      |                                  |   |    |
|-----------------------------------|-----------------------|--------------------------------------|----------------------------------|---|----|
|                                   |                       |                                      |                                  | Management  |    |
|                                   | Insurance Services    | Financial Advisor (Bancassurance)    | Formal Salaried/Commission       | Sales, Financial Planning Skills, Bachelor's Degree           | 51 |
|                                   | Insurance Services    | Insurance Broker (Senior Products)   | Self-Employed/Formal Contract    | Broker License, Product Knowledge (Funeral, Health)           | 53 |
|                                   | Microfinance          | MFI Outreach Officer (Elderly Focus) | Formal Contract (Potential Role) | Community Mobilization, Financial Literacy Training           | 55 |
| <b>Technology &amp; Ancillary</b> | AgeTech & Digital     | UX/UI Designer (Accessibility Focus) | Formal Contract (Potential Role) | Design Skills, Understanding of Senior User Needs             | 57 |
|                                   | AgeTech & Digital     | Digital Literacy Trainer             | Part-Time/Volunteer              | Teaching Skills, Patience, Basic IT Knowledge                 | 58 |
|                                   | Housing & Environment | Assisted Living Facility Manager     | Formal Salaried (Niche)          | See Residential/Day Care Facility Manager                     | 17 |
|                                   | Housing & Environment | Universal Design Architect/Planner   | Formal Contract (Potential Role) | Architecture/Planning Degree, Specialization in Accessibility | 1  |

|  |                              |  |                                  |  |    |
|--|------------------------------|--|----------------------------------|--|----|
|  | Supporting Services          | Senior Center Coordinator                        | Part-Time/Volunteer              | Event Planning, Community Engagement                     | 35 |
|  | Rural Economy                | Agricultural Extension Officer (Geriatric Focus) | Formal Salaried (Potential Role) | Agriculture Degree, Gerontology Knowledge, Communication | 60 |
|  | Self-Employment (by Elderly) | Farmer / Agricultural Worker                     | Informal / Self-Employed         | Farming Skills, Physical Labor                           | 3  |
|  | Self-Employment (by Elderly) | Market Trader / Street Vendor                    | Informal / Self-Employed         | Sales, Numeracy, Customer Service                        | 3  |

### Section 3: The Healthcare and Social Care Workforce: A Bifurcated System

The workforce dedicated to the health and social care of older Ghanaians operates as a bifurcated system, sharply divided between a small, under-resourced formal sector and a burgeoning, largely unregulated private and non-profit frontier. This division shapes the availability, quality, and equity of care, and defines the nature of employment opportunities within the sector.

#### 3.1 Formal Healthcare Roles: A Scarcity of Specialists

Within Ghana's formal public and private healthcare systems, roles specifically dedicated to geriatrics are exceptionally rare. The most significant challenge is the critical shortage of specialist physicians. Across the entire nation, there are only 22



registered geriatric specialists to serve an elderly population of nearly two million.<sup>10</sup> This extreme scarcity means that access to specialized medical care is virtually non-existent for the vast majority of older persons, particularly those in rural areas, as the few existing specialists are concentrated in major urban hospitals.<sup>10</sup> While some tertiary institutions like the Korle-Bu Teaching Hospital offer dedicated clinical days for elderly care, and district-level facilities like Achimota Hospital report providing services for the aged, the concept of a dedicated, fully-staffed geriatric unit remains an anomaly.<sup>29</sup> Most older patients are therefore managed by general practitioners who lack specialized training in the complex needs of aging bodies.<sup>29</sup>

This skills gap extends to the nursing profession. The Ghana Registered Nurses and Midwives Association (GRNMA) serves as the primary professional body for nurses, and the Nursing and Midwifery Council (N&MC) regulates their practice and licensing.<sup>63</sup> However, neither organization appears to offer or mandate a formal, widely accessible certification in geriatric nursing.<sup>30</sup> While the GRNMA's mission includes promoting nursing education and research, specialized training in geriatrics is not a prominent feature of its public-facing information.<sup>30</sup> Research conducted among healthcare practitioners at the polyclinic level reveals a recognized need for such training, citing poor existing knowledge and negative perceptions toward geriatric care as significant barriers to quality service delivery.<sup>31</sup>

The formal social work sector faces similar limitations. The Ghana Association of Social Workers (GASOW) is the professional body for practitioners in the field.<sup>39</sup> However, an analysis of job advertisements on major portals reveals that while NGOs and community-based organizations hire social workers, very few positions are specifically designated for working with the elderly.<sup>38</sup> The available roles, such as those with SOS Children's Villages or TREE AID, are typically project-based, focused on broader community development, and concentrated in the Accra & Tema Region, leaving much of the country without dedicated social work support for its aging population.<sup>38</sup>

### **3.2 The Private and NGO Care Economy: A Burgeoning, Unregulated Frontier**

In stark contrast to the scarcity in the formal public sector, a dynamic and rapidly growing private care economy has emerged to meet the demand for elderly support

services. This frontier is dominated by private home care agencies, particularly in Accra. Companies such as PrideMed Homecare Services, Imperial Nursing and Home-care Services, SilverLine Health, and Accra Homecare have established businesses that provide a range of in-home services.<sup>14</sup> These agencies create a significant number of jobs for

**Caregivers, Home Care Assistants, Private Nurses, and Care Technicians.** The employment arrangements vary from formal contracts to more informal, client-directed hiring. The qualifications for these roles are not standardized; while some agencies employ Registered Nurses for skilled tasks like wound care and IV therapy, many caregiver roles require little more than a willingness to assist with daily living activities, with compassion and physical stamina being the primary prerequisites.<sup>15</sup>

Alongside home care, a market for residential and day care facilities is also taking shape. These are often privately owned, fee-based enterprises that cater to families who can afford such services.<sup>17</sup> Establishments like Greenhills Centre Aged Care Home, Ark Lifestyle Lounge, and the Vibrant Aging Community Center offer services ranging from adult day care to full-time residential living.<sup>16</sup> This sub-sector generates employment for

**Facility Managers, Activities Coordinators, and Resident Care Staff,** roles that require a blend of management, social engagement, and basic care skills.

Non-governmental and faith-based organizations are pillars of this non-state ecosystem. HelpAge Ghana, a leading authority on aging, works to support other organizations, provides direct aid including food and shelter, and offers legal advice to help older people access government services.<sup>18</sup> Other key players include the Society for the Aged (SOFAG) in the Ashanti Region and the Ark Lifestyle Foundation in Accra.<sup>35</sup> These organizations create formal and volunteer roles for

**Program Coordinators, Advocacy Officers, Community Outreach Workers, and Volunteer Social Workers.** Their work is often focused on both direct service delivery and advocating for policy change, such as pushing for pension reforms and inclusion in the LEAP program.<sup>19</sup>

### **3.3 Community and Allied Health Roles**

Bridging the gap between the formal health system and communities are the crucial, though often under-resourced, roles of community and allied health workers.

**Community Health Nurses (CHNs)** represent a formal public sector cadre trained to provide preventative and basic curative care at the community level. Their job descriptions and the CVs of practicing CHNs indicate that their responsibilities include providing care to diverse population groups, including the elderly, often through home visits.<sup>36</sup> They are tasked with assessing the physical and social needs of older adults, providing health education, monitoring chronic conditions, and making necessary referrals to higher levels of care or social services.<sup>37</sup> This role is vital for reaching older persons who may have mobility challenges or live in remote areas.

Beyond these formal roles, a vast and essential part of the care workforce operates on a voluntary basis. The work of numerous NGOs, faith-based groups, and community associations is sustained by volunteers who provide companionship, assist with errands and domestic chores, and help organize social clubs and events for older people.<sup>18</sup> Organizations like HelpAge Ghana explicitly state that they arrange training for volunteer social workers to encourage local communities to support their elderly members.<sup>18</sup> International volunteer placement organizations also list opportunities in Ghana for working with seniors, indicating a demand for this type of unpaid labor.<sup>40</sup> While these roles do not constitute formal employment, they represent a significant contribution of time and labor to the Gold Economy, forming the backbone of social support for many older Ghanaians where formal services are absent.

### 3.4 The Training and Certification Landscape

The educational landscape for geriatric care in Ghana is characterized by a deep divide between high-level academic programs and a fragmented, expensive private market for vocational training. At the apex of the system is the **University of Ghana's Centre for Ageing Studies (CFAS)**, a key institution dedicated to research and advanced education on aging.<sup>42</sup> CFAS offers MA, MPhil, and PhD programs in Ageing Studies, with curricula focused on topics like the political economy of aging, geriatric assessment methods, and theories of aging.<sup>41</sup> These programs are designed to produce a small cadre of highly qualified

**Researchers, Academics, and Policy Analysts**, not frontline caregivers. Similarly, Kwame Nkrumah University of Science and Technology (KNUST) is engaged in high-level research on aging, particularly in the context of HIV, which contributes to academic knowledge but not direct workforce training.<sup>70</sup>

At the vocational level, a private, for-profit training market has emerged to fill the gap. Institutions in Accra such as the **Accra Elderly Care Institute** and **Clarion College** offer caregiver certification programs.<sup>43</sup> Their curricula cover practical skills like vital signs monitoring, basic physiotherapy, bedside care, and managing dementia.<sup>43</sup> These programs often include a mandatory internship and may offer the option of obtaining international accreditation from UK or US bodies for an additional fee.<sup>44</sup> However, this training comes at a significant cost. Clarion College charges GHS 2,800 to GHS 4,500 for its programs, while an international provider, TrainingCred, lists a five-day caregiver course in Accra for USD 2,600.<sup>44</sup> This pricing structure places formal certification well beyond the reach of most individuals seeking entry-level caregiver positions.

**Table 2: Comparative Analysis of Geriatric and Caregiver Training Programs in Ghana**

| Institution                | Program Title           | Qualification Level | Duration | Stated Cost          | Key Curriculum Areas  | Accreditation | Target Career Path                   |
|----------------------------|-------------------------|---------------------|----------|----------------------|---|---------------|--------------------------------------|
| University of Ghana (CFAS) | PhD in Ageing Studies   | PhD                 | 4 Years  | GHS 11,985 (Regular) | Theories of Ageing, Ethics, Gerontechnologies, Social Aspects of Ageing | National      | Researcher, Academic, Policy Analyst |
| University of Ghana (CFAS) | MPhil in Ageing Studies | MPhil               | 2 Years  | GHS 7,233 (Regular)  | Ageing & Health, Human  | National      | Researcher, Program Manager          |

|  |   |                 |  |   |   |  |   |
|--|---|-----------------|--|---|---|--|---|
|  |   |                 |  |   | Rights,<br>Political<br>Econom<br>y of<br>Ageing  |  |   |
| <b>Universi<br/>ty of<br/>Ghana<br/>(CFAS)</b>       | MA in<br>Ageing<br>Studies  | MA              | 1 Year   | GHS<br>25,655<br>(Weeken<br>d/Online<br>) | Working<br>with the<br>Elderly,<br>Interven<br>tions for<br>Healthy<br>Ageing                     | National   | Policy<br>Officer,<br>NGO<br>Manager                      |
| <b>Clarion<br/>College</b>                           | Diploma<br>in<br>Healthc<br>are<br>Assistan<br>t -<br>Caregive<br>r | Diploma         | 5<br>Saturda<br>ys + 1-3<br>months<br>internshi<br>p | GHS<br>4,500                              | ADLs,<br>Vital<br>Signs,<br>Dementi<br>a Care,<br>Infection<br>Control                            | College<br>Certifica<br>te,<br>Optional<br>UK/US | Professi<br>onal<br>Caregive<br>r<br>(Local/O<br>verseas) |
| <b>Accra<br/>Elderly<br/>Care<br/>Institut<br/>e</b> | Certified<br>Elderly<br>Care<br>Attenda<br>nt                       | Certifica<br>te | Not<br>Specifie<br>d                                 | Not<br>Specifie<br>d                      | Vital<br>Signs,<br>Basic<br>Physioth<br>erapy,<br>Bedside<br>Care,<br>Stroke/D<br>iabetic<br>Care | Institute<br>Certifica<br>te                     | Professi<br>onal<br>Caregive<br>r                         |
| <b>Training<br/>Cred</b>                             | Essential<br>Skills for<br>Elderly<br>Caregive<br>rs                | Certifica<br>te | 5 Days   | USD<br>2,600                              | Commu<br>nication,<br>Dementi<br>a Care,<br>Palliative<br>Care,<br>Self-<br>Care                  | Internati<br>onal<br>Provider                    | Professi<br>onal<br>Caregive<br>r                         |

Sources: <sup>41</sup>

### 3.5 The Skills and Certification Disconnect

A critical examination of the healthcare and social care sector reveals a dangerous disconnect between the available training, the skills demanded by the market, and the economic realities of caregiving jobs. This creates a "missing middle" in the workforce development pipeline, where accessible, affordable, and nationally standardized vocational training for the vast majority of caregiver roles is conspicuously absent. This structural flaw hampers the professionalization of the care workforce and perpetuates a cycle of low-quality care and worker precarity.

The formal health system suffers from a severe shortage of high-level geriatric specialists, a gap that cannot be filled quickly.<sup>10</sup> The advanced degree programs at the University of Ghana, while valuable, are designed to produce researchers and policy experts, not the thousands of frontline caregivers needed on the ground, and are financially and academically inaccessible to the average job seeker.<sup>41</sup> On the other end of the spectrum, the emerging private training market, with providers like Clarion College and TrainingCred, charges fees that are prohibitively expensive for individuals aspiring to entry-level positions.<sup>44</sup> A course costing thousands of cedis or dollars is an insurmountable barrier for someone seeking a job that may pay only a modest monthly salary.

This leads to a significant mismatch in the labor market. Job portals are populated with numerous individuals seeking "caregiver" or "healthcare assistant" roles, often with varied and uncertified backgrounds.<sup>33</sup> The employers for these roles are frequently individual families or small, private agencies with limited capacity to pay premium wages for highly certified staff. The result is an employment ecosystem where the supply of workers does not match the demand for certified skills, and the high cost of certification does not align with the low-paying, often informal nature of the available jobs. This situation prevents the establishment of a professional standard for caregiving, leaving older persons vulnerable to care from untrained individuals and caregivers themselves open to exploitation. The most significant employment opportunity, therefore, lies not in expanding the existing high-end programs but in creating an accredited, affordable, national vocational training framework, perhaps under the National Vocational Training Institute (NVTI), to formalize and professionalize the essential role of the geriatric caregiver.

## Section 4: The Financial Services and Income Security Sector

The financial services sector of Ghana's Gold Economy presents a stark duality. On one side stands a sophisticated, highly regulated formal industry encompassing pensions, wealth management, and insurance, which creates professional employment but serves a small segment of the population. On the other side lies the vast informal economy, where the majority of older Ghanaians operate with virtually no access to these formal financial safety nets.

### 4.1 Pensions Administration: The Formal Pillar

The bedrock of formal retirement income security in Ghana is the **3-Tier Pension Scheme**, established under the National Pensions Act, 2008 (Act 766) and regulated by the **National Pensions Regulatory Authority (NPRA)**.<sup>9</sup> This structure consists of a mandatory basic national social security scheme (Tier 1) managed by the public Social Security and National Insurance Trust (SSNIT), a mandatory, privately managed occupational pension scheme (Tier 2), and a voluntary private pension and provident fund scheme (Tier 3).<sup>28</sup>

The management of Tier 2 and Tier 3 funds has created a robust formal employment sector within private financial institutions. Licensed corporate trustees such as **Old Mutual Pensions Trust**, **Axis Pension Trust**, **Stanbic Investment Management Services (SIMS)**, and **Metropolitan Pensions Trust** are major players.<sup>75</sup> These firms employ a range of qualified professionals to manage their operations, creating a demand for specific roles:

221. **Pensions Administrators and Team Leads:** These professionals are the operational backbone, responsible for day-to-day administration, including contribution validation, processing benefit claims and redemptions, and ensuring compliance with NPRA regulations.<sup>45</sup>
222. **Fund Accountants and Portfolio Analysts:** With a focus on the financial health of the schemes, these individuals handle the accounting for pension funds, conduct investment analysis, and manage financial reporting.<sup>47</sup>

223. **Compliance Officers:** A critical role mandated by the regulatory framework, compliance officers ensure that the pension trust adheres to all aspects of the National Pensions Act and NPRA guidelines.<sup>45</sup>
224. **Business Development and Client Solutions Officers:** These sales-oriented roles focus on acquiring new corporate clients for Tier 2 and Tier 3 schemes and managing relationships with existing employers.<sup>47</sup>

Employment in this sub-sector requires a high level of formal education and professional certification. Job advertisements and the profiles of current professionals indicate that a bachelor's degree in finance, accounting, or economics is a minimum requirement, with professional qualifications such as the Chartered Financial Analyst (CFA) designation providing a significant advantage.<sup>50</sup>

## 4.2 Wealth Management and Financial Advisory

Catering to a more affluent clientele, a specialized wealth management and financial advisory sector exists to help individuals plan for a financially secure retirement. Firms like **deVere Ghana**, part of a global consultancy, and local financial service providers like **CedisPay** and **Old Mutual** offer bespoke retirement planning services.<sup>49</sup> These services are often targeted at international investors, expatriates, and high-net-worth Ghanaians who have the means to engage in private investment beyond the mandatory pension schemes.<sup>81</sup>

This niche market creates high-skilled employment opportunities for **Wealth Advisors, Financial Planners, and Investment Advisors**. The responsibilities of these roles include conducting one-on-one consultations to understand client goals, developing tailored investment strategies, advising on estate planning, and managing investment portfolios.<sup>49</sup> Success in this field requires not only a strong foundation in finance and investments but also excellent interpersonal and client relationship management skills. Professional certifications such as the Certified Financial Planner (CFP) are highly valued and often a prerequisite for senior advisory roles.<sup>50</sup>

## 4.3 Insurance Services for an Aging Market



The insurance industry in Ghana is gradually recognizing the aging demographic as a distinct market segment, leading to the development of specialized products and associated employment roles. Companies like **Old Mutual Ghana** offer a suite of products relevant to seniors, including the "Transition Plus Plan," a funeral insurance policy, and the "Old Mutual Retirement Salary," which provides a regular income post-retirement.<sup>80</sup> Other providers, such as

**Nationwide Medical Insurance**, offer complementary health plans like "MyHEALTH" that can top up the coverage provided by the National Health Insurance Scheme (NHIS), which is particularly valuable for older persons facing higher healthcare costs.<sup>83</sup> Recognizing the global mobility of some seniors, companies like

**Auras** provide specialized travel insurance for travelers up to 100 years old.<sup>84</sup>

The development, marketing, and sales of these products create formal employment for several key roles. **Financial Advisors**, particularly those operating under a bancassurance model where insurance products are sold through banking channels, are crucial for reaching customers.<sup>51</sup> Independent

**Insurance Brokers** also play a role in connecting clients with the most suitable senior-focused policies.<sup>53</sup> Behind the scenes,

**Product Development Managers** and **Actuaries** are employed to design these policies, assess risk, and set premiums. These positions typically require strong analytical, sales, and financial planning skills, supported by relevant academic degrees and industry certifications.

#### 4.4 The Informal Sector Gap

The sophisticated financial infrastructure described above stands in stark contrast to the reality faced by the vast majority of older Ghanaians. As established, over 90% of the elderly workforce operates in the informal sector, which by its nature excludes them from contributory pension schemes and makes private wealth management services irrelevant and unaffordable.<sup>1</sup> This creates a massive gap in income security.

While Ghana has a vibrant microfinance sector, its focus has traditionally been on providing credit for micro and small enterprises (MSEs), often targeting

entrepreneurial women, rather than on developing long-term savings or pension products for the elderly.<sup>55</sup> The World Bank and other development partners have highlighted the challenge of the "missed middle"—informal workers who are not poor enough to qualify for social assistance but lack access to formal social insurance.<sup>86</sup> This points to a significant, yet largely untapped, area for employment growth. There is a clear need for roles such as

**Microfinance Institution (MFI) Outreach Officers** and **Financial Product Designers** who can create and deliver accessible and affordable savings, insurance, and micro-pension products tailored to the unique needs and irregular cash flows of older informal workers. These roles would require skills in community mobilization, financial literacy training, and innovative, low-cost product design.

#### **4.5 A Microcosm of National Inequality**

The employment landscape within Ghana's financial services sector serves as a powerful microcosm of the nation's broader economic inequality. The sector is not a single, unified field but a sharply divided, dualistic system. One part of this system is highly professionalized, tightly regulated, and globally connected, creating well-compensated, formal-sector jobs for a skilled elite. This includes the pension fund managers, compliance officers, and wealth advisors who serve a small fraction of the population with formal employment or significant personal wealth.<sup>49</sup> These professionals require advanced qualifications like the CFA and manage sophisticated financial products.

The other part of this system is a vast void. The 90% of older workers who operate in the informal economy are almost entirely excluded from these services.<sup>13</sup> They lack the formal employment history for SSNIT and the disposable income for private wealth management. Reports from development partners like the World Bank confirm that extending social protection to the informal economy remains a formidable challenge, with a large "missed middle" caught between targeted poverty programs and formal insurance schemes.<sup>86</sup>

This duality demonstrates that growth in formal financial sector employment—such as the hiring of a new Pensions Administrator at a private trust—does little to address the fundamental income insecurity of the majority of Ghana's aging population. The

true, albeit more challenging, employment opportunity lies in bridging this chasm. It involves creating new, scalable models for financial inclusion that cater to the informal elderly. This would necessitate a different kind of workforce, composed of **Community Finance Mobilizers, Digital Wallet Educators, and Micro-pension Product Designers**. These roles would focus on building trust at the grassroots level, leveraging mobile technology for low-cost transactions, and designing products that align with the realities of an informal, survivalist economy.

## **Section 5: The Technology, Housing, and Ancillary Services Landscape**

Beyond the core domains of healthcare and finance, employment opportunities in the Gold Economy are emerging in ancillary sectors such as technology, housing, and community support services. However, this landscape is nascent and characterized by significant potential for growth rather than a large existing workforce.

### **5.1 The Nascent AgeTech Sector**

Unlike global trends where "AgeTech"—technology designed specifically for the needs of older adults—is a booming industry, the sector in Ghana is virtually non-existent.<sup>88</sup> A review of Ghana's startup ecosystem shows a focus on general Fintech (e.g., Zeepay), Healthtech (e.g., mPharma, Bisa Health), and E-commerce, with no prominent companies specializing in products or services for the elderly.<sup>57</sup>

The opportunity, therefore, lies in the adaptation of existing technologies to serve this demographic. For instance, mPharma's medication management and delivery platform could be tailored to help seniors manage chronic diseases, a major health challenge for this group.<sup>24</sup> Bisa Health's telemedicine application could be enhanced with accessibility features to reduce the mobility challenges older patients face when seeking medical consultations.<sup>92</sup> The growth of such adapted services would create potential future roles for

**UX/UI Designers** with a specialization in accessibility for older users, **Geriatric Telemedicine Coordinators** to manage virtual care programs, and **Digital Health**

**Marketers** skilled in reaching a senior audience.

A significant barrier to the growth of AgeTech is the digital divide. Studies show that many older informal workers have limited digital proficiency, relying primarily on basic mobile phone functions for communication rather than for complex digital services.<sup>58</sup> This reality creates a direct employment opportunity in

**Digital Literacy Training** for seniors. Such programs could be delivered by NGOs, community centers, or as part of government outreach, employing trainers with patience and skills in teaching basic digital tools.

## 5.2 Housing, Environment, and Transportation

The physical environment in Ghana presents considerable challenges for older persons, and the employment sector related to age-friendly infrastructure is underdeveloped. Research has noted that buildings and public spaces are rarely designed or constructed with the needs of older persons in mind, limiting their mobility and independence.<sup>1</sup> While a handful of private residential facilities and aged care homes exist, there is no large-scale senior housing industry comparable to those in developed nations.<sup>16</sup> The future development of this sector would create niche employment for

**Architects and Urban Planners** with expertise in universal design and accessibility standards, as well as an increased demand for **Managers of assisted living and retirement communities**.

In transportation, the most significant government initiative is the **Eban Elderly Welfare Card**. Launched in 2015, this card grants persons aged 65 and over a 50% rebate on fares on the Metro Mass Transit bus system and priority access at banks, hospitals, and other public services.<sup>8</sup> While this program does not create a large number of direct jobs, its administration requires a support structure within the MoGCSP and its partner agencies. This creates formal roles for

**Program Administrators** responsible for card issuance, managing the national database of beneficiaries, and coordinating with transport operators and other service providers to ensure the program's benefits are honored.

### 5.3 Social Engagement and Community Support

A vital, though often informal and volunteer-driven, component of the Gold Economy revolves around social engagement and community support. Recognizing that loneliness and social isolation are significant challenges for older adults, various NGOs and community groups have established programs to foster connection and activity. Organizations like the **Ark Lifestyle Foundation** and local chapters of **HelpAge Ghana** organize senior citizens' clubs, social events, and recreational activities.<sup>19</sup> This creates part-time and volunteer roles for

**Activity Coordinators, Event Planners, and Social Club Facilitators.**

The **Association of Ghana's Elders (AGE)** is another key player, running programs such as "AGE Circles" and "Virtual Hangouts" to build community among its members.<sup>68</sup> Some organizations, like the Ark Lifestyle Foundation, also facilitate intergenerational programs, creating exchange opportunities between older adults and youth.<sup>35</sup> This points to the emergence of niche roles for

**Intergenerational Program Coordinators**, who require skills in facilitating cross-generational dialogue and activities. Much of this work relies on the dedication of volunteers and the support of corporate sponsors, representing a significant area of non-salaried work within the Gold Economy.

### 5.4 The Rural Gold Economy: Supporting Aging Farmers

A critical and often overlooked segment of Ghana's Gold Economy is the rural agricultural sector, where a very high proportion of the economically active elderly are engaged.<sup>3</sup> These aging farmers are essential to the nation's food security, yet they face unique challenges related to declining physical capacity and limited access to modern agricultural practices.

Public and private **Agricultural Extension Services** exist to provide training, resources, and information on best practices to farmers.<sup>60</sup> The Ghana Cocoa Board

(COCOBOD), for example, provides public extension services to cocoa farmers.<sup>93</sup> However, these services are generally not tailored to the specific needs of an aging workforce. There is a clear and significant opportunity for employment in this area. A need exists for

**Agricultural Extension Officers** who possess not only agricultural expertise but also training in gerontology. Such professionals could adapt farming techniques to be less labor-intensive, introduce appropriate technologies, provide financial literacy relevant to late-life farming, and connect older farmers with health and social services. Furthermore, as the government moves towards e-Extension services delivered via ICTs, new roles will emerge for **Digital Extension Hub Coordinators**.<sup>61</sup> These coordinators will be essential in making digital advisory services accessible to older, often less tech-savvy farmers, for instance through Interactive Voice Response (IVR) systems or community-based digital centers.

## 5.5 The Predominantly Analog and Low-Tech Nature of the Economy

Despite the global discourse on digital transformation, Ghana's Gold Economy remains overwhelmingly analog and low-tech. This reality is a critical determinant of the current and near-future employment landscape. An extensive search for a domestic AgeTech sector reveals its virtual non-existence; the field is dominated by generalist Healthtech and Fintech startups, with no specialized focus on the elderly.<sup>57</sup> Global AgeTech leaders like Homage or Honor have no operational presence in Ghana.<sup>88</sup>

The most celebrated and impactful government "technology" interventions are, in fact, physical and analog. The Eban Card is a physical identity card that provides discounts on bus fares, and the flagship health initiative is the free biometric registration for the NHIS—a process of enrollment, not a digital service delivery platform.<sup>8</sup> The largest single group of economically active older persons is farmers, a demographic engaged in one of the least technologically penetrated sectors of the economy.<sup>3</sup> This is compounded by a well-documented digital divide that limits the ability of older workers to engage with complex digital platforms.<sup>58</sup>

Therefore, the most significant and scalable employment opportunities in the near term are not in developing sophisticated, direct-to-consumer apps. They are in

"human-centric" roles that bridge the gaps in the existing analog world. These are the **Community Health Nurses** who conduct home visits, the **trained Caregivers** who provide hands-on assistance, the **Social Workers** who connect families to services, and the **Agricultural Extension Officers** who demonstrate new techniques in the field. The most viable application of technology is not to replace these human roles but to augment them. The real opportunity lies in creating business-to-business (B2B) or business-to-government (B2G) solutions that make this human-centric work more efficient—for example, a simple case management platform for social workers, an accessible e-learning module for caregiver training programs, or an IVR-based advisory service that agricultural extension officers can deploy to farmers.

## **Part III: Synthesis and Strategic Recommendations**

### **Section 6: The Structure of the Gold Economy Workforce: Key Findings and Insights**

The nationwide assessment of Ghana's Gold Economy employment landscape reveals a sector defined by a profound structural duality, significant skills gaps, and a disconnect between policy ambition and economic reality. The workforce is not a monolithic entity but a bifurcated system with distinct characteristics, challenges, and opportunities.

#### **6.1 The Dominance of the Informal, Survivalist Workforce**

The most striking finding is that the vast majority of "employment" within the Gold Economy is not comprised of jobs serving the elderly, but rather jobs held *by* the elderly themselves. This workforce is overwhelmingly informal and driven by economic necessity. With over 90% of employed older persons operating in the informal sector—primarily as self-employed farmers and traders—their continued

labor is a direct response to the failure of formal social protection systems to provide adequate income security in old age.<sup>3</sup> The formal pension system excludes them, and social assistance programs are too limited in scope to serve as a universal safety net. Consequently, the largest segment of the Gold Economy workforce is engaged in survivalist, low-productivity activities, a reality that must be central to any policy or programmatic intervention.

## **6.2 The Formal-Informal Duality**

The employment landscape is sharply divided into two parallel worlds. The formal sector is small, concentrated in urban centers, and highly professionalized. It consists of roles like Pensions Administrators in private trusts, Wealth Advisors for affluent clients, and the handful of Geriatric Specialists in tertiary hospitals.<sup>10</sup> These jobs require advanced degrees and professional certifications and are part of a regulated, modern economy. In stark contrast, the informal sector is vast, largely unregulated, and characterized by low skills and precarity. This includes the multitude of informal caregivers, often hired directly by families with no formal contract or training, as well as the millions of older persons engaged in agriculture and petty trade.<sup>3</sup> This duality means that strategies designed for the formal sector will have little to no impact on the majority of the workforce.

## **6.3 Key Growth Areas vs. Critical Shortages**

The analysis identifies clear areas of organic employment growth, driven by market demand. The private home care sector is expanding rapidly, creating jobs for caregivers and nurses, and the administration of private pensions is a stable source of formal financial sector employment.<sup>15</sup> However, these growth areas exist alongside critical workforce shortages in foundational roles. The nation suffers from a severe lack of qualified geriatric medical specialists, nurses with certified geriatric training, and social workers dedicated to the elderly.<sup>4</sup> There is also a clear need for agricultural extension officers who are equipped with the skills to support an aging farming population. The current growth is market-driven and concentrated in lower-skilled



care roles, while the development of a professional, high-skilled workforce is lagging significantly.

#### **6.4 The Workforce Development Paradox**

A central challenge hindering the development of a quality Gold Economy workforce is a structural paradox in training and education. At one end, prestigious universities offer advanced, research-focused degrees in aging that are inaccessible and largely irrelevant to the needs of the frontline care market.<sup>41</sup> At the other end, a private vocational market offers caregiver certifications at prohibitively high costs, creating a barrier for entry into a field characterized by low wages.<sup>44</sup> This creates a "missing middle": a lack of affordable, accessible, and nationally accredited vocational training that can professionalize the caregiver role at scale. This paradox ensures that the largest segment of the care workforce remains informal and untrained, perpetuating a cycle of poor-quality care and precarious employment.

### **Section 7: Strategic Pathways for Growth and Development**

Based on the comprehensive assessment of Ghana's Gold Economy, the following strategic recommendations are proposed for key stakeholders to foster inclusive growth, professionalize the workforce, and bridge the gap between policy and practice.

#### **7.1 For Policymakers (MoGCSP, MoH, Ministry of Employment and Labour Relations)**

225. **Bridge the Policy-Implementation Gap:** The first priority must be to move from aspirational policies to legally mandated and adequately funded programs. This requires amending foundational legislation, such as the **Public Health Act (Act 851)**, to include specific, enforceable standards for geriatric care in all

healthcare facilities, as has been recommended by health systems researchers.<sup>4</sup> This would provide the legal basis for budget allocation, regulatory oversight, and quality control, transforming the National Ageing Policy from a statement of intent into an actionable plan.

226. **Professionalize the Care Workforce:** To address the critical skills gap and the workforce development paradox, the government should lead the creation of a **national, accredited vocational training curriculum for Geriatric Care Assistants** under the auspices of the National Vocational Training Institute (NVTI) or a similar body. This program should be affordable, accessible across all regions, and developed in partnership with industry stakeholders. Establishing a formal career pathway will not only improve the quality of care but also protect workers from exploitation and provide them with recognized qualifications and opportunities for advancement.
227. **Formalize the Informal Economy:** Policies must be designed to encourage the formalization of the informal care economy. This could include creating a simplified registration process for small home care agencies and independent caregivers, offering tax incentives for compliance, and linking formalization to access to social protection benefits, such as enrollment in the Tier 3 voluntary pension scheme.

## 7.2 For Educational and Vocational Institutions (UG, KNUST, Technical Universities, NVTI)

228. **Develop a "Missing Middle" Curriculum:** Higher education institutions, particularly technical universities and vocational institutes, should focus on developing the missing middle of the training landscape. This involves creating affordable and practical **diploma and certificate programs** in geriatric care, geriatric social work, and community health with a focus on aging. These programs should be designed to directly feed into the identified areas of workforce demand.
229. **Integrate Gerontology into Mainstream Curricula:** To build a foundational level of competency across the entire health and social care system, gerontology modules should be mainstreamed into all standard curricula for nursing, social work, community health, and even agricultural extension programs.<sup>4</sup> This would ensure that all graduating professionals have a basic understanding of the needs

of older persons.

230. **Partner with Industry:** Educational institutions must forge strong partnerships with hospitals, private home care agencies, NGOs, and residential facilities. These collaborations are essential to ensure that training curricula are practical, relevant, and responsive to the evolving needs of the labor market. Such partnerships should include structured internships, clinical placements, and guest lectures from industry practitioners.

### 7.3 For Development Partners and the Private Sector (World Bank, GIZ, Pension Trusts, Tech Hubs)

231. **Invest in Workforce Development:** Development partners and philanthropic organizations should prioritize funding for the creation and scaling of the affordable, accredited vocational training programs identified as the "missing middle." Supporting the development of a skilled caregiver workforce is one of the most impactful investments that can be made to improve the quality of life for older Ghanaians.
232. **Catalyze an Appropriate AgeTech Sector:** Rather than pursuing high-tech consumer apps, the private sector and tech hubs should focus on developing appropriate, low-cost technology solutions that support the human-centric workforce. Investment should be directed towards **B2B or B2G platforms**, such as case management software for social workers, accessible e-learning modules for caregiver training, or simple IVR-based health advisory systems that can be used by Community Health Nurses to reach rural populations.
233. **Develop Inclusive Financial Products:** Private pension trusts and microfinance institutions have a significant market opportunity to develop products for the informal elderly workforce. Development partners can de-risk this innovation by funding pilot projects for **micro-pension and micro-insurance products**. This would not only enhance the financial security of older persons but also create a new class of employment in community-based financial services, with roles for local agents in enrollment, premium collection, and financial literacy education.

### Works cited

234. INTRODUCTION The Government of Ghana, through the Ministry of

- Employment and Social Welfare in collaboration with its stakeholders - ohchr, accessed June 26, 2025, <https://www.ohchr.org/sites/default/files/Documents/Issues/OlderPersons/Submissions/Ghana.pdf>
235. NATIONAL AGEING POLICY - Ministry of Gender, Children and Social Protection, accessed June 26, 2025, <https://www.mogcsp.gov.gh/?mdocs-file=672>
236. THE ELDERLY IN GHANA, accessed June 26, 2025, [https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2010phc\\_the\\_elderly\\_in\\_Gh.pdf](https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2010phc_the_elderly_in_Gh.pdf)
237. (PDF) Legal and Ethical Issues in Geriatric Care in Ghana - ResearchGate, accessed June 26, 2025, [https://www.researchgate.net/publication/379605308\\_Legal\\_and\\_Ethical\\_Issues\\_in\\_Geriatric\\_Care\\_in\\_Ghana](https://www.researchgate.net/publication/379605308_Legal_and_Ethical_Issues_in_Geriatric_Care_in_Ghana)
238. Ghana National Social Protection Policy. | FAOLEX, accessed June 26, 2025, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC181187/>
239. MINISTRY OF GENDER, CHILDREN AND SOCIAL PROTECTION, accessed June 26, 2025, <https://mofep.gov.gh/sites/default/files/pbb-estimates/2019/2019-PBB-MOGCSP.pdf>
240. MINISTRY OF GENDER, CHILDREN AND SOCIAL PROTECTION (MOGCSP) ANNUAL PROGRESS REPORT 2017 - National Development Planning Commission, accessed June 26, 2025, [https://ndpc.gov.gh/media/Ministry\\_of\\_Gender\\_Children\\_and\\_Social\\_Protection/APR\\_2017.pdf](https://ndpc.gov.gh/media/Ministry_of_Gender_Children_and_Social_Protection/APR_2017.pdf)
241. Programmes and Interventions for the aged (GHANA) - Ministry of Gender, Children and Social Protection, accessed June 26, 2025, <https://www.mogcsp.gov.gh/projects/programmes-and-interventions-for-the-aged-ghana/>
242. Ministry of Labour, Jobs & Employment - national pensions regulatory authority (npra), accessed June 26, 2025, [https://melr.gov.gh/4/16/9/national-pensions-regulatory-authority-\(npra\)](https://melr.gov.gh/4/16/9/national-pensions-regulatory-authority-(npra))
243. Legal and Ethical Issues in Geriatric Care in Ghana - HeinOnline, accessed June 26, 2025, [https://heinonline.org/hol-cgi-bin/get\\_pdf.cgi?handle=hein.journals/jawpglob140&ion=5](https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/jawpglob140&ion=5)
244. REPUBLIC OF GHANA MINISTRY OF GENDER, CHILDREN AND SOCIAL PROTECTION NORMATIVE INPUT ON SOCIAL PROTECTION AND SOCIAL SECURITY De, accessed June 26, 2025, <https://social.un.org/ageing-working-group/documents/eleventh/Inputs%20MS/Ghana%20-%20Social%20P.pdf>
245. Ghana | ILO - social-protection.org, accessed June 26, 2025, <https://www.social-protection.org/gimi/ShowCountryProfile.action?iso=GH>
246. One-quarter of the elderly in Ghana are multidimensionally poor, accessed June 26, 2025, <https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/International%20Day>

[%20of%20Older%20Persons%20Press%20Release%20from%20Statistical%20Service.pdf](#)

247. Home Care Services | Pridemed, accessed June 26, 2025, <https://www.pridemedghana.org/home-care-services>
248. Imperial Nursing And Home-care Services - Home, accessed June 26, 2025, <https://www.imperialnursinggh.com/>
249. Directory - AGE Africa, accessed June 26, 2025, <https://ageafrica.com/directory/>
250. The Status of Older Adult Care in Contemporary Ghana: A Profile of Some Emerging Issues, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC8022694/>
251. www.helpage.org, accessed June 26, 2025, <https://www.helpage.org/global-network/africa/west-africa/#:~:text=HelpAge%20Ghana%20provides%20healthcare%2C%20shelter,communities%20to%20support%20older%20people.>
252. West Africa - HelpAge International, accessed June 26, 2025, <https://www.helpage.org/global-network/africa/west-africa/>
253. Aging in Ghana, accessed June 26, 2025, <https://gs.uwpress.org/content/wpgs/19/1/35.full-text.pdf>
254. Full article: A discourse on aging in contemporary Ghana, accessed June 26, 2025, <https://www.tandfonline.com/doi/full/10.1080/23311886.2022.2059139>
255. Population Ageing in Ghana: Research Gaps and the Way Forward - PMC - PubMed Central, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC3003962/>
256. Don't Work Ghanaians to Death: Why Raising the Retirement Age to 65 Is Misguided, accessed June 26, 2025, <https://cddgh.org/2025/05/20/dont-work-ghanaians-to-death-why-raising-the-retirement-age-to-65-is-misguided/>
257. Diseases of Ageing in Ghana - PMC, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC3645144/>
258. Informal Workers in Ghana: A Statistical Snapshot - WIEGO, accessed June 26, 2025, [https://www.wiego.org/wp-content/uploads/2020/03/WIEGO\\_Statistical\\_Brief\\_N21\\_0.pdf](https://www.wiego.org/wp-content/uploads/2020/03/WIEGO_Statistical_Brief_N21_0.pdf)
259. Unreported lives: the truth about older people's work | HelpAge International, accessed June 26, 2025, <https://www.helpage.org/silo/files/unreported-lives-the-truth-about-older-peoples-work.pdf>
260. GHANA COUNTRY REPORT ON THE IMPLEMENTATION OF THE MADRID INTERNATIONAL PLAN OF ACTION ON AGEING (MIPAA) - the United Nations, accessed June 26, 2025, [https://www.un.org/esa/socdev/ageing/documents/review\\_map/GHANA.pdf](https://www.un.org/esa/socdev/ageing/documents/review_map/GHANA.pdf)
261. Are You Leaving Retirement Benefits on the Table? Understanding Retirement Options in Ghana and the Importance of Tier 3 Pension Schemes - CedisPay, accessed June 26, 2025, <https://cedispay.com.gh/understanding-retirement>
262. Exploring the Need of Establishing Geriatric Care Centre in Ghana: The

- perspective of healthcare practitioners and Elderly Patients - ResearchGate, accessed June 26, 2025, [https://www.researchgate.net/publication/378448494\\_Exploring\\_the\\_Need\\_of\\_Establishing\\_Geriatric\\_Care\\_Centre\\_in\\_Ghana\\_The\\_perspective\\_of\\_healthcare\\_practitioners\\_and\\_Elderly\\_Patients/fulltext/65d9e6ecc3b52a1170f296cc/Exploring-the-Need-of-Establishing-Geriatric-Care-Centre-in-Ghana-The-perspective-of-healthcare-practitioners-and-Elderly-Patients.pdf](https://www.researchgate.net/publication/378448494_Exploring_the_Need_of_Establishing_Geriatric_Care_Centre_in_Ghana_The_perspective_of_healthcare_practitioners_and_Elderly_Patients/fulltext/65d9e6ecc3b52a1170f296cc/Exploring-the-Need-of-Establishing-Geriatric-Care-Centre-in-Ghana-The-perspective-of-healthcare-practitioners-and-Elderly-Patients.pdf)
263. About Us - The Ghana Registered Nurses and Midwives Association ..., accessed June 26, 2025, <https://ghananurses.org/about-us/>
  264. View of Assessment of Effective Geriatric Care Services Among Health Care Practitioners in Ashanti Region Protocol of a Cross-sectional Study, accessed June 26, 2025, <https://journal.knust.edu.gh/index.php?journal=just&page=article&op=view&path%5B%5D=1753&path%5B%5D=1216>
  265. Recruitment Ghana : nurse CVs | Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/cv-library-search/nurse>
  266. Job Geriatric Care Assistant - Ghana, accessed June 26, 2025, <https://www.ghanajob.com/job-geriatric-care-assistant>
  267. Job Vacancy For Caregiver - Accra - Current Jobs in Ghana, accessed June 26, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-caregiver/>
  268. Foundation - Arklifestyle Lounge, accessed June 26, 2025, <https://arklifestylelounge.com/foundation/>
  269. Senior Registered Community Health Nurse - Skills Provision, accessed June 26, 2025, <https://www.skills-provision.com/cv/senior-registered-community-health-nurse>
  270. JOB DESCRIPTION Position Title: COMMUNITY HEALTH NURSE Program - Dilico, accessed June 26, 2025, <https://www.dilico.com/wp-content/uploads/2021/07/Community-Health-Nurse.pdf>
  271. Community & Social Services Jobs in Ghana | Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/jobs/community-social-services>
  272. Ghana Association of Social Workers, accessed June 26, 2025, <https://www.ifsw.org/member-organisation/ghana/>
  273. Senior Citizens Volunteer Programs in Ghana - GoAbroad, accessed June 26, 2025, <https://www.goabroad.com/volunteer-abroad/search/ghana/seniors/volunteer-abroad-1>
  274. 2024/2025 ADMISSION IN PROGRESS: MA, MPhil & PhD IN AGEING STUDIES, accessed June 26, 2025, <https://cfas.ug.edu.gh/events/20242025-admission-progress-ma-mphil-phd-ageing-studies>
  275. Centre for Ageing Studies: Home, accessed June 26, 2025, <https://cfas.ug.edu.gh/>
  276. Accra Elderly Care Institute: Home, accessed June 26, 2025, <https://accraeldercareinstitute.com/>
  277. Caregiver Certification Training Program In Ghana - Clarion College, accessed



- June 26, 2025, <https://clariongr.com/course/caregiver-certification-training-program-in-ghana/>
278. pensions Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/pensions-jobs>
279. Job ad Ghana : Pensions Administration Team Lead - Ashanti - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-ghana/pensions-administration-team-lead-115573>
280. Recruitment Ghana : pension funds CVs - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/cv-library-search/pension%20funds>
281. Guidelines | NPRA - National Pensions Regulatory Authority, accessed June 26, 2025, <https://www.npra.gov.gh/regulations/guidelines/>
282. Retirement Planning - deVere Ghana, accessed June 26, 2025, <https://devere-ghana.com.gh/service/retirement-planning>
283. Job ad Ghana : Wealth Advisor - Accra, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-ghana/wealth-advisor-accra-187378>
284. Financial Advisor-Bancassurance at Old Mutual Ghana - Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/listings/financial-advisor-bancassurance-at-old-mutual-ghana-r8xejm-v2>
285. Current Old Mutual Jobs in Ghana - See Jobweb Ghana, accessed June 26, 2025, <https://jobwebghana.com/job-category/old-mutual-jobs-in-ghana/>
286. Old Mutual Ghana Careers, accessed June 26, 2025, <https://www.oldmutual.com.gh/careers/>
287. AXA - Global Healthcare: global health insurance, accessed June 26, 2025, <https://www.axaglobalhealthcare.com/en/>
288. Microfinance as a vehicle for promoting health and intersectoral action on Health: a case from Ghana | WHO | Regional Office for Africa, accessed June 26, 2025, <https://www.afro.who.int/publications/microfinance-vehicle-promoting-health-and-intersectoral-action-health-case-ghana>
289. Determinants of loan sizes in microfinance institutions: evidence from the Upper West Region of Ghana - ResearchGate, accessed June 26, 2025, [https://www.researchgate.net/publication/377759098\\_Determinants\\_of\\_loan\\_sizes\\_in\\_microfinance\\_institutions\\_evidence\\_from\\_the\\_Upper\\_West\\_Region\\_of\\_Ghana](https://www.researchgate.net/publication/377759098_Determinants_of_loan_sizes_in_microfinance_institutions_evidence_from_the_Upper_West_Region_of_Ghana)
290. 136 Top startups in Ghana for June 2025 - StartupBlink, accessed June 26, 2025, <https://www.startupblink.com/top-startups/ghana>
291. Digital Literacy in the Informal Economy of Ghana: Life-long Learning and Extending Working Lives of Older Persons in Post-Covid-19 Era - PMC - PubMed Central, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC11584428/>
292. Association of Ghana's Elders - Idealist, accessed June 26, 2025, <https://www.idealists.org/en/nonprofit/c704f2549e484b6592770757048162ef-association-of-ghanas-elders-accra-ghana>
293. Employing agricultural extension delivery services for improving cocoa bean

- quality, accessed June 26, 2025, <https://www.tandfonline.com/doi/pdf/10.1080/23311886.2024.2333431>
294. Agricultural e-Extension Services in Ghana - Farm Radio International, accessed June 26, 2025, <https://farmradio.org/wp-content/uploads/2022/05/Agriculture-e-extensions-strategy-digital.pdf>
295. Geriatric - Achimota Hospital, accessed June 26, 2025, <https://achimotahospital.gov.gh/departments/geriatric/>
296. Ghana Registered Nurses and Midwives Association (GRNMA), accessed June 26, 2025, <https://icn.ch/membership/our-members/ghana-registered-nurses-and-midwives-association-grnma>
297. Home - Nursing and Midwifery Council of Ghana, accessed June 26, 2025, <https://www.nmc.gov.gh/web/>
298. silverlinehealthcare Agency - Ghana |Home Care Agency, accessed June 26, 2025, <https://silverlinenursingandhomecare.com/>
299. Private Pay Home Care Services - Accra Homecare, accessed June 26, 2025, <https://www.accrahomecare.org/getting-started/private-pay-home-care-services>
300. About Us - Society for the Aged, accessed June 26, 2025, <https://societyfortheaged.org/about-us/>
301. AGE Africa, accessed June 26, 2025, <https://ageafrica.com/>
302. Centre for Ageing Studies | College of Humanities - University of Ghana, accessed June 26, 2025, <https://coh.ug.edu.gh/index.php/taxonomy/term/14>
303. KNUST Aging & HIV Outcomes Study - HigherGov, accessed June 26, 2025, <https://www.highergov.com/grant/R21TW012653/>
304. KNUST aging and human immunodeficiency virus outcomes—Study protocol | PLOS One, accessed June 26, 2025, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0307719>
305. Essential Skills for Elderly Caregivers| Accra, Ghana - Trainingcred Institute, accessed June 26, 2025, <https://trainingcred.com/course-schedules/compassion-in-action-essential-skills-for-elderly-caregivers/accra/>
306. Job Caregiver - Ghana - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-caregiver>
307. Employment - national pensions regulatory authority (npra) - Ministry of Labour, Jobs, accessed June 26, 2025, [https://www.melr.gov.gh/4/4/16/9/national-pensions-regulatory-authority-\(npra\)](https://www.melr.gov.gh/4/4/16/9/national-pensions-regulatory-authority-(npra))
308. Axis Pension Plan, accessed June 26, 2025, <https://axispension.com/axis-pension-plan/>
309. Mvest Personal Pension Plan - Old Mutual Ghana, accessed June 26, 2025, <https://www.oldmutual.com.gh/personal/mvest-personal-pension-scheme/>
310. Pension and Provident Fund Management | Stanbic Bank Ghana, accessed June 26, 2025, <https://www.stanbicbank.com.gh/gh/business/products-and-services/grow-your-money/sims-accounts/pension-and-provident-fund-management>



311. Job Vacancy For Senior Pensions Funds Officer - Current Jobs in ..., accessed June 26, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-senior-pensions-funds-officer/>
312. Investing for Retirement - CedisPay, accessed June 26, 2025, <https://cedispay.com.gh/investing-for-retirement>
313. Old Mutual Ghana | Insurance, Savings and Investment Solutions, accessed June 26, 2025, <https://www.oldmutual.com.gh/>
314. About Us | deVere Ghana, accessed June 26, 2025, <https://www.devere-ghana-com-gh.azurewebsites.net/about-us>
315. Career Opportunities - Creative Planning, accessed June 26, 2025, <https://creativeplanning.com/careers/>
316. MyHEALTH Complementary - Nationwide Medical Insurance, accessed June 26, 2025, <https://nationwidemh.com/products/my-health-complementary/>
317. Cheap Seniors Travel Insurance in Ghana — Cost from \$1.50 | Auras, accessed June 26, 2025, <https://auras.insure/en-GH/seniors-travel-insurance/>
318. Microfinance institutions and micro & small enterprises in Ghana - International Growth Centre, accessed June 26, 2025, <https://www.theigc.org/sites/default/files/2017/03/Trombetta-et-al-2017-Final-report.pdf>
319. SOCIAL PROTECTION FOR THE INFORMAL ECONOMY - The World Bank, accessed June 26, 2025, <https://thedocs.worldbank.org/en/doc/882c0c1238394fef0d3a308d9d47946f-0380022024/related/3-5-Informal-Sector-Social-Insurance-ASP-Rome-Course.pdf>
320. Social Protection and the Informal Sector in Developing Countries: Challenges and Opportunities - World Bank Documents and Reports, accessed June 26, 2025, <https://documents.worldbank.org/curated/en/464851468739448448/pdf/multi0page.pdf>
321. 69 Top Agetech Startups and Companies to Watch in 2023 - Omdena, accessed June 26, 2025, <https://www.omdena.com/blog/top-agetech-startups-and-companies>
322. These Are the 5 Agetech Startups You Should Watch in 2022 - TheGerontechnologist, accessed June 26, 2025, <https://thegerontechnologist.com/these-are-the-5-agetech-startups-you-should-watch-in-2022/>
323. Startup Directory - AgeTech Collaborative™ from AARP, accessed June 26, 2025, <https://home.agetechcollaborative.org/startup/directory>
324. Best Tech Companies and Startups in Ghana 2025 - Wellfound, accessed June 26, 2025, <https://wellfound.com/startups/location/ghana>
325. Top health tech startups in Ghana - GhScientific, accessed June 26, 2025, <https://ghscientific.com/top-health-tech-startups-in-ghana/>
326. Cocoa farmers' perspective on the quality of public and private agricultural

extension delivery in Southern Ghana - PMC - PubMed Central, accessed June 26, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC11107110/>

# **Ghana's Green Economy: A Nationwide Investigation of Employment Opportunities**

## **Part I: The Strategic Context for Ghana's Green Economy**

### **Section 1: The Policy and Investment Imperative: Ambition Meets Reality**

Ghana's transition towards a green economy is underpinned by a robust framework of national policies and international partnerships. These strategic documents articulate an ambitious vision for sustainable development, positioning environmental stewardship and climate action as central pillars of the nation's future economic growth. This policy landscape not only sets clear targets for decarbonization and resilience but also explicitly forecasts the creation of hundreds of thousands of new jobs, establishing the foundational demand for a skilled green workforce. However, the translation of these ambitious policies into widespread employment is tempered by significant financial and implementation challenges, creating a dynamic and complex market for green jobs.

#### **1.1 Foundational Policies and Job Creation Targets**

The Government of Ghana has codified its green ambitions in several key strategic documents, which collectively signal a long-term commitment to transforming the national economy. These policies provide the overarching direction and rationale for investment and workforce development in the green sector.

327. **Ghana's Energy Transition and Investment Plan (ETIP):** Launched in 2023, the ETIP is arguably the most significant driver of green job potential in the country. It presents a detailed pathway for Ghana to achieve net-zero energy-related carbon emissions by 2060, an acceleration from the previous 2070 target.<sup>1</sup> The plan is built on staggering projections: a 15-fold increase in power demand by 2060, with solar photovoltaic (PV) systems expected to meet the majority of this demand, reaching an installed capacity of 150 GW. The transport sector is also slated for transformation, with a target of 90% electric vehicle penetration by 2050.<sup>1</sup> Critically, the ETIP quantifies the employment impact of this transition, forecasting the creation of **400,000 net new jobs** by 2060, driven by rising energy investments and associated economic growth.<sup>1</sup> By framing the transition as a USD 550 billion investment opportunity, the ETIP sends a powerful signal to both domestic and international markets about the scale of future labor demand in the power, transport, and clean technology sectors.<sup>2</sup>
328. **National Green Jobs Strategy (NGJS):** Developed by the Ministry of Employment and Labour Relations, the NGJS (2021-2025) provides a more direct framework for workforce development. Its ambition is to create over **one million green jobs by 2030**.<sup>4</sup> The strategy is multi-faceted, aiming to harmonize green interventions through effective policy coordination, develop employable skills with a particular focus on youth and women, promote sustainable green enterprises, and mobilize financing.<sup>5</sup> The NGJS identifies several priority sectors with high potential for green job creation: renewable energy, sustainable agriculture, forestry, waste management and recycling, construction, and ecotourism.<sup>6</sup> This strategy is the government's primary tool for ensuring that the economic transition is not only green but also just and inclusive, directly addressing the country's youth unemployment challenges.<sup>7</sup>
329. **National Climate Change Policy (NCCP):** The NCCP, adopted in 2013, sets the stage for the country's integrated response to climate change, with a vision to "ensure a climate-resilient and climate-compatible economy while achieving sustainable development".<sup>10</sup> It prioritizes both adaptation and mitigation across five key areas: Agriculture and Food Security; Disaster Preparedness and Response; Natural Resource Management; Equitable Social Development; and Energy, Industrial, and Infrastructural Development.<sup>12</sup> By focusing on these areas, the NCCP directly informs the types of skills and occupations needed, from climate-resilient agriculture specialists to engineers capable of building climate-proof infrastructure.<sup>14</sup>

330. **Renewable Energy Master Plan (REMP):** The 2019 REMP provides specific, medium-term targets that complement the ETIP's long-term vision. It aims to increase the proportion of renewable energy in the national generation mix to 10% by 2030, which translates to a target of 1,363.63 MW of installed grid-connected renewable capacity (excluding large hydro).<sup>15</sup> The plan also calls for providing renewable energy-based electrification to 1,000 off-grid communities and promoting local content and manufacturing in the renewable energy industry, directly signaling opportunities for technicians, engineers, and manufacturing workers.<sup>17</sup>

**Table 1: Ghana's Core Green Economy Policies and Job Creation Targets**

| Policy/Strategy Name                         | Lead Ministry/Agency                             | Key Objectives   | Stated Job Creation Target   | Key Priority Sectors for Employment  | Key International Partners         |
|--|--|--|------------------------------|--|------------------------------------|
| Energy Transition and Investment Plan (ETIP) | Ministry of Energy                               | Achieve net-zero energy emissions by 2060; deploy 150 GW solar PV; 90% EV penetration by 2050. | 400,000 net new jobs by 2060 | Renewable Energy, Clean Transport, Green Technology, Green Manufacturing                         | SEforALL, Bloomberg Philanthropies |
| National Green Jobs Strategy (NGJS)          | Ministry of Employment and Labour Relations      | Coordinate green interventions ; develop skills for youth/women; promote green enterprises.    | Over 1 million jobs by 2030  | Renewable Energy, Sustainable Agriculture, Forestry, Waste Management , Ecotourism, Construction | ILO, SNV, EU, UNDP                 |
| National Climate Change Policy (NCCP)        | Ministry of Environment, Science, Technology and | Ensure a climate-resilient and climate-compatible  | Not explicitly quantified    | Agriculture, Energy, Natural Resource Management   | UNDP, UNEP                         |

|                                     |                    |  |                           |  |                 |
|-------------------------------------|--------------------|--|---------------------------|--|-----------------|
|                                     | Innovation (MESTI) | economy through adaptation and mitigation.   |                           | , Infrastructure, Disaster Response                          |                 |
| Renewable Energy Master Plan (REMP) | Energy Commission  | Achieve 10% renewable energy in power mix by 2030; promote local content and off-grid solutions. | Not explicitly quantified | Renewable Energy (Solar, Wind, Biomass), Green Manufacturing | GIZ, World Bank |

## 1.2 The Role of International Development Partners

The momentum behind Ghana's green transition is significantly amplified by the financial and technical support of international development partners. These organizations are not merely funders; they are active participants in shaping policy, implementing projects, and directly creating high-skill employment opportunities. The prevalence of their involvement suggests that a significant portion of the formal green economy is currently driven by donor-funded initiatives.

- United Nations System (UNDP, UN-PAGE, UNCDF):** The UN is a pivotal actor. The Partnership for Action on Green Economy (PAGE), a UN inter-agency program, has been instrumental in supporting Ghana's efforts to mainstream green economy objectives and the Sustainable Development Goals (SDGs) into national and local development plans.<sup>18</sup> PAGE also supported the development of the National Green Jobs Strategy and a skills for green jobs study, laying the analytical groundwork for workforce development.<sup>19</sup> A flagship initiative is the "Boosting Green Employment and Enterprise Opportunities in Ghana (GrEEEn)" project, a four-year, €20.6 million action co-funded by the European Union and implemented by the UN Capital Development Fund (UNCDF) and SNV Netherlands Development Organisation. This project directly targets the creation of economic and employment opportunities for youth, women, and returning migrants in the Ashanti and Western regions by supporting green businesses in

areas like plastic waste recycling and clean cookstove production.<sup>5</sup>

- **German Development Cooperation (GIZ):** GIZ is one of the most active development partners in Ghana's green sector. Its influence is visible across multiple domains. GIZ funds and implements projects focused on renewable energy and energy efficiency, circular economy capacity building, and sustainable economic development.<sup>22</sup> Many senior-level technical advisory positions advertised on platforms like Jobberman are with GIZ, covering areas from sustainability in agricultural value chains to energy and climate policy.<sup>26</sup> Furthermore, GIZ is a key funder of the Ghana Climate Innovation Centre (GCIC), which runs green business competitions and provides grants to MSMEs, directly creating jobs and fostering entrepreneurship.<sup>4</sup> GIZ also offers structured, paid trainee programs, providing a crucial entry point for young professionals into the renewable energy sector.<sup>29</sup>
- **World Bank Group (WBG):** The World Bank provides large-scale financial and strategic support. Its five-year Country Partnership Framework (CPF) for 2022-2026 allocates \$4.5 billion to support Ghana's development, with "Promoting Resilient and Sustainable Development" as one of its three core pillars.<sup>30</sup> This high-level commitment translates into concrete employment opportunities through procurement for large-scale projects. For example, the World Bank finances the Ghana Landscape Restoration and Small-Scale Mining Project (GLRSSMP) and the Africa Environmental Health and Pollution Management Programme (AEHPMP), which issue tenders for consulting services and construction works in areas like environmental management and e-waste facility construction.<sup>32</sup> These tenders create demand for senior-level individual consultants with extensive experience and for construction firms with specialized capabilities.
- **United States Agency for International Development (USAID):** USAID's interventions are particularly crucial in the sustainable agriculture and food security sectors, especially in Northern Ghana. Through its Feed the Future (FtF) umbrella, projects like the Agriculture Technology Transfer (ATT) and Mobilizing Finance in Agriculture (MFA) are vital.<sup>35</sup> The ATT project focuses on improving the seed and fertilizer sectors, while the MFA activity aims to unlock commercial financing for agribusinesses, with a growing emphasis on climate-smart models.<sup>35</sup> These programs create jobs for agricultural extension officers, finance specialists, and project managers, and provide critical support to smallholder farmers.

The deep involvement of these partners creates a distinct dynamic in the job market.

While they provide essential capital and expertise that fuel the green economy, this reliance also introduces a level of vulnerability. The potential withdrawal or re-prioritization of aid, as has been discussed in relation to USAID, could significantly disrupt key sectors and lead to job losses, underscoring the need for Ghana to cultivate more robust domestic drivers for its green transition.<sup>36</sup>

### 1.3 Systemic Challenges and Constraints

Despite the strong policy framework and significant international support, the growth of green employment in Ghana is constrained by several deep-rooted, systemic challenges. These barriers prevent the full realization of the country's green economy potential and shape the nature of the jobs that are currently available.

- **Financial Bottlenecks:** The most frequently cited obstacle across multiple sectors is the lack of adequate and accessible financing. Research indicates that limited access to funding is the main impediment to developing Ghana's renewable energy resources.<sup>41</sup> This challenge is exacerbated by the country's high public debt, which limits the government's fiscal space for large-scale public investment in green infrastructure.<sup>41</sup> For the private sector, high interest rates and a lack of access to credit are major hurdles for businesses, including those in the green sector.<sup>43</sup> This financial gap slows the implementation of capital-intensive projects in renewable energy, waste management, and sustainable infrastructure, thereby delaying the creation of the thousands of construction, operational, and maintenance jobs associated with them. This results in a labor market characterized by a "policy-to-paycheck" gap, where the grand employment ambitions of national strategies are not fully matched by the flow of capital required to create those jobs on the ground. The market becomes polarized between a small number of high-skill, donor-funded consultancy roles focused on solving these very policy and finance problems, and a large number of more precarious, low-wage, or informal roles at the grassroots level, with a "missing middle" of stable, skilled technical employment.
- **Implementation and Data Gaps:** A critical review of Ghana's green industry efforts reveals a significant gap between policy intent and effective implementation. A UN-PAGE assessment found that existing policies have largely failed to decouple industrial output from resource use due to a lack of specific,



time-bound, and sector-focused targets.<sup>44</sup> This failure is compounded by a severe deficiency in timely and comprehensive data on industrial activity, resource consumption (energy, water, materials), and environmental impacts. This data vacuum makes it nearly impossible to identify the most promising areas for intervention, measure the success of greening initiatives, or design evidence-based policies, effectively hindering strategic workforce planning.<sup>44</sup>

- **The Informal Sector Disconnect:** Ghana's labor market is dominated by the informal economy, which employs an estimated 60% of the workforce and is characterized by high rates of underemployment (over 50%).<sup>45</sup> This presents a major challenge for a top-down, policy-driven green transition. Many green activities, such as waste collection and recycling, are already being carried out by a vast informal workforce, including an estimated 7,800 waste pickers in the Greater Accra Region alone.<sup>45</sup> However, these workers often operate in precarious conditions with low earnings and no social protection.<sup>45</sup> Similarly, market women, who are central to the food system, are already engaged in green practices like waste segregation and reuse but are largely excluded from formal green economy planning.<sup>48</sup> Policies and programs often struggle to effectively engage, support, and formalize this segment of the workforce, risking a transition that is not inclusive and fails to leverage the existing skills and knowledge of these critical actors.

## **Section 2: The Institutional Architecture: Regulators, Enablers, and Employers**

The formal structure of Ghana's green economy is anchored by a trio of key government agencies. The Environmental Protection Agency (EPA), the Energy Commission, and the Forestry Commission (FC) form the institutional backbone, acting as the primary regulators, enablers of private sector activity, and significant direct employers of green professionals. Their mandates, programs, and procurement activities define the landscape for formal green employment and are increasingly evolving from traditional regulation towards active market development.

### **2.1 Environmental Protection Agency (EPA)**

Established under the Environmental Protection Agency Act, 1994 (Act 490), the EPA is the lead public body mandated to oversee the implementation of the National Environment Policy.<sup>49</sup> Its mission is to co-manage, protect, and enhance the country's environment through an integrated system of planning and management.<sup>50</sup>

1. **Functions as Regulator and Employer:** The EPA's core regulatory functions are a direct source of green job demand. It is responsible for conducting Environmental and Social Impact Assessments (ESIAs) for all major development projects, issuing environmental permits, and monitoring industrial and commercial activities for compliance with environmental laws.<sup>51</sup> This creates a steady demand for environmental consultants, social impact specialists, and auditors in the private sector, as well as for Environmental Officers and scientists within the agency itself. The EPA is currently in the process of being upgraded to an "Authority," which will grant it prosecutorial powers to enforce environmental law more effectively, a move that will likely increase the demand for legal and enforcement expertise.<sup>51</sup>
2. **Key Initiatives and Market Development:** The EPA has evolved beyond a purely regulatory role to become a central player in developing new green markets. It is the national focal point for the implementation of Article 6 of the Paris Agreement, managing Ghana's international carbon market framework.<sup>52</sup> As of 2024, the agency was overseeing a pipeline of 70 carbon market projects with a potential of 402 million tonnes of CO<sub>2</sub> equivalent credits, covering areas like sustainable rice cultivation and waste-to-compost.<sup>52</sup> This role requires expertise in carbon accounting, project validation, and international climate finance. Furthermore, the EPA serves as the implementing agency for major donor-funded projects, such as the World Bank's Africa Environmental Health and Pollution Management Programme (AEHPMP), which includes the construction of e-waste collection and dismantling centers, and the Ghana Landscape Restoration and Small-Scale Mining Project (GLRSSMP).<sup>33</sup> Through these projects, the EPA issues procurement notices for large-scale construction works and high-level consultancy services, directly fueling the green job market.

## 2.2 Energy Commission

The Energy Commission was established by the Energy Commission Act, 1997 (Act

541) with a mandate to regulate and manage the development and utilization of Ghana's energy resources.<sup>53</sup> It is the primary body responsible for ensuring an affordable, reliable, and efficient energy supply while promoting environmental quality and public safety.<sup>54</sup>

1. **Functions as Regulator and Employer:** The Commission's regulatory and licensing functions are extensive, covering conventional electricity, renewable energy, natural gas, and energy efficiency.<sup>54</sup> It issues licenses for power generation, develops regulatory instruments like codes and legislative instruments, and conducts inspections and enforcement. This creates a direct need within the Commission for engineers, economists, lawyers, and regulatory specialists. In the private sector, it drives demand for compliance officers, energy auditors, and licensing consultants who help companies navigate the regulatory landscape.
2. **Key Initiatives and Market Development:** The Energy Commission is a key enabler of the green transition through its flagship programs. The "Drive Electric" initiative promotes the adoption of electric vehicles, while the "Ecofridges" program and the "SHS Renewable Energy Challenge" aim to boost energy efficiency and renewable energy awareness, respectively.<sup>54</sup> A landmark development is the establishment of the **Energy Academy**, housed in West Africa's first Nearly Zero Energy Building (NZEB), which was constructed with support from GIZ.<sup>55</sup> Launched in late 2024, the Academy offers a wide range of specialized, internationally recognized courses on topics from renewable energy technologies to energy policy and climate change, signaling a major state-led effort to build the human capital required for the energy transition.<sup>54</sup> This initiative will create jobs for trainers, curriculum developers, and administrative staff, and will be a critical pipeline for skilled professionals in the energy sector.

## 2.3 Forestry Commission (FC)

Re-established by the Forestry Commission Act, 1999 (Act 571), the FC is responsible for the regulation, management, and sustainable development of Ghana's forest and wildlife resources.<sup>57</sup> Its vision is to leave future generations with a richer forestry and wildlife endowment.<sup>57</sup>

- **Functions as Regulator and Employer:** The FC is a major employer of green professionals through its core divisions: the Forest Services Division (FSD), the Wildlife Division (WD), the Timber Industry Development Division (TIDD), the Resource Management Support Centre (RMSC), and the Forestry Commission Training Centre (FCTC).<sup>59</sup> These divisions employ a wide range of specialists, including Foresters, Range Managers, Wildlife Officers, GIS specialists, and wood scientists. The FC's regulatory functions, such as managing forest reserves, regulating timber harvesting, and issuing permits, create demand for professionals in sustainable forest management, compliance, and monitoring within both the public and private sectors (e.g., timber companies).
- **Key Initiatives and Market Development:** The Forestry Commission is a key partner in Ghana's efforts to leverage its natural resources for climate finance. It is a central actor in the Ghana Cocoa Forest REDD+ (Reducing Emissions from Deforestation and Forest Degradation) Programme, which has successfully sold forest-carbon credits to the World Bank's Carbon Fund, unlocking up to US\$50 million in financing.<sup>61</sup> This positions the FC at the forefront of nature-based solutions and creates a demand for experts in carbon sequestration measurement, reporting, and verification (MRV), community forestry, and agroforestry. The Commission also undertakes its own development activities, such as establishing forest plantations to restore degraded areas, which creates direct employment in nursery management, planting, and long-term forest stewardship.<sup>57</sup>

The evolution of these three agencies from purely regulatory bodies into active market developers is a significant trend. Their direct involvement in carbon markets, human capital development, and large-scale, donor-funded restoration projects indicates a growing sophistication in Ghana's institutional approach to the green economy. This shift creates more complex and higher-skilled job opportunities within the public sector and necessitates closer collaboration between the agencies. Major initiatives like the GLRSSMP and the national carbon market strategy require the integrated expertise of the EPA, FC, and Energy Commission, fostering a demand for professionals who possess cross-sectoral knowledge of environmental regulation, energy policy, and land-use management.

## Part II: Occupational and Sectoral Market Analysis

## Section 3: Renewable Energy Systems

### A. Sector Overview and Key Drivers

The Renewable Energy Systems sector is the flagship of Ghana's green economy transition, commanding the most significant policy attention and investment potential. It is driven by the ambitious national goals outlined in the Energy Transition and Investment Plan (ETIP), which targets a staggering 150 GW of solar PV capacity and a net-zero energy system by 2060.<sup>1</sup> This long-term vision is supported by the medium-term Renewable Energy Master Plan (REMP), which aims for 1,363.63 MW of grid-connected renewable capacity by 2030.<sup>15</sup> The primary drivers for this push are the urgent need for enhanced energy security, the high and volatile cost of imported fossil fuels, and the vast untapped potential of Ghana's natural resources, particularly solar irradiation in the northern savannah and wind and wave resources along the coast.<sup>23</sup> The sector attracts substantial interest from international partners like GIZ and the World Bank, as well as a growing ecosystem of private companies, making it a dynamic and expanding source of green employment.<sup>2</sup>

### B. Occupational Map

The employment landscape in the renewable energy sector is diverse, spanning high-level policy and finance roles, mid-level engineering and management positions, and a broad base of technical and manual labor.

- **Formal/Salaried Roles:**
  - **Energy Advisor / Technical Advisor (Sustainability/Climate):** These are senior-level positions, predominantly found within international development organizations like GIZ, and are concentrated in Accra. The role involves

providing high-level technical advice to government partners (such as the Ministry of Energy), developing and implementing financing mechanisms for renewable energy (RE) and energy efficiency (EE), and shaping national strategy.<sup>26</sup> The demand for these roles is steady, driven by the continuous pipeline of donor-funded climate and energy programs.

- **Renewable Energy Engineer / Solar Energy Engineer:** This is a core professional role within the sector, found in private engineering firms, renewable energy companies (e.g., Translight Solar, SunPower Innovations), and public agencies like the Energy Commission and Bui Power Authority.<sup>65</sup> Responsibilities range from system design and simulation to project management, procurement, and technical oversight of installation teams. Analysis of CVs on platforms like Ghanajob.com indicates a healthy pool of qualified professionals with degrees from local institutions like KNUST and UCC, as well as international universities, suggesting a competitive market for these roles.<sup>67</sup>
- **Officer, Renewable Energy Efficiency:** This is a public sector role within the Energy Commission. Incumbents are responsible for implementing regulatory frameworks, managing licensing for renewable energy projects, and supporting the roll-out of government programs like the SHS Renewable Energy Challenge.<sup>70</sup> These positions are typically filled through the Public Service Commission and offer stable, formal employment.
- **Project Manager (Solar/Renewables):** This role is crucial for the execution of renewable energy projects and is found in both private sector firms (e.g., Fohadrick Engineering) and on donor-funded project teams.<sup>69</sup> Project Managers are responsible for budgeting, scheduling, coordinating with contractors and suppliers, and ensuring projects are delivered on time and to specification. This role requires a blend of strong technical understanding and proven management capabilities.
- **Contract/Freelance/Gig Work:**
  - **Solar PV Installer / Technician:** This represents the largest potential for widespread job creation within the sector, particularly as the deployment of residential, commercial, and utility-scale solar projects accelerates. These roles are typically contract-based, tied to the duration of a specific installation project. They involve the physical mounting of panels, wiring, and system commissioning. Evidence from platforms like Jiji shows these roles are available, though often with modest pay, highlighting the gig-based nature of this work.<sup>72</sup> This is a critical entry-point for many individuals seeking to join

the renewable energy workforce.

- **Internships/Apprenticeships:**

- **GlZ Paid Trainee Program:** This structured, 17-month program is a significant and highly valuable pathway for young professionals. It offers fully paid, hands-on experience working on GlZ's "Renewable Energies and Energy Efficiency for Climate Protection" project in Ghana, an international organization, and the German Federal Ministry for Economic Cooperation and Development (BMZ).<sup>29</sup> It provides a direct bridge from academic training to a professional career in development cooperation and energy policy.
- **National Service Personnel:** Many graduates in engineering and environmental science begin their careers through the mandatory one-year national service, with placements in key agencies like the Energy Commission or with private renewable energy companies. This provides essential initial work experience.

## C. Geographic Distribution and Location Intelligence

Employment opportunities in the renewable energy sector exhibit clear geographic concentrations based on function.

1. **Policy, Finance, and Management Hub:** Greater Accra is the undisputed nerve center for the sector. It hosts the relevant government ministries (Energy, Environment), regulatory bodies (Energy Commission, EPA), the headquarters of major development partners (GlZ, UNDP, World Bank), and the corporate offices of most large renewable energy companies and consulting firms. Consequently, the majority of high-level advisory, management, finance, and policy roles are located here.<sup>26</sup>
2. **Project Implementation Hotspots:** The physical deployment of renewable energy projects creates job clusters in specific regions based on resource availability.
  - **Northern Ghana (Northern, Savannah, Upper East, and Upper West Regions):** This area is a major focus for solar energy development, particularly off-grid and mini-grid projects aimed at achieving universal energy access. Projects supported by Power Africa and the REMP are concentrated here, creating demand for solar installers, technicians, and



community engagement specialists.<sup>17</sup> Tamale serves as a key regional hub for these activities.

- **Coastal Zone (Greater Accra, Central, Volta, and Western Regions):** Ghana's coastline, particularly the areas from Tema to Aflao and around Ada and Keta, has been identified as having promising potential for both utility-scale wind and wave energy projects. As these technologies move from pilot to commercial phase, they will create specialized jobs in marine engineering, turbine installation, and coastal resource management.<sup>63</sup>
  - **Bono Region:** The area around the Bui Dam has become a major hub for solar power, home to the Bui Power Authority's 250 MWp of installed solar capacity and Africa's largest floating solar farm. This creates sustained demand for operational and maintenance personnel in the region.<sup>16</sup>
3. **Remote and Digital Work:** While hands-on installation and maintenance roles require a physical presence, there is growing feasibility for remote work in areas such as remote monitoring of power plants, GIS-based site selection analysis, data analytics for energy consumption patterns, and virtual consulting services. This allows Ghanaian professionals with the right digital skills to serve a national or even international market from various locations.

## D. Skills and Competency Profile

Success in the renewable energy sector requires a combination of specific technical expertise and strong interpersonal capabilities.

- **Technical Skills:**
  1. **Core Engineering & Design:** Proficiency in photovoltaic (PV) system design (both off-grid and grid-connected), load assessment, array sizing, and component selection (inverters, batteries) is fundamental.<sup>68</sup>
  2. **Installation & Maintenance:** Practical skills in electrical wiring, system commissioning, troubleshooting, and preventive maintenance are essential for technicians.<sup>29</sup>
  3. **Analytical & Software Skills:** Competence in using project analysis software like RETScreen for financial and risk assessment, and design/simulation tools like AUTOCAD and MATLAB, is increasingly important for engineers and analysts.<sup>68</sup>



4. **Grid Integration:** A sophisticated understanding of how to integrate variable renewable energy sources into the national grid without compromising stability is a high-level skill needed by utilities and regulators.<sup>29</sup>
5. **Energy Auditing:** The ability to conduct energy audits to assess consumption patterns and identify opportunities for efficiency gains is a related and valuable skill.<sup>27</sup>
- **Interpersonal and Management Capabilities:**
  - **Project Management:** The ability to manage budgets, timelines, procurement, and teams is a core requirement for any role beyond the technician level.<sup>26</sup>
  - **Stakeholder Engagement & Communication:** Strong communication skills are vital for engaging with diverse stakeholders, from government officials and private investors to rural community members for off-grid projects.<sup>26</sup>
  - **Financial Acumen:** Understanding project finance, climate finance mechanisms, and developing business cases for renewable energy investments is a critical skill for senior and advisory roles.<sup>26</sup>
  - **Strategic Thinking & Problem-Solving:** The ability to analyze complex energy challenges and develop innovative, practical solutions is highly valued.<sup>26</sup>

## E. Career and Educational Pathways

Clear educational and professional development pathways are emerging for those seeking a career in Ghana's renewable energy sector.

4. **Formal Education:** A bachelor's degree is typically the minimum requirement for engineering and management roles. Relevant degrees include BSc or MSc in Renewable Energy Engineering, Mechanical Engineering, Electrical Engineering, Energy Systems Engineering, or Environmental Science. Key institutions offering these programs include Kwame Nkrumah University of Science and Technology (KNUST), which hosts The Energy Centre (TEC) and the College of Engineering<sup>67</sup>; the University of Ghana, through its Institute for Environment and Sanitation Studies (IESS) and Centre for Climate Change and Sustainability Studies (C3SS)<sup>75</sup>; and the University of Energy and Natural Resources (UENR).<sup>77</sup>
5. **Professional Certifications and Training:** To bridge the gap between academic

knowledge and practical industry needs, several certification and training programs are available. The Energy Commission's new **Energy Academy** offers a range of specialized courses in solar energy, renewable energy technologies, and energy policy.<sup>54</sup> The

**ECG Training Centre** provides hands-on, tiered courses from foundational to advanced Solar PV systems.<sup>78</sup> Private providers like

**Trainingcred** also offer short courses on renewable energy solutions in Accra.<sup>79</sup> These certifications are becoming increasingly important for demonstrating practical competence.

6. **Career Progression:** Two primary career tracks are evident. The **technical track** often begins with a role as a Solar Technician or Installer, progressing to Field Engineer, Project Engineer, and potentially a Senior Technical Consultant or Operations Manager.<sup>67</sup> The **policy/management track** often starts with a graduate internship or national service placement, moving to a Junior Officer/Analyst role within a government agency or NGO, and progressing to Senior Advisor, Program Manager, or Director.<sup>26</sup>

## F. Sector-Specific Insights

The renewable energy job market in Ghana is characterized by a distinct segmentation between university-educated engineers and vocationally trained technicians. Engineers, often holding degrees from institutions like KNUST or international universities, tend to occupy senior, salaried roles in policy, design, and management. They operate in a more formalized market, command higher salaries, and exhibit greater geographical mobility, including internationally.<sup>67</sup> In contrast, technicians and installers are the backbone of project implementation, but their employment is often contract-based and more vulnerable to the boom-and-bust cycles of project funding. Indicative salary data, though limited, reflects this divide, with senior advisory roles implying high compensation levels while technician roles are advertised with significantly lower monthly wages.<sup>26</sup> This bifurcation presents a critical challenge for sustainable workforce development. To build a robust and equitable labor market, there is a pressing need to establish clear and accessible pathways for upskilling, allowing experienced technicians to gain further certification and transition into supervisory, training, or junior engineering roles. Without such

bridges, the sector risks creating a large, low-wage, and precarious workforce at the implementation level, undermining the "decent jobs" objective of the National Green Jobs Strategy.

## **Section 4: Energy Efficiency and Sustainable Construction**

### **A. Sector Overview and Key Drivers**

The Energy Efficiency and Sustainable Construction sector is a critical and growing component of Ghana's green economy, driven by both economic necessity and strategic policy. The high cost of electricity and an unreliable grid create a strong market incentive for industries and commercial entities to adopt energy-saving measures.<sup>15</sup> This market pull is reinforced by government and donor-led initiatives. GLZ, through projects like "Sustainable Energy for Climate Protection in Ghana" (SustainE4Climate), actively supports the implementation of energy efficiency strategies.<sup>23</sup> A major catalyst for this sector is the new Nearly Zero Energy Building (NZEB) on the Energy Commission's premises, which not only serves as a benchmark for sustainable construction but also houses the Energy Academy, a dedicated training center for energy professionals.<sup>55</sup> Furthermore, the emergence of green building certification systems is formalizing standards and creating a new market for specialized services.

### **B. Occupational Map**

#### **7. Formal/Salaried Roles:**

1. **Energy Auditor:** A specialized professional who conducts assessments of energy consumption in buildings and industrial facilities, identifies areas of waste, and recommends efficiency improvements. These roles are found within energy service companies (ESCOs), large industrial firms, and consulting practices.

2. **Green Building Consultant / Sustainability Consultant:** These professionals advise real estate developers, architects, and construction firms on how to incorporate sustainable design principles, materials, and technologies into their projects to meet certification standards and reduce operational costs.
  3. **Building Energy Manager:** Typically employed by large facility owners (e.g., commercial office buildings, hotels, hospitals), this role involves the ongoing monitoring and optimization of a building's energy systems to ensure peak efficiency.
  4. **Energy Advisor (Energy Efficiency):** Similar to the renewable energy counterpart, this senior role, often with development partners like GIZ, focuses on providing technical advice to government bodies on national energy efficiency strategies and regulations.<sup>27</sup>
8. **Contract/Freelance/Gig Work:**
1. **EDGE/LEED Certification Specialist/Auditor:** Professionals accredited to assess and verify that buildings meet the specific requirements of green building standards like EDGE (Excellence in Design for Greater Efficiencies) or LEED (Leadership in Energy and Environmental Design). This work is often done on a per-project, contractual basis for certification bodies like SGS or directly for developers.<sup>82</sup>
  2. **Retrofitting Technician:** Skilled tradespeople (electricians, HVAC specialists) who specialize in upgrading existing buildings with more efficient equipment, such as LED lighting, modern air conditioning systems, or insulation.
9. **Internships/Apprenticeships:**
1. Opportunities exist within architectural firms, construction companies, and environmental consultancies for students and recent graduates in engineering, architecture, and environmental science to gain practical experience in sustainable design and construction.

## C. Geographic Distribution and Location Intelligence

10. **Primary Urban Centers:** The demand for these roles is overwhelmingly concentrated in Ghana's major urban centers, particularly **Greater Accra** and **Kumasi**. This is due to the high concentration of new construction projects

(commercial, residential, and industrial), the presence of corporate headquarters, and the location of key government agencies and consulting firms.

11. **Industrial Zones:** Areas with significant industrial activity, such as the Tema Free Zones Enclave and industrial areas in Kumasi and Takoradi, are also hotspots for energy efficiency services as manufacturers seek to reduce high operational costs.
12. **Remote/Digital Work:** While site audits and construction supervision require a physical presence, significant aspects of the work can be done remotely. This includes building energy modeling and simulation, analysis of energy data, and the preparation of certification documentation. This allows consultants based in Accra to serve projects across the country.

#### D. Skills and Competency Profile

##### 13. Technical Skills:

1. **Energy Auditing:** Mastery of energy audit methodologies and the use of diagnostic equipment (e.g., power analyzers, thermal imaging cameras).
2. **Building Performance Simulation:** Proficiency with software used to model a building's energy performance (e.g., EnergyPlus, IES VE).
3. **Green Building Standards:** In-depth knowledge of green building certification systems, particularly IFC's **EDGE** standard, which is gaining significant traction in Ghana, and the locally developed **GREDA-GB** (Ghana Real Estate Developers Association-Green Building) standard.<sup>83</sup> Knowledge of LEED is also valuable.<sup>86</sup>
4. **Sustainable Materials:** Understanding of the lifecycle impacts of building materials, including embodied energy and local sourcing options.
5. **HVAC and Lighting Systems:** Specialized knowledge of high-efficiency heating, ventilation, air conditioning, and lighting technologies.

##### 14. Interpersonal and Management Capabilities:

- **Analytical Skills:** Ability to analyze complex energy data and utility bills to identify savings opportunities.
- **Communication & Reporting:** Skill in clearly communicating technical findings and recommendations to non-technical clients (e.g., developers, facility managers) through well-structured reports.
- **Project Management:** Ability to manage retrofitting projects or the

certification process from start to finish.

- **Client Relationship Management:** Building trust and long-term relationships with clients in the real estate and industrial sectors.

## E. Career and Educational Pathways

- **Formal Education:** A background in Architecture, Civil Engineering, Electrical Engineering, Mechanical Engineering, or Building Technology is most common. Relevant degrees are offered by KNUST's College of Art and Built Environment and College of Engineering.<sup>87</sup>
- **Professional Certifications/Training:** This sector is heavily reliant on professional certification. Key credentials include:
  - **EDGE Expert/Auditor:** Accreditation from the IFC to provide consultancy and auditing services for the EDGE certification system. SGS is a key provider of these services in Ghana.<sup>82</sup>
  - **Certified Energy Manager (CEM):** A globally recognized certification for energy management professionals.
  - Training from the **Energy Academy** at the Energy Commission will be a crucial pathway for acquiring specialized skills in energy efficiency and conservation.<sup>56</sup>
- **Career Progression:** An individual might start as a junior engineer or architect in a construction firm, gain specialized training in energy efficiency, become a certified energy auditor or EDGE expert, and then progress to a senior consultant, head of sustainability for a major developer, or establish their own specialized consultancy.

## F. Sector-Specific Insights

A key development shaping the employment landscape in this sector is the formalization of green building standards through certification. The growing adoption of both an international standard like IFC's EDGE and a homegrown alternative like the GREDA-GB is creating a new, specialized, and credible job market.<sup>83</sup> This moves the concept of "green building" from a vague marketing term to a verifiable,

standards-based practice. This process creates a distinct value chain of employment: developers need to hire

**Green Building Consultants** to guide the design process; these consultants require proficiency in specific software and materials knowledge; and independent, accredited **Auditors** are needed to verify compliance. This certification-driven market professionalizes the sector, creates a clear demand for specific skills, and provides a tangible measure of a building's green credentials, which can be used to attract investment and premium tenants. The parallel development of a local standard (GREDA-GB) tailored to Ghanaian conditions alongside an international one (EDGE) suggests a maturing market that recognizes the need for both global best practices and local relevance.<sup>85</sup>

## **Section 5: Environmental Management and Conservation**

### **A. Sector Overview and Key Drivers**

Environmental Management and Conservation forms the bedrock of Ghana's green economy, rooted in the constitutional mandates of its primary environmental institutions. This sector is driven by the legal requirements for environmental protection and the national commitment to preserving biodiversity and natural resources. The Environmental Protection Agency (EPA) and the Forestry Commission (FC) are the principal state actors, enforcing regulations and managing protected areas.<sup>51</sup> The sector's activities are further propelled by large-scale, internationally funded projects like the World Bank's Ghana Landscape Restoration and Small-Scale Mining Project (GLRSSMP), which aims to strengthen integrated natural resource management.<sup>34</sup> A vibrant ecosystem of non-governmental organizations (NGOs), such as Friends of the Earth Ghana and Earth Care Ghana, also plays a crucial role in advocacy, community-based conservation, and monitoring.<sup>88</sup>

### **B. Occupational Map**



- **Formal/Salaried Roles:**

- **Environmental Officer / Environmental Protection Officer:** A core role within the EPA and in the environmental compliance departments of private companies (especially in mining, oil and gas, and manufacturing). Responsibilities include conducting inspections, monitoring compliance with permits, and preparing environmental reports.<sup>51</sup>
- **Conservation Scientist / Ecologist:** These professionals work for research institutions, universities, the Forestry Commission, and conservation NGOs. They conduct biodiversity surveys, monitor ecosystem health, and develop conservation strategies for threatened species and habitats.<sup>90</sup>
- **Protected Area Manager / Park Ranger:** Employed by the Wildlife Division of the Forestry Commission, these individuals are responsible for the day-to-day management of national parks and resource reserves, including anti-poaching patrols, habitat management, and visitor services.<sup>59</sup>
- **Ecosystem Restoration Coordinator:** A role emerging from projects like the GLRSSMP, focused on planning and implementing activities to restore degraded landscapes, such as reforested areas or reclaimed mine sites.
- **Environmental and Social (E&S) Safeguards Specialist:** A high-level role, often on a consultancy basis for projects funded by the World Bank or other development finance institutions. They ensure that projects comply with international environmental and social standards, requiring deep knowledge of frameworks like the IFC Performance Standards.<sup>32</sup>

- **Contract/Freelance/Gig Work:**

- **EIA Consultant:** Specialists hired by project developers to conduct Environmental Impact Assessments as required by the EPA. This is a major source of freelance and consultancy work. Firms like SAL Consult, ESL Consulting, and WKC Group are active in this space.<sup>91</sup>
- **Community-Based Monitors:** Local community members are sometimes engaged on a part-time or voluntary basis by NGOs or project implementers to monitor local environmental conditions, such as illegal logging or water pollution.

- **Internships/Apprenticeships:**

- Internships are common at the EPA, Forestry Commission, and various environmental NGOs, providing students of environmental science and natural resource management with their first practical experience.



## C. Geographic Distribution and Location Intelligence

- **Policy and Regulatory Hub:** Greater Accra is the center for policy and regulatory roles, hosting the headquarters of the EPA, Forestry Commission, and major environmental NGOs and consultancies.<sup>49</sup>
- **Project Implementation Hotspots:**
  1. **Forest Zones (e.g., Ashanti, Western, Bono Regions):** High concentration of jobs related to forestry management, reforestation, conservation, and sustainable timber production.
  2. **Mining Enclaves (e.g., Western, Ashanti Regions):** Demand for environmental officers and reclamation specialists to manage the environmental impacts of mining. The GLRSSMP specifically targets these areas.<sup>34</sup>
  3. **Coastal Zones:** Opportunities in marine and coastal ecosystem management, particularly related to protecting wetlands and managing the impacts of offshore oil and gas development. ESL Consulting, for example, has significant experience in this region.<sup>92</sup>
  4. **Protected Areas:** Jobs for park managers and rangers are located directly within Ghana's network of national parks and resource reserves, such as Mole National Park or Kakum National Park.
- **Remote/Digital Work:** GIS and remote sensing analysis for land-use change detection, biodiversity mapping, and environmental monitoring can be performed remotely. Report writing and data analysis for EIAs are also frequently done off-site.

## D. Skills and Competency Profile

- **Technical Skills:**
  - **Environmental Impact Assessment (EIA) / Strategic Environmental Assessment (SEA):** A core competency for consultants and regulators, involving systematic processes to evaluate the environmental consequences of projects and policies.<sup>51</sup>
  - **Biodiversity Monitoring and Assessment:** Skills in conducting flora and

fauna surveys, habitat analysis, and using conservation metrics.

- **Geographic Information Systems (GIS) and Remote Sensing:** Essential for mapping land use, monitoring deforestation, and analyzing spatial environmental data. This skill is sought after by both consultancies and public agencies.<sup>32</sup>
- **Environmental Law and Regulation:** A thorough understanding of Ghana's environmental laws (e.g., Act 490, LI 1652) and international standards is critical for compliance and advisory roles.<sup>32</sup>
- **Soil and Water Quality Testing:** Laboratory and field skills for monitoring pollution levels.
- **Interpersonal and Management Capabilities:**
  - **Stakeholder Consultation:** Ability to effectively engage with a wide range of stakeholders, from government officials to local community members and traditional leaders, is a mandatory part of the EIA process.<sup>95</sup>
  - **Technical Report Writing:** The ability to produce clear, concise, and scientifically robust reports (e.g., EIA reports, monitoring reports) is paramount.
  - **Negotiation and Conflict Resolution:** Particularly important for roles involving land use and resource access, where conflicts between communities, companies, and conservation interests can arise.
  - **Community Mobilization and Education:** Skills needed by NGOs and extension officers to promote conservation practices at the grassroots level.

## E. Career and Educational Pathways

- **Formal Education:** A Bachelor of Science (BSc) or Master of Philosophy (MPhil) in Environmental Science, Natural Resources Management, Wildlife and Range Management, or a related field is the standard entry requirement. The University of Ghana (IESS) and KNUST (Faculty of Renewable Natural Resources) are the leading institutions providing these qualifications.<sup>76</sup>
- **Professional Certifications/Training:** While less formalized than in the energy sector, professional development is available. The International Association for Impact Assessment (IAIA) Ghana chapter provides training and networking for EIA professionals.<sup>97</sup> The Ghana Institute of Safety and Environmental Professionals (GhISEP) also offers membership and development opportunities

for environmental professionals.<sup>98</sup>

- **Career Progression:** A typical pathway could start with an entry-level role as a Field Assistant or Junior Environmental Officer. With experience, one could progress to become a Senior Environmental Officer, a Lead EIA Consultant, a Conservation Program Manager at an NGO, or a Director within the EPA or Forestry Commission.

## **F. Sector-Specific Insights**

The employment landscape in environmental management is undergoing a significant professionalization, driven by the strengthening of regulatory enforcement. The impending transformation of the EPA into an "Authority" with the power to prosecute environmental offenses is a landmark development.<sup>51</sup> This shift elevates the role of environmental compliance from a "box-ticking" exercise to a critical risk management function for private companies. As the legal and financial consequences of non-compliance increase, so does the demand for highly competent environmental professionals. This creates a positive feedback loop: companies must invest more in qualified environmental officers and consultants to manage their legal exposure, which in turn raises the standards, skills, and remuneration for these roles. This trend is most pronounced in high-impact sectors like mining, oil and gas, and large-scale construction, where the requirement for robust ESAs and continuous environmental monitoring is non-negotiable.

## **Section 6: Sustainable Agriculture and Agroecology**

### **A. Sector Overview and Key Drivers**

Sustainable Agriculture is a cornerstone of Ghana's green economy strategy, reflecting the sector's immense importance to national employment, food security, and its potential for climate mitigation and adaptation. Approximately 45% of Ghana's

workforce relies on agriculture, much of which is rain-fed and highly vulnerable to climate change.<sup>5</sup> Consequently, there is a strong policy push towards climate-resilient and sustainable practices. This is driven by the National Green Jobs Strategy, which prioritizes agriculture for green job creation<sup>6</sup>, and by major international initiatives. USAID's Feed the Future (FtF) programs, such as the Market Systems and Resilience (MSR) and Mobilizing Finance in Agriculture (MFA) activities, are investing hundreds of millions of dollars to support smallholder farmers and agribusinesses, with a specific focus on Northern Ghana.<sup>36</sup> Similarly, the World Bank's West Africa Food System Resilience Program (FSRP) is providing significant financing to help Ghana recover from climate-related agricultural losses and build more resilient food systems.<sup>99</sup>

## B. Occupational Map

- **Formal/Salaried Roles:**

- **Agricultural Extension Officer (Sustainable Practices):** Employed by the Ministry of Food and Agriculture (MoFA) and NGOs, these officers provide training and technical assistance to farmers on sustainable techniques like conservation agriculture, integrated pest management, and soil health.
- **Climate-Smart Agriculture Consultant/Specialist:** A specialized role, often found within development projects (e.g., USAID, World Bank) or specialized consultancies. These experts design and promote agricultural systems that simultaneously increase productivity, enhance resilience to climate change, and reduce greenhouse gas emissions.
- **Sustainability Specialist/Manager (Agribusiness):** A corporate role within large agribusinesses (e.g., cocoa buying companies, food processors). They are responsible for developing and implementing sustainability strategies, managing certification programs (e.g., Fairtrade, Rainforest Alliance), and ensuring supply chain compliance with environmental and social standards. A CV on Ghanajob.com shows a "Sustainability Specialist, Africa" with over 10 years of experience in sustainable farming and agroforestry carbon projects.<sup>100</sup>
- **Monitoring, Evaluation, and Learning (MEL) Officer:** A common role in donor-funded projects, such as the one advertised by the International Institute of Tropical Agriculture (IITA) for its Sustainable Farming Program.

They track project progress, measure impacts, and document lessons learned.<sup>101</sup>

- **Farm Manager:** Responsible for the overall management of commercial farms, with an increasing emphasis on implementing sustainable and efficient production methods.<sup>101</sup>
- **Contract/Freelance/Gig Work:**
  - **Organic Farming Inspector/Certifier:** These individuals conduct audits of farms to verify compliance with organic standards. In Ghana, this is often facilitated through the Participatory Guarantee System (PGS Ghana), which involves peer-review among farmers, making it a more accessible and community-driven form of certification.<sup>102</sup>
  - **Human Rights and Environmental Due Diligence (HREDD) Consultant:** A specialized consultancy role, often for commodity sectors like cocoa, focused on conducting risk assessments to ensure supply chains are free from human rights abuses and environmental degradation.<sup>101</sup>
- **Community-Based Roles and Apprenticeships:**
  - **Community Extension Agents / Lead Farmers:** Experienced farmers trained by NGOs or projects to act as local resource persons, disseminating knowledge and new techniques within their communities.
  - **Village Savings and Loans Officer:** A role focused on community mobilization and financial inclusion, helping farming groups to save and access small loans for agricultural inputs. ORGIIS GHANA advertised for such a role in the Upper East Region.<sup>101</sup>
  - **Peace Corps Volunteer (Sustainable Agriculture Outreach Agent):** A two-year volunteer placement in rural communities focused on enhancing agricultural productivity, supporting income generation, and improving household nutrition through sustainable practices.<sup>104</sup>

## C. Geographic Distribution and Location Intelligence

- **Policy and Corporate Hub:** Greater Accra hosts the headquarters of MoFA, COCOBOD, major agribusinesses, and development partners, making it the center for policy, management, and finance roles in the sector.
- **Project Implementation Hotspots:**
  1. **Northern Ghana (Northern, Savannah, Upper East, Upper West Regions):**

This is the primary geographic focus for most major climate-resilient and food security projects funded by USAID and the World Bank, due to higher poverty rates and climate vulnerability. Opportunities for extension officers, project staff, and community mobilizers are concentrated here.<sup>36</sup> Tamale is the key operational hub.

2. **Cocoa Growing Regions (e.g., Ashanti, Western, Ahafo Regions):** These regions are the focus of sustainability initiatives in the cocoa sector, driven by large companies and certification bodies. Jobs relate to managing certification programs, promoting agroforestry, and ensuring compliance with standards like the EU Deforestation Regulation (EUDR).<sup>101</sup>
3. **Rural and Peri-Urban Areas (Nationwide):** Opportunities for organic farming, local market gardening, and community-based extension services are widespread, driven by local demand and initiatives like PGS Ghana.<sup>103</sup>
- **Remote/Digital Work:** The adoption of digital platforms for agriculture is growing. This creates opportunities for remote work in areas like digital advisory services (providing weather and market information via mobile), GIS analysis for farm planning, and managing data for agricultural finance platforms.

#### D. Skills and Competency Profile

- **Technical Skills:**
  - **Agroecology/Agronomy:** Deep knowledge of crop science, soil health management, composting, cover cropping, and agroforestry systems.<sup>100</sup>
  - **Soil and Water Conservation:** Practical skills in techniques to prevent soil erosion and improve water-use efficiency, such as building bunds or implementing drip irrigation.
  - **Integrated Pest Management (IPM):** Ability to manage pests and diseases with minimal reliance on chemical pesticides.
  - **Organic Certification Standards:** Understanding of the principles and processes of organic certification, particularly the Participatory Guarantee System (PGS) used in Ghana.<sup>102</sup>
  - **Climate-Smart Agriculture (CSA):** Knowledge of practices and technologies that build resilience to climate change, such as drought-resistant crop varieties and weather-based index insurance.<sup>39</sup>
  - **Data Collection and Analysis:** Skills in using mobile data collection tools and

analyzing farm-level data for monitoring and evaluation purposes.<sup>101</sup>

- **Interpersonal and Management Capabilities:**
  - **Community Mobilization and Training:** Ability to work effectively with smallholder farmers, facilitate training sessions, and build trust within communities is essential for extension roles.<sup>104</sup>
  - **Communication:** Strong communication skills to translate technical information into practical advice for farmers, often in local languages.<sup>48</sup>
  - **Project Management:** Skills to manage the budgets, timelines, and deliverables of agricultural development projects.
  - **Business and Entrepreneurship:** For consultants and managers, the ability to develop sustainable business models for agricultural value chains is key.

## E. Career and Educational Pathways

- **Formal Education:** A BSc or MPhil in Agriculture, Agricultural Economics, Agribusiness, Natural Resource Management, or Environmental Science is the standard qualification. The University of Ghana (Department of Agricultural Economics and Agribusiness, Department of Agricultural Engineering) and KNUST (College of Agriculture and Natural Resources) are leading providers of these programs.<sup>96</sup>
- **Professional Certifications/Training:**
  - **Organic Certification:** While formal certification bodies exist, the **Participatory Guarantee System (PGS Ghana)** provides a more accessible, community-based form of validation and training for organic farmers.<sup>102</sup> The Ghana Standards Authority, with GIZ support, is also working to establish a formal Organic Certification Scheme.<sup>110</sup>
  - **Specialized Short Courses:** Organizations like Skills for Africa offer courses on Sustainable Agriculture & Food Systems, covering topics from agroecology to climate-smart agriculture.<sup>106</sup>
- **Career Progression:** An individual might start as a field-level extension officer or a project assistant. With experience and potentially a master's degree, they could progress to become a project coordinator, a climate-smart agriculture specialist, a sustainability manager for an agribusiness, or an independent consultant.



## **F. Sector-Specific Insights**

The employment landscape in Ghana's sustainable agriculture sector is defined by a powerful duality of drivers: the push for climate resilience at the local level and the pull of market access at the international level. On one hand, the increasing frequency of droughts and erratic rainfall necessitates the adoption of climate-smart agricultural practices to ensure food security and protect farmers' livelihoods. This creates a demand for extension officers, researchers, and project staff who can disseminate knowledge on drought-resistant seeds, water conservation, and soil health.<sup>99</sup> On the other hand, the global market's growing demand for sustainably and ethically produced commodities, particularly cocoa and palm oil, creates a parallel set of opportunities. This market pull requires professionals who understand and can implement international certification standards (e.g., Fairtrade, Rainforest Alliance, EUDR), manage complex supply chains, and conduct due diligence on human rights and environmental impacts.<sup>101</sup> A successful professional in this evolving sector is therefore one who can bridge this gap—possessing not only the agronomic and environmental expertise to improve farm-level practices but also the business acumen and systems-thinking to connect those farms to high-value international markets.

## **Section 7: Circular Economy and Waste Management**

### **A. Sector Overview and Key Drivers**

The Circular Economy and Waste Management sector in Ghana is transitioning from a nascent concept to a strategic national priority, creating a dynamic and rapidly evolving job market. This shift is driven by the urgent need to address Ghana's significant waste management challenges, including the generation of 1.1 million tonnes of plastic waste annually, of which only a fraction is recycled.<sup>111</sup> The government has responded with key policies like the National Plastics Management Policy and a commitment to circular practices, which are projected to create over



60,000 jobs by 2030.<sup>45</sup> This transition is heavily supported by international partners and local innovators. Initiatives like the UNIDO-implemented Ghana Circular Economy Centre project <sup>112</sup>, the multi-stakeholder Circular Economy Innovation Hub led by the International Water Management Institute (IWMI) <sup>113</sup>, and the work of pioneering social enterprises are fostering an ecosystem for resource recovery, recycling, and waste-to-value businesses.

## B. Occupational Map

- **Formal/Salaried Roles:**

- **Recycling Program Coordinator/Manager:** Employed by municipalities, large waste management companies, or NGOs, these professionals design and manage waste collection, sorting, and recycling programs. They oversee logistics, community sensitization, and partnerships with recycling facilities.
- **Waste-to-Energy Specialist:** A technical role focused on technologies that convert waste into energy. This includes experts in **anaerobic digestion** for biogas production from organic waste (as promoted by companies like Sustainology Climate Solutions) and specialists in **Black Soldier Fly (BSF) technology**, which uses larvae to convert organic waste into valuable animal feed and compost (a technology being promoted and trained on by the Ghana Atomic Energy Commission).<sup>115</sup>
- **Materials Recovery Facility (MRF) Operator/Manager:** These individuals manage the operations of facilities where mixed waste is sorted into different streams (plastics, paper, metals, glass) for recycling. Major players like the Jospong Group operate Integrated Recycling & Compost Plants (IRECOP) that require such expertise.<sup>118</sup>
- **E-Waste Technician:** A specialized role focused on the safe dismantling, sorting, and processing of electronic waste. The construction of a dedicated E-Waste Collection and Dismantling Center in Tamale, funded by a World Bank project, signals the formalization and growing demand for this skill set in Northern Ghana.<sup>33</sup>
- **Circular Economy Consultant:** High-level advisors who work with businesses and government agencies to redesign products, processes, and business models based on circular principles (e.g., designing for durability, repairability, and recyclability).

- **Contract/Freelance/Gig Work:**

- **Waste Picker/Collector:** This constitutes the largest, albeit most informal, part of the workforce. An estimated 7,800 individuals in Greater Accra earn a living by collecting and selling recyclable materials.<sup>45</sup> While currently informal, there are efforts to organize and formalize this work through associations and social enterprises.
- **Green Entrepreneur/Innovator:** A growing number of entrepreneurs are starting small businesses focused on upcycling waste materials into new products, such as bags from plastic sachets or furniture from reclaimed wood. Organizations like Environment360 and the Ghana Climate Innovation Centre provide incubation and support for these ventures.<sup>4</sup>

- **Internships/Apprenticeships:**

1. Apprenticeships are common in the informal sector, where new waste pickers learn the trade from experienced collectors.
2. Formal internships are available with larger waste management companies like Zoomlion and with NGOs and research institutes working on circular economy projects.

## C. Geographic Distribution and Location Intelligence

1. **Primary Urban Centers (Accra, Kumasi, Takoradi):** These cities are the epicenters of waste generation and, consequently, the hubs for waste management and recycling activities. Major companies like Zoomlion and the Jospong Group have their largest operations, including composting and recycling plants (ACARP in Accra, KCARP in Kumasi), in these areas.<sup>118</sup> The concentration of businesses and households also drives demand for collection services.
2. **Regional Hubs:** The establishment of 16 regional IRECOP facilities by the Jospong Group is decentralizing waste processing infrastructure and creating jobs beyond the primary cities.<sup>118</sup> The new e-waste facility in **Tamale** will create a specific hub for that sub-sector in the north.<sup>33</sup>
3. **Community-Based Initiatives:** The GrEEen project specifically targets the **Ashanti and Western regions** for creating green jobs in the circular economy for youth and women.<sup>20</sup> Community-level composting and plastic collection initiatives are present across the country, often supported by local NGOs.
4. **Remote/Digital Work:** Opportunities exist for developing and managing digital

platforms that connect waste generators with collectors and recyclers, such as the software used by Jumeni.<sup>121</sup> Data analysis of waste streams and logistics optimization can also be performed remotely.

## D. Skills and Competency Profile

### 5. Technical Skills:

- **Waste Sorting and Material Identification:** The ability to accurately identify and sort different types of plastics, metals, and other materials is a fundamental skill for both informal pickers and formal MRF operators.
- **Recycling Processes:** Knowledge of specific recycling technologies, such as plastic pelletizing, paper pulping, or metal smelting.
- **Composting and Organic Waste Management:** Skills in managing aerobic and anaerobic composting processes to produce high-quality organic fertilizer.
- **Waste-to-Energy Technologies:** Technical expertise in operating and maintaining systems like anaerobic biodigesters or BSF larvae farms.<sup>115</sup>
- **Health and Safety Protocols:** Crucial for all roles, especially those involving hazardous or e-waste, to mitigate health risks associated with waste handling. Training in safety standards is a key component of formalization efforts.<sup>47</sup>
- **Logistics and Supply Chain Management:** Skills needed to efficiently manage the collection, transportation, and processing of large volumes of waste.

### 6. Interpersonal and Management Capabilities:

- **Entrepreneurship and Business Development:** A critical skill for the many small and medium-sized enterprises (SMEs) and social enterprises that characterize the sector.
- **Community Engagement:** Ability to organize and sensitize communities on waste segregation at the source is vital for improving the quality and quantity of recyclable materials.
- **Partnership Building:** Skills to forge collaborations between public sector entities (municipalities), the private sector (recycling companies), and the informal sector (waste picker associations).
- **Advocacy and Policy Influence:** Necessary for NGOs and industry

associations to push for supportive policies and regulations.

## E. Career and Educational Pathways

7. **Formal Education:** While many roles are accessible without higher education, management and technical specialist positions typically require a degree in Environmental Science, Chemical Engineering, Mechanical Engineering, or Business Administration. Institutions like KNUST and UG offer relevant programs.<sup>76</sup>
8. **Professional Certifications/Training:** This is a key area for workforce development.
  - **Waste Management Courses:** Private providers like Trainingcred and CEEL Training offer short courses in Accra covering topics from solid waste management principles to hazardous waste handling.<sup>122</sup>
  - **Circular Economy Training:** GIZ and the Wuppertal Institute have provided training programs on the circular economy for Ghanaian managers and startup hubs.<sup>124</sup>
  - **Technical Training:** The Ghana Atomic Energy Commission provides capacity building for entrepreneurs on BSF technology.<sup>116</sup>
9. **Career Progression:** A common pathway in the informal sector is from a waste picker to a "middleman" or aggregator who buys from other collectors. In the formal sector, an individual might start as a facility operator or collection supervisor and progress to a plant manager, logistics manager, or regional operations director. Another pathway is for an innovator to receive support from an incubator like GCIC and grow their own green enterprise.

## F. Sector-Specific Insights

A defining characteristic of the waste management and circular economy sector in Ghana is the ongoing effort to formalize and integrate the vast informal workforce. This is not merely a social objective but an economic and operational necessity. The informal sector already possesses an intricate and efficient, albeit hazardous, system for material recovery.<sup>45</sup> The success of Ghana's circular economy ambitions hinges on

the ability to harness this existing human capital. This creates a unique set of employment opportunities centered on this transition. There is a growing demand for professionals who can act as intermediaries:

**trainers** who can deliver health and safety education to waste pickers <sup>47</sup>,

**social enterprise managers** who can structure informal associations into formal cooperatives, and **logistics coordinators** who can integrate the collection networks of informal workers with the processing capacities of formal recycling plants. This dynamic suggests that the most impactful jobs in this sector are not just purely technical but are those that blend technical knowledge of waste management with strong skills in social development, community mobilization, and inclusive business modeling.

## **Section 8: Water Resource Management and Sanitation**

### **A. Sector Overview and Key Drivers**

Water Resource Management and Sanitation is a critical green sector in Ghana, directly linked to public health, climate resilience, and economic development. The sector is driven by the national need to achieve SDG 6 (Clean Water and Sanitation) and is supported by major investments from development partners. The World Bank, for instance, is financing the Greater Accra Metropolitan Area (GAMA) and Greater Kumasi Metropolitan Area (GKMA) sanitation and water projects, which aim to increase access to improved water supply and sanitation, particularly in low-income communities.<sup>125</sup> The sector also encompasses the management of water resources for agriculture, industry, and ecosystems, a mandate that falls under the Water Resources Commission. The increasing impacts of climate change, such as rainfall variability and prolonged droughts, are heightening the urgency for effective water management, creating demand for specialized skills in hydrology and water conservation.<sup>5</sup>

## B. Occupational Map

### 10. Formal/Salaried Roles:

- **Water Quality Monitoring Specialist/Technician:** Employed by the Water Resources Commission, EPA, Ghana Water Company Limited (GWCL), and environmental consultancies. They are responsible for collecting and analyzing water samples from rivers, reservoirs, and treatment plants to ensure compliance with quality standards.
- **Hydrologist / Hydrological Assessment Coordinator:** These specialists, often working for government agencies or engineering consultancies, study the movement, distribution, and quality of water. They conduct hydrological assessments for infrastructure projects (e.g., dams, irrigation schemes) and develop models to predict the impact of climate change on water resources.
- **Irrigation System Designer/Engineer:** These professionals work in the agricultural sector, designing and overseeing the construction of efficient irrigation systems to support crop production, particularly in the face of unreliable rainfall. This role is crucial for climate adaptation in agriculture.
- **Sanitation Program Manager:** A key role within NGOs, government agencies (e.g., Ministry of Sanitation and Water Resources), and donor-funded projects like the GAMA/GKMA project. They manage the implementation of sanitation initiatives, which can range from constructing household toilets to managing fecal sludge treatment plants.
- **Watershed Management Coordinator:** This role involves the integrated management of land, water, and biological resources within a watershed. It requires a holistic approach, often involving community engagement, to protect water sources and maintain ecosystem health. This is a key area for the Forestry Commission and conservation NGOs.

### 11. Contract/Freelance/Gig Work:

- **Well Driller / Borehole Technician:** Skilled individuals and small companies contracted to drill and maintain boreholes, providing a primary source of clean water for many rural communities and small towns.
- **Sanitation Entrepreneur ("Sani-preneur"):** Entrepreneurs who run businesses providing sanitation services, such as constructing and marketing household latrines or operating vacuum trucks for fecal sludge collection.

### 12. Internships/Apprenticeships:

1. Internships are available at the GWCL, Water Resources Commission, and environmental NGOs for students of civil engineering, environmental science,

and water resource management.

2. Apprenticeships are common in the informal sector for trades like plumbing and well drilling.

### C. Geographic Distribution and Location Intelligence

3. **Urban Centers (Accra, Kumasi):** These areas are the focus of large-scale sanitation and water supply infrastructure projects, creating demand for program managers, civil engineers, and sanitation specialists.<sup>125</sup> They also host the headquarters of the relevant government agencies and consulting firms.
4. **Northern Ghana:** This region is a hotspot for water management interventions related to agriculture due to its arid climate. There is high demand for irrigation specialists and professionals working on small reservoir management and water conservation for farming.
5. **Coastal Zones:** Coastal areas face unique challenges like saltwater intrusion into freshwater aquifers and coastal erosion affecting water infrastructure, creating a need for specialized coastal hydrologists and engineers.
6. **Rural Communities (Nationwide):** Opportunities for borehole technicians, community water and sanitation management committees, and sanitation entrepreneurs are distributed across rural Ghana, driven by the need for basic water and sanitation access. The dry season often sees a peak in water-related project interventions.

### D. Skills and Competency Profile

7. **Technical Skills:**
  - **Water Quality Analysis:** Proficiency in laboratory techniques for testing physical, chemical, and biological parameters of water.
  - **Hydrological Modeling:** Ability to use software to model water flow, groundwater recharge, and the impacts of climate change on water availability.
  - **Irrigation System Design:** Knowledge of different irrigation technologies (e.g., drip, sprinkler) and the ability to design systems tailored to specific



crops and topographies.

- **Sanitation Engineering:** Expertise in the design and operation of sanitation systems, from simple latrines to complex wastewater and fecal sludge treatment plants.
- **GIS and Remote Sensing:** Used for watershed mapping, identifying potential borehole sites, and monitoring changes in water bodies.
- **Civil Engineering:** Foundational skills in the design and construction of water infrastructure like dams, pipelines, and treatment facilities.

**8. Interpersonal and Management Capabilities:**

- **Community Engagement and Sensitization:** Critical for sanitation projects to drive behavioral change (e.g., ending open defecation) and for establishing community-based management of water points.
- **Project Management:** Essential for overseeing the construction and implementation of complex water and sanitation projects.
- **Inter-Agency Coordination:** Ability to work with multiple stakeholders, including MMDAs, community leaders, private contractors, and government agencies.
- **Technical Training:** Skills to train community members on the operation and maintenance of water and sanitation facilities.

## **E. Career and Educational Pathways**

9. **Formal Education:** A BSc or MSc in Civil Engineering, Water Resources Management, Environmental Science, or Agricultural Engineering is the typical entry point for professional roles. KNUST and the University of Ghana are the primary institutions offering these degrees.<sup>76</sup>

10. **Professional Certifications/Training:**

- The Ghana Institution of Engineers (GhIE) and the Institution of Engineering and Technology Ghana (IET-GH) provide professional certification for engineers in the sector.<sup>126</sup>
- Specialized short courses on topics like water quality monitoring, WASH (Water, Sanitation, and Hygiene) program management, and hydrological modeling are offered by training institutions and development partners.

11. **Career Progression:** A graduate might start as a junior engineer at a consulting firm or a project officer at an NGO. With experience, they could advance to



become a lead design engineer, a senior hydrologist at the Water Resources Commission, a WASH Program Manager for a large international NGO, or the director of a municipal water and sanitation department.

## **F. Sector-Specific Insights**

The water and sanitation sector is increasingly being shaped by the dual pressures of urbanization and climate change, which is creating a demand for more integrated and resilient solutions. The concentration of major projects in urban areas like Accra and Kumasi reflects the immense strain that rapid population growth places on aging water and sanitation infrastructure.<sup>125</sup> This drives a need for large-scale engineering and program management roles. Simultaneously, climate change impacts, such as unpredictable rainfall, are creating a parallel demand for professionals in rural areas who can implement climate-adaptive solutions like efficient irrigation and sustainable watershed management to protect agricultural livelihoods.<sup>99</sup> This bifurcation means that the sector requires a diverse workforce, from civil engineers who can design urban wastewater treatment plants to community development specialists who can help farmers adapt to water scarcity. The most effective professionals will be those who can work at the intersection of these challenges, for example, by designing nature-based solutions like green infrastructure to manage urban stormwater, thereby addressing both sanitation and climate resilience.

## **Section 9: Climate Change Mitigation and Adaptation**

### **A. Sector Overview and Key Drivers**

This cross-cutting sector represents the high-level strategic response to the climate crisis in Ghana and is a direct consequence of the country's international commitments under the Paris Agreement. The sector is driven by the National Climate Change Policy (NCCP), the Nationally Determined Contributions (NDCs), and the

Energy Transition and Investment Plan (ETIP), which collectively aim to build a climate-resilient and low-carbon economy.<sup>1</sup> Employment in this field is less about direct, on-the-ground implementation and more about analysis, policy, planning, and finance. The jobs are predominantly knowledge-based and are concentrated within government agencies, research institutions, and development partner organizations. The establishment of a national carbon market framework under the EPA is a major new driver, creating a specialized niche for carbon finance and project development professionals.<sup>52</sup>

## B. Occupational Map

### 12. Formal/Salaried Roles:

- **Climate Policy Analyst:** Employed by government ministries (MESTI, Ministry of Finance), the EPA, and think tanks. They analyze the impacts of climate change, evaluate policy options, and contribute to the development of national strategies like the NDCs and the ETIP.
- **Resilience Planning Coordinator / Adaptation Specialist:** These professionals work within government agencies, MMDAs, and NGOs to develop and implement plans that help communities and economic sectors adapt to the impacts of climate change. This includes conducting vulnerability assessments and integrating adaptation measures into local development plans.<sup>18</sup>
- **Carbon Market Specialist / Officer:** A new and growing role, primarily within the EPA's Carbon Market Office and in the private sector. These specialists manage the pipeline of carbon projects seeking authorization under Article 6, develop methodologies for measuring emissions reductions, and facilitate transactions between project developers and international buyers.<sup>52</sup>
- **Carbon Project Developer:** Private sector entrepreneurs or consultants who identify, design, and implement projects that generate carbon credits, such as clean cookstove distribution, reforestation, or waste-to-energy initiatives. Companies like Sustainology Climate Solutions are active in this space.<sup>115</sup>
- **Climate Finance Specialist:** Works within the Ministry of Finance, development banks, or private financial institutions to mobilize and manage finance for climate-related projects. This includes accessing international climate funds (e.g., Green Climate Fund) and developing innovative financial

instruments like green bonds.<sup>19</sup>

### 13. **Contract/Freelance/Gig Work:**

1. **Vulnerability Assessment Consultant:** Experts hired for short-term contracts by development projects or government agencies to assess the climate vulnerability of specific communities, ecosystems, or economic sectors.
2. **Climate Modeler:** Highly specialized scientists who use computer models to project future climate scenarios for Ghana, providing the data needed for adaptation planning. This work is often done on a consultancy basis for research institutions or government.

### 14. **Internships/Apprenticeships:**

- Internships are available at the EPA, MESTI, and research centers like the Centre for Climate Change and Sustainability Studies (C3SS) at the University of Ghana, offering aspiring policy analysts and researchers valuable experience.

## **C. Geographic Distribution and Location Intelligence**

- **Primary Hub (Greater Accra):** This sector is almost exclusively concentrated in Accra. This is where the relevant government ministries, the EPA, development partner headquarters, financial institutions, and major consulting firms are located. The work is predominantly office-based, involving policy development, data analysis, and stakeholder coordination.
- **Remote/Digital Work:** The knowledge-based nature of this sector makes it highly conducive to remote and digital work. Policy analysis, report writing, climate modeling, and virtual consulting can all be performed from any location with a reliable internet connection. This creates opportunities for Ghanaian professionals to engage with international organizations and clients without being physically based in Accra.

## **D. Skills and Competency Profile**

### 1. **Technical Skills:**

- **Climate Modeling and Data Analysis:** Ability to interpret and use climate projection data. Proficiency in statistical analysis and data visualization is crucial.<sup>26</sup>
  - **Vulnerability Assessment Frameworks:** Knowledge of methodologies for assessing climate risks and vulnerabilities for different systems (e.g., social, economic, ecological).
  - **Carbon Accounting and MRV:** Expertise in methodologies for quantifying greenhouse gas emissions and reductions (Measurement, Reporting, and Verification), particularly for carbon market projects under frameworks like the Gold Standard or Verra.
  - **Climate Finance:** Deep understanding of international climate finance architecture (GCF, Adaptation Fund), green bond principles, and other innovative financing mechanisms.<sup>26</sup>
  - **Policy Analysis:** The ability to analyze complex policy documents, understand their economic and social implications, and draft clear and concise policy briefs.
  - **Environmental and Social Safeguards:** Knowledge of the environmental and social risk management frameworks used by international finance institutions.
2. **Interpersonal and Management Capabilities:**
- **Strategic Thinking:** The ability to understand complex systems and develop long-term, strategic responses to climate change.<sup>26</sup>
  - **High-Level Communication and Negotiation:** Skills to effectively communicate complex climate issues to policymakers and negotiate in international forums.
  - **Technical Report Writing:** Essential for producing high-quality policy documents, assessment reports, and funding proposals.
  - **Inter-Agency and Stakeholder Coordination:** Ability to facilitate collaboration between diverse actors, including government ministries, the private sector, civil society, and academia.

## E. Career and Educational Pathways

- **Formal Education:** An advanced degree (Master's or PhD) is typically required for most roles in this sector. Relevant fields include Environmental Science,

Climate Change, Sustainable Development, Environmental Economics, or Public Policy. The University of Ghana's Centre for Climate Change and Sustainability Studies (C3SS) offers specialized Master's and PhD programs directly tailored to this field.<sup>75</sup>

- **Professional Certifications/Training:**
  - Certifications in areas like Greenhouse Gas Accounting (e.g., from the GHG Management Institute), Climate and Renewable Energy Finance, or specific ESG frameworks (e.g., GARP SCR) are highly valuable.<sup>128</sup>
  - Specialized training workshops on Article 6 of the Paris Agreement, climate modeling, or vulnerability assessment are offered by international organizations like the UNFCCC, World Bank, and GIZ.
- **Career Progression:** A professional might start as a Research Assistant or Junior Policy Analyst. With a PhD and/or significant experience, they could progress to become a Senior Policy Advisor, the head of a climate unit in a ministry, a lead negotiator for Ghana in international climate talks, or a director at a climate-focused think tank or consultancy.

## F. Sector-Specific Insights

The climate change mitigation and adaptation sector in Ghana is rapidly evolving from a purely environmental concern into a sophisticated financial and economic domain. The operationalization of Ghana's Carbon Market Office and its active engagement in bilateral carbon trading agreements with countries like Switzerland and Sweden marks a pivotal shift.<sup>52</sup> This development is creating a new, highly specialized sub-sector of employment focused on the "monetization of mitigation." The demand is no longer just for scientists who can measure emissions, but for a new cadre of professionals who can structure carbon finance deals, develop bankable carbon credit projects, and navigate the complex legal and financial architecture of international carbon markets.<sup>61</sup> This trend is creating a strong link between the climate change sector and the green finance sector, requiring professionals who are bilingual in the languages of both environmental science and financial engineering. This creates a high-barrier-to-entry but high-value job market for individuals with this niche, hybrid skillset.

## Section 10: Environmental Consulting and Impact Assessment

### A. Sector Overview and Key Drivers

The Environmental Consulting and Impact Assessment (EIA) sector is a mature and legally mandated component of Ghana's green economy. Its existence and demand are directly driven by the Environmental Protection Agency Act (Act 490) and its accompanying Environmental Assessment Regulations (LI 1652), which require that all major development projects undergo an ESIA prior to approval.<sup>51</sup> This legal requirement creates a consistent market for consulting services across all major economic sectors, including mining, oil and gas, infrastructure, agriculture, and industry. The sector is populated by a mix of local and international consulting firms, as well as independent freelance consultants, who provide the technical expertise needed by project developers to navigate the regulatory process. The increasing complexity of projects and the growing stringency of environmental and social standards from international lenders further fuel the demand for high-quality consulting services.

### B. Occupational Map

- **Formal/Salaried Roles:**
  - **Environmental Consultant / EIA Specialist:** The core role in the sector. These professionals are employed by consulting firms and are responsible for managing and conducting EIAs. This involves coordinating baseline studies, assessing impacts, proposing mitigation measures, and writing the final EIA report for submission to the EPA.
  - **Social Impact Assessment (SIA) Specialist:** A sub-specialization within consulting, focusing on the social, economic, and cultural impacts of projects on local communities. This includes conducting stakeholder consultations, socioeconomic surveys, and developing livelihood restoration plans.
  - **Regulatory Compliance Consultant:** These consultants advise companies

on how to maintain compliance with their environmental permits and other legal obligations on an ongoing basis, often conducting regular environmental audits.

- **Policy Advisor (Environmental Governance):** Senior consultants who may be engaged by government or development partners to advise on strengthening environmental policies and regulatory frameworks.
- **Contract/Freelance/Gig Work:**
  - **Baseline Study Specialist:** Consultants often hire freelance specialists for short-term contracts to conduct specific baseline studies required for an EIA. These roles include:
    - **Ecologist/Biodiversity Specialist:** To survey flora and fauna.
    - **Hydrologist:** To assess impacts on water resources.
    - **Air Quality and Noise Specialist:** To conduct baseline measurements and modeling.
    - **Archaeologist:** To assess impacts on cultural heritage sites.<sup>95</sup>
  - **Independent EIA Practitioner:** Many experienced consultants operate as sole proprietors, taking on smaller EIA projects or subcontracting for larger firms.
- **Internships/Apprenticeships:**
  1. Consulting firms frequently hire recent graduates in environmental science as research assistants or junior consultants, providing them with on-the-job training in EIA methodology and project management.

### C. Geographic Distribution and Location Intelligence

- **Primary Hub (Greater Accra):** The vast majority of environmental consulting firms, such as SAL Consult and ESL Consulting, have their main offices in Accra.<sup>91</sup> This is due to proximity to the EPA headquarters (for report submission and follow-up) and the corporate offices of their major clients in the oil and gas, finance, and infrastructure sectors.
- **Secondary Hub (Kumasi):** Some consulting firms, like Geosystems Consulting, are based in Kumasi, positioning them to serve the mining and construction industries concentrated in the Ashanti and surrounding regions.<sup>95</sup>
- **Fieldwork Locations (Nationwide):** While the offices are centralized, the actual work of environmental consultants is nationwide, dictated by the location of

development projects. Consultants spend significant time in the field conducting baseline studies and community consultations in every region of the country, from offshore oil rigs in the Western Region to mining sites in the Ashanti Region and agricultural projects in the Northern Region.

- **Remote/Digital Work:** A significant portion of the work, including data analysis, impact modeling, and report writing, is office-based and can be done remotely. However, the fieldwork component (site visits, sample collection, community meetings) is irreplaceable and requires a physical presence on-site.

#### D. Skills and Competency Profile

- **Technical Skills:**
  - **EIA/ESIA Methodology:** A deep, procedural understanding of the entire impact assessment process as stipulated by the EPA and international best practices (e.g., IFC Performance Standards) is the most critical skill.<sup>51</sup>
  - **Baseline Data Collection:** Practical skills in conducting field surveys for air and water quality, noise levels, soil sampling, and biodiversity.<sup>95</sup>
  - **Impact Prediction and Modeling:** Ability to use models (e.g., air dispersion models, noise models) to predict the potential environmental impacts of a project.<sup>93</sup>
  - **GIS and Geospatial Analysis:** Used for site mapping, sensitivity analysis, and visualizing impact areas.
  - **Knowledge of Ghanaian Environmental Law:** Intimate familiarity with Act 490, LI 1652, and other relevant environmental regulations is non-negotiable.
- **Interpersonal and Management Capabilities:**
  - **Technical Report Writing:** The ability to synthesize vast amounts of technical data from various baseline studies into a coherent, defensible, and legally compliant EIA report is the ultimate deliverable and a core skill.
  - **Project Management:** Managing an EIA is a complex project involving multiple specialists, tight deadlines, and strict budgets.
  - **Stakeholder Consultation and Engagement:** Expertise in planning and facilitating effective consultations with diverse groups, including government agencies, local communities, CSOs, and traditional authorities, is a mandatory part of the process.<sup>92</sup>
  - **Client Management:** Building and maintaining strong relationships with



project developers is key to securing repeat business.

## E. Career and Educational Pathways

- **Formal Education:** A minimum of a Bachelor's degree in Environmental Science, Environmental Engineering, Natural Resources Management, Planning, or a related science field is required. A Master's degree is often preferred for senior roles.<sup>32</sup> Key feeder institutions are the University of Ghana and KNUST.
- **Professional Certifications/Training:**
  - Membership in and training from the **International Association for Impact Assessment (IAIA) Ghana** is highly regarded and provides a key network for professionals in the field.<sup>97</sup>
  - Certification as a **Certified Environmental Professional** or similar credentials can enhance credibility.
  - The EPA provides lists of certified individuals and firms, and establishing a working relationship with the agency is considered a desirable attribute for consultants.<sup>32</sup>
- **Career Progression:** A common path is to start as a Junior Consultant or Field Assistant, contributing to specific components of EIAs. With experience, one progresses to become a Project Consultant, managing entire EIA processes. Senior professionals may become Principal Consultants, Directors of consulting firms, or establish their own successful practice.

## F. Sector-Specific Insights

The environmental consulting sector in Ghana functions as a critical intermediary between economic development and environmental regulation. Its structure and demand are directly shaped by the non-discretionary legal requirement for EIAs. This creates a stable, albeit competitive, market for consulting services. A key dynamic is the interplay between local and international standards. While all projects must meet the EPA's requirements, projects seeking funding from international lenders like the World Bank or IFC must also adhere to their more stringent environmental and social performance standards.<sup>32</sup> This has created a two-tiered market. There is a demand

for consultants who can meet the basic national requirements, but there is a premium on and a smaller pool of consultants and firms who have the demonstrated experience and expertise to deliver EIAs that satisfy the rigorous demands of international finance institutions. This creates opportunities for firms that can successfully build this high-level capacity, often by partnering with or hiring international experts, thereby positioning themselves to win the most lucrative contracts associated with major infrastructure and resource extraction projects.

## **Section 11: Sustainable Tourism and Eco-Tourism**

### **A. Sector Overview and Key Drivers**

Sustainable Tourism and Eco-tourism represent a significant growth area for Ghana's green economy, leveraging the country's rich natural and cultural heritage. The sector is driven by a national strategy to promote community-based ecotourism (CBET) as a tool for conservation and local economic development, as championed by the Ministry of Tourism, Culture & Creative Arts.<sup>129</sup> The National Green Jobs Strategy also identifies ecotourism as a priority sector for job creation.<sup>7</sup> The core idea is to create tourism experiences that are environmentally responsible, support the well-being of local communities, and contribute to the conservation of biodiversity. Success stories like the Boabeng-Fiema and Tafi Atome Monkey Sanctuaries demonstrate the viability of this model, where traditional beliefs and community management are aligned with conservation goals.<sup>129</sup>

### **B. Occupational Map**

#### **1. Formal/Salaried Roles:**

- **Eco-Lodge/Sustainable Tourism Operations Manager:** This role involves managing the day-to-day operations of a hotel, lodge, or resort with a strong commitment to sustainability. Responsibilities include implementing energy

and water conservation measures, managing waste, sourcing local products, and ensuring a minimal environmental footprint.

- **Community-Based Tourism Coordinator:** Often employed by an NGO, a conservation project, or a local tourism authority, this person works as a facilitator between a local community and the tourism market. They help the community develop tourism products (e.g., guided walks, cultural performances), build capacity in hospitality and business management, and establish equitable benefit-sharing mechanisms.
- **Conservation-Focused Hospitality Staff:** Roles within eco-lodges, such as chefs focused on farm-to-table cuisine, maintenance staff trained in renewable energy systems, or guest relations staff who educate visitors on local conservation efforts.

## 2. **Contract/Freelance/Gig Work:**

- **Eco-Tour Guide:** This is the most common and accessible role in the sector. Guides are often local community members with deep knowledge of the local flora, fauna, and culture. They lead tourists on hikes, bird-watching tours, or cultural excursions. This is frequently a freelance or part-time role, with demand peaking during tourist seasons.
- **Sustainable Tourism Consultant:** Experts hired by communities, NGOs, or investors to develop ecotourism plans, conduct feasibility studies, and design sustainable tourism products.

## 3. **Informal/Community-Based Roles:**

1. **Homestay Provider:** Local families who offer accommodation to tourists in their homes, providing an authentic cultural experience and generating direct income.
2. **Local Craft Producer / Artisan:** Individuals who produce and sell traditional crafts, food, and other goods to tourists, creating a direct link between tourism spending and the local economy.
3. **Community Performers:** Local cultural troupes that perform traditional music and dance for visitors, often on a per-performance fee basis.

## C. **Geographic Distribution and Location Intelligence**

- **Key Ecotourism Sites:** Opportunities are concentrated around Ghana's key natural attractions and protected areas.

- **Volta Region:** Known for its lush landscapes, waterfalls (like Wli), and community-based sanctuaries like the Tafi Atome Monkey Sanctuary.
- **Bono and Ahafo Regions:** Home to the Boabeng-Fiema Monkey Sanctuary, a prime example of successful CBET.<sup>129</sup>
- **Central Region:** Kakum National Park, with its famous canopy walk, is a major ecotourism hub, supporting numerous guide and hospitality jobs in the surrounding area.
- **Northern Region:** Mole National Park offers wildlife safari experiences, creating jobs for guides, trackers, and lodge staff.
- **Coastal Zones:** Opportunities for marine ecotourism (e.g., turtle watching) and sustainable beach resorts exist along the coast.
- **Urban Hubs (Accra, Kumasi):** While the activities are rural, the booking and marketing side of the industry is often based in urban centers, with tour operators and travel agencies located in Accra and Kumasi.
- **Seasonal Patterns:** Employment, particularly for freelance guides and community-based roles, is highly seasonal. Demand peaks during the main tourist seasons (typically December-January and the summer months of July-August) and can be significantly lower during the rainy season.

#### D. Skills and Competency Profile

- **Technical Skills:**
  - **Nature Interpretation and Guiding:** The ability to identify local flora and fauna and interpret the natural environment for tourists in an engaging and educational manner.
  - **Local Environmental Knowledge:** Deep, often traditional, knowledge of the local ecosystem, animal behaviors, and plant uses.
  - **Safety and First Aid:** Essential skills for guides leading tours in natural or remote areas.
  - **Sustainable Hospitality Management:** For managers, skills in implementing energy/water efficiency, waste management, and sustainable procurement practices in a hospitality setting.
  - **Foreign Language Skills:** Proficiency in languages like French, German, or Spanish can be a significant advantage for guides and hospitality staff catering to international tourists.

- **Interpersonal and Management Capabilities:**
  - **Cross-Cultural Communication:** The ability to interact respectfully and effectively with both international tourists and local community members is paramount.
  - **Storytelling:** A key skill for guides to make the natural and cultural heritage come alive for visitors.
  - **Community Engagement and Facilitation:** For coordinators, the ability to build trust and facilitate participatory planning processes within communities is crucial.
  - **Entrepreneurship and Marketing:** Essential for independent guides, lodge owners, and community groups to market their services and attract visitors. Digital marketing skills (e.g., social media management) are increasingly important.<sup>129</sup>
  - **Problem-Solving and Adaptability:** The ability to handle unexpected situations, from changes in weather to logistical challenges, is vital in tourism operations.

## E. Career and Educational Pathways

1. **Formal Education:**
  - **Degree Programs:** KNUST offers a BA in Culture and Tourism, and the University for Development Studies (UDS) offers a BSc in Ecotourism and Hospitality Management, providing formal qualifications for the sector.<sup>131</sup>
  - **Vocational Training:** Hospitality schools provide training in hotel management, catering, and customer service, which are applicable to sustainable tourism operations.
2. **Professional Certifications/Training:**
  - **Tour Guiding Certification:** The Ghana Tourism Authority provides licensing and training for tour guides.
  - **Sustainable Tourism Certification:** While not widespread in Ghana, international certifications from bodies like the Global Sustainable Tourism Council (GSTC) are available and can enhance a professional's credentials.<sup>133</sup> Online platforms also offer professional certificates in Ecotourism Management.<sup>134</sup>
3. **Career Progression:** Many professionals in this sector start through informal or

community-based routes. A local resident may begin as a porter or assistant guide, and with experience and training, become a lead guide. A lead guide might eventually start their own small tour company. In the formal hospitality track, one could start in a junior role at an eco-lodge and progress to a departmental supervisor and eventually to General Manager.

## **F. Sector-Specific Insights**

The success and employment potential of Ghana's ecotourism sector are intrinsically linked to the principle of community ownership and governance. The most celebrated and resilient ecotourism models in the country, such as the monkey sanctuaries at Boabeng-Fiema and Tafi Atome, are those where the local community is not just a passive recipient of benefits but an active steward and primary beneficiary of the tourism enterprise.<sup>129</sup> This creates a unique employment dynamic where the most valuable "skill" is often deep, indigenous knowledge of the local environment and culture. This reality necessitates a different approach to workforce development. Rather than focusing solely on formal academic qualifications, the key is to build capacity within the communities themselves. This creates a demand for a specific type of professional: the

**Community-Based Tourism Coordinator.** This individual's job is not to manage the site themselves, but to empower the community to do so by providing training in hospitality, business management, marketing, and establishing transparent benefit-sharing systems. This focus on community-led development ensures the authenticity of the tourist experience and the long-term sustainability of both the natural resource and the jobs that depend on it.

## **Section 12: Green Finance and Sustainable Investment**

### **A. Sector Overview and Key Drivers**

Green Finance is an emerging but critically important enabling sector for Ghana's entire green economy. It is not a large direct employer, but the availability of its services determines the viability and scale of job creation in all other green sectors. The sector is driven by the immense capital requirements of the green transition (e.g., the ETIP's USD 550 billion price tag) and the corresponding need to mobilize private capital.<sup>2</sup> Key policy drivers include the development of a

**Ghana Green Finance Taxonomy (2024)** to define and classify green investments, and a growing recognition within the financial sector that carbon credits can be used as collateral to de-risk lending.<sup>61</sup> The UN's PAGE program has been active in this area, conducting studies on scaling up green finance and working with the Ministry of Finance and the Bank of Ghana.<sup>19</sup>

## B. Occupational Map

### 1. Formal/Salaried Roles:

- **Environmental, Social, and Governance (ESG) Manager/Analyst:** A role emerging within banks, investment firms, and large corporations. These professionals are responsible for developing and implementing ESG strategies, screening investments against ESG criteria, and managing ESG reporting.<sup>136</sup> The ARB APEX Bank, for instance, has advertised for an ESG Manager to provide technical expertise on sustainability risks.<sup>136</sup>
- **Sustainable Investment Analyst:** Works for asset management firms or pension funds, analyzing companies and projects based on their environmental and social performance to guide investment decisions.
- **Green Project Finance Coordinator:** A specialized role in development banks or the project finance departments of commercial banks. They structure financing for large-scale green projects, such as renewable energy plants or waste-to-energy facilities.
- **Climate Finance Manager:** A senior role, often within large corporations like Oando, responsible for managing climate-related financial risks, securing green finance, and managing carbon credit portfolios.<sup>128</sup>
- **Microfinance Specialist (Green Focus):** Works for microfinance institutions or projects like the GrEEen project, developing and delivering financial products (loans, savings) tailored to the needs of small-scale green

entrepreneurs (e.g., clean cookstove producers, organic farmers).<sup>20</sup>

## 2. **Contract/Freelance/Gig Work:**

- **Green Bond Certification Consultant:** Experts who advise governments or corporations on the process of issuing green bonds, ensuring they meet the requirements of international standards like the Green Bond Principles.
- **ESG Reporting Consultant:** Specialists hired by companies to assist with the preparation of their annual sustainability or ESG reports, ensuring compliance with frameworks like the Global Reporting Initiative (GRI).

## C. Geographic Distribution and Location Intelligence

- **Primary Hub (Greater Accra):** Employment in this sector is almost exclusively located in Accra, the nation's financial capital. This is where the Bank of Ghana, the Ghana Stock Exchange, the headquarters of all major commercial banks, investment firms, and the Ministry of Finance are situated.
- **Remote/Digital Work:** The analytical and report-based nature of this work makes it highly suitable for remote and digital models. An analyst in Accra can screen investments or structure deals for projects located anywhere in the country or even internationally.

## D. Skills and Competency Profile

### 1. **Technical Skills:**

- **Financial Modeling:** Advanced skills in building financial models to assess the viability and returns of green projects.
- **ESG Analysis and Integration:** The ability to analyze non-financial ESG data and integrate it into traditional investment analysis and risk management processes.<sup>136</sup>
- **Knowledge of Green Finance Instruments:** Familiarity with products like green bonds, carbon credits, debt-for-nature swaps, and blended finance structures.<sup>61</sup>
- **Climate Risk Assessment:** Understanding of frameworks for assessing physical and transition risks associated with climate change on investment



portfolios.

- **Carbon Market Knowledge:** Understanding how carbon credits are generated and traded, and how they can be used as a financial asset.<sup>61</sup>
- **Familiarity with ESG Reporting Standards:** Knowledge of standards like GRI, SASB, and the TCFD recommendations.<sup>128</sup>

## 2. **Interpersonal and Management Capabilities:**

- **Analytical and Critical Thinking:** The ability to critically assess complex financial and sustainability data.
- **Stakeholder Engagement:** Building relationships with investors, project developers, regulators, and international finance institutions.<sup>128</sup>
- **Strategic Advisory:** Ability to provide strategic advice to senior management and clients on navigating the opportunities and risks of the green economy.
- **Communication:** Skill in communicating the business case for sustainable investment to a financial audience.

## E. Career and Educational Pathways

1. **Formal Education:** A strong background in Finance, Economics, Business Administration, or Accounting is essential. A Master's degree (e.g., MBA, MSc in Finance or Economics) is often required for senior roles. A dual qualification or background in an environmental field (e.g., a BSc in Environmental Science followed by an MBA) is highly advantageous.<sup>128</sup>
2. **Professional Certifications/Training:** This field is increasingly reliant on specialized professional certifications to demonstrate expertise. Key credentials include:
  - **Chartered Financial Analyst (CFA):** The CFA Institute now incorporates ESG factors into its curriculum.
  - **GARP Sustainability and Climate Risk (SCR) Certificate:** A globally recognized credential for climate risk professionals.<sup>128</sup>
  - **GRI Standards Certification:** For professionals focused on sustainability reporting.<sup>128</sup>
  - **Certified ESG Professional** and other similar designations.
3. **Career Progression:** A professional might start as a financial analyst and develop a specialization in sustainable finance. They could then progress to become a dedicated ESG Analyst, a Portfolio Manager for a green fund, a

Director of Sustainable Finance at a bank, or a Climate Finance Advisor to the government.

## **F. Sector-Specific Insights**

The green finance sector in Ghana is at a crucial inflection point, moving from theoretical discussion to practical application. The development of the Ghana Green Finance Taxonomy and the active exploration of using carbon credits as collateral are creating the necessary architecture for a functional green capital market.<sup>61</sup> This is fundamentally changing the nature of risk and opportunity for financial institutions. It implies that bank loan officers and credit risk managers will need to be retrained to understand and value new forms of collateral (carbon credits) and assess new types of risk (climate vulnerability). This creates a significant internal capacity-building challenge for the entire banking sector but also a major opportunity for professionals who can develop this niche expertise. The emergence of roles like "ESG Manager" within traditional banks like ARB APEX Bank is a clear indicator of this mainstreaming process.<sup>136</sup> The professionals who will be most in demand are those who can act as translators, bridging the gap between the technical world of environmental projects and the quantitative world of financial risk and return.

## **Section 13: Forestry Management and Reforestation**

### **A. Sector Overview and Key Drivers**

Forestry Management and Reforestation is a traditional green sector in Ghana that is being revitalized by new economic drivers and climate imperatives. The sector is anchored by the Forestry Commission (FC), the state agency responsible for managing the nation's forest reserves and protected areas.<sup>57</sup> Key drivers of employment include the government's policy of undertaking plantation development to restore degraded forest areas and increase timber production.<sup>57</sup> This is

complemented by major international climate finance initiatives, most notably the Ghana Cocoa Forest REDD+ Programme, which provides financial incentives for preventing deforestation in cocoa-growing landscapes, and the World Bank-funded GLRSSMP.<sup>34</sup> These programs are creating new roles that combine traditional forestry with modern carbon accounting and community engagement.

## B. Occupational Map

- **Formal/Salaried Roles:**

1. **Forest Resource Manager / Forester:** The core profession in the sector, employed by the Forestry Commission and large timber companies. They are responsible for managing forest estates, planning sustainable harvesting operations, and overseeing reforestation activities. A CV on Ghanajob.com lists a "Forester" with over 10 years of experience.<sup>137</sup>
2. **Reforestation Project Coordinator:** A role focused on managing large-scale tree planting projects, from nursery production to planting and maintenance. This is a key role in government initiatives like the Green Ghana Day and in projects funded by development partners.
3. **Sustainable Timber Value Chain Specialist:** Professionals who work on improving the sustainability and efficiency of the timber supply chain, from legal harvesting and processing to marketing and export. This can include roles in certification (e.g., FSC) and trade monitoring.
4. **Community Forestry Program Manager:** Employed by NGOs or the FC, these managers work with communities living near forest reserves to develop co-management agreements, promote sustainable livelihoods (like beekeeping or snail farming), and reduce pressure on forest resources.
5. **Planning Forester / GIS and Monitoring Manager:** Specialized roles, such as those advertised by companies like EcoPlanet Bamboo, that use GIS and remote sensing to plan plantation layouts, monitor forest health, and track changes in forest cover.<sup>101</sup>

- **Contract/Freelance/Gig Work:**

- **Nursery Operator:** Individuals or small businesses contracted to raise tree seedlings for reforestation projects.
- **Tree Planter:** A seasonal, labor-intensive role, with demand peaking during the rainy season for large-scale planting campaigns. This is often a form of

gig-based work for community members.

- **Internships/Apprenticeships:**

1. The Forestry Commission and its divisions offer national service placements and internships for graduates of forestry and natural resource management programs.
2. A CV on Ghanajob.com shows a recent graduate who did their national service with the Forest Services Division of the FC.<sup>100</sup>

### C. Geographic Distribution and Location Intelligence

1. **Policy Hub (Accra):** The headquarters of the Forestry Commission and the Ministry of Lands and Natural Resources are in Accra, concentrating policy, senior management, and administrative roles there.
2. **Operational Hubs (Regional and District Forestry Offices):** The bulk of forestry jobs are decentralized across the country's forest zones. The FC operates a network of regional and district offices that serve as operational hubs for forest managers, technicians, and forest guards. Key regions include **Ashanti, Bono, Ahafo, Western, and Eastern**.
3. **Project Sites:** Reforestation and community forestry projects are located in specific degraded landscapes, often in the transition and forest zones. The GLRSSMP, for example, targets 13 specific sub-basins for its interventions.<sup>34</sup>
4. **Remote/Digital Work:** High potential for roles in GIS, remote sensing, and data analysis for forest monitoring. A GIS and Monitoring Manager can be based in a central office while analyzing satellite data from across the country.

### D. Skills and Competency Profile

- **Technical Skills:**

- **Sustainable Forest Management (SFM):** Core principles and practices of managing forests for economic, social, and environmental benefits.
- **Silviculture:** The art and science of controlling the establishment, growth, composition, and health of forests. This includes nursery management, planting techniques, and thinning operations.

- **Forest Inventory and Mensuration:** Skills in measuring trees and forest stands to estimate timber volume and growth rates.
- **GIS and Remote Sensing:** Essential modern tools for mapping forest cover, planning harvesting operations, and monitoring deforestation.<sup>101</sup>
- **Carbon Stock Assessment:** A specialized skill required for REDD+ and other carbon finance projects, involving methods to measure the amount of carbon stored in a forest.
- **Wood Science and Technology:** Knowledge of wood properties and processing, relevant for roles in the timber industry.
- **Interpersonal and Management Capabilities:**
  1. **Community Engagement and Co-management:** Ability to work collaboratively with local communities to manage forest resources is central to modern forestry in Ghana.
  2. **Law Enforcement and Patrol:** For forest guards, skills in patrolling, detecting illegal activities, and enforcing forestry laws are critical.
  3. **Project Management:** For coordinators of reforestation or community forestry projects.
  4. **Value Chain Analysis:** Understanding the entire timber or non-timber forest product value chain to identify opportunities for sustainable development.

## E. Career and Educational Pathways

- **Formal Education:** A BSc in Natural Resources Management, Forestry, Forest Resources Technology, or Agroforestry is the standard qualification. KNUST's Faculty of Renewable Natural Resources is a primary training institution, offering degrees in these specific areas.<sup>96</sup> The University of Energy and Natural Resources (UENR) also offers relevant programs.
- **Professional Certifications/Training:** The Forestry Commission Training Centre (FCTC) at Akywrom-Ejisu provides vocational and technical training for the sector.<sup>59</sup> Professional foresters can also seek certification from bodies like the Ghana Institution of Surveyors.
- **Career Progression:** A typical path in the Forestry Commission starts as an Assistant District Manager or Technical Officer, progressing to District Manager, Regional Manager, and potentially a Director-level position at the headquarters. In the private sector, one might start as a plantation supervisor and move up to

become a forest estate manager or a sustainability manager for a large timber company.

## **F. Sector-Specific Insights**

The forestry sector is undergoing a profound economic transformation, driven by the integration of carbon finance. This is shifting the perception of forests from being solely a source of timber to being a valuable asset for carbon sequestration. This change is creating a new and sophisticated job market that merges traditional forestry with climate finance. The success of the Ghana Cocoa Forest REDD+ Programme demonstrates that there is a viable international market for the carbon credits generated by preventing deforestation.<sup>61</sup> This creates demand for a new type of forestry professional: one who understands not only silviculture and ecology but also the complex methodologies of carbon accounting, the legal frameworks of international carbon markets, and the financial structuring of emissions reduction projects. These "carbon foresters" require a hybrid skillset that is currently in short supply, representing a significant opportunity for workforce development. It also means that forestry jobs are no longer limited to the public sector and timber companies; they are now emerging in financial institutions, carbon development firms, and specialized environmental consultancies.

## **Section 14: Clean Transport and Mobility Solutions**

### **A. Sector Overview and Key Drivers**

The Clean Transport sector in Ghana is in its early stages but holds immense potential for job creation, driven by the government's ambitious targets in the Energy Transition and Investment Plan (ETIP). The ETIP aims for 90% of all vehicles to be electric by 2050, with a full phase-out of fossil fuel vehicles by 2060.<sup>1</sup> This represents a fundamental transformation of the country's mobility landscape. The primary

drivers are the need to reduce Ghana's reliance on expensive imported petroleum products, curb urban air pollution, and meet national greenhouse gas emission reduction targets. The Energy Commission's "Drive Electric" initiative is a key government program designed to promote the adoption of electric vehicles (EVs) and develop the necessary supporting infrastructure.<sup>54</sup>

## B. Occupational Map

- **Formal/Salaried Roles:**

1. **Electric Vehicle (EV) Service Technician/Mechanic:** A critical new technical role. As the number of EVs increases, there will be a growing demand for technicians skilled in diagnosing and repairing EV-specific components like batteries, electric motors, and charging systems.
2. **EV Charging Station Manager/Technician:** Professionals responsible for the installation, operation, and maintenance of public and private EV charging stations. This includes managing billing systems, troubleshooting technical issues, and ensuring network reliability.
3. **Sustainable Transport Planner:** Employed by Metropolitan, Municipal, and District Assemblies (MMDAs) or urban planning consultancies, these professionals design transport systems that prioritize public transit, walking, and cycling over private car use. They work on projects like creating dedicated bus lanes, building cycling infrastructure, and integrating transport modes.
4. **Mobility as a Service (MaaS) Platform Developer:** Software developers and data scientists who create digital platforms that integrate various transport options (e.g., ride-hailing, public buses, bike-sharing) into a single, seamless service for users.

- **Contract/Freelance/Gig Work:**

- **EV Charging Point Installer:** Electricians with specialized training contracted to install home or commercial EV charging points.
- **Battery Swap Station Operator:** As battery-swapping models emerge (particularly for electric motorcycles), there will be opportunities for individuals to operate these stations on a franchise or contract basis.

- **Informal/Community-Based Roles:**

1. **Non-Motorized Transport (NMT) Coordinator:** A role within community-

based organizations or local government focused on promoting walking and cycling. This could involve organizing "car-free days," advocating for safer pedestrian crossings, or managing community bike-sharing schemes.

2. **Bicycle Repair Mechanic:** As cycling becomes a more popular mode of transport, the demand for skilled bicycle mechanics in the informal sector will increase.

### C. Geographic Distribution and Location Intelligence

1. **Primary Urban Centers (Accra, Kumasi):** The initial roll-out of EVs and charging infrastructure will be concentrated in major cities where purchasing power is higher and travel distances are shorter. Accra and Kumasi will be the primary hubs for EV sales, servicing, and public charging networks. Sustainable transport planning roles will also be concentrated in the planning departments of these large metropolises.
2. **Major Transport Corridors:** As the EV market matures, charging stations will need to be deployed along major highways connecting Ghana's cities, creating technical jobs in these transit locations.
3. **Remote/Digital Work:** The development and management of MaaS platforms and the software that runs EV charging networks are highly conducive to remote work, creating opportunities for software developers and IT professionals across the country.

### D. Skills and Competency Profile

1. **Technical Skills:**
  - **EV Diagnostics and Repair:** Specialized knowledge of high-voltage battery systems, electric motor maintenance, and the use of EV-specific diagnostic software.
  - **Electrical Installation:** Skills in safely installing high-power EV charging equipment, adhering to electrical codes and standards.
  - **Urban and Transport Planning:** Expertise in land-use planning, traffic flow analysis, and designing infrastructure for public and non-motorized transport.



- **Software and App Development:** For MaaS platforms, skills in mobile app development, data management, and payment gateway integration are essential.
  - **Battery Technology:** Knowledge of battery chemistry, performance characteristics, and end-of-life management (recycling/repurposing) will become increasingly important.
2. **Interpersonal and Management Capabilities:**
- **Customer Service:** For EV service technicians and charging station operators interacting with a new set of vehicle owners.
  - **Urban Policy and Advocacy:** For transport planners, the ability to advocate for and navigate the political process of reallocating road space for buses, cyclists, and pedestrians.
  - **Business Development:** For companies seeking to build and operate charging networks or other mobility services.

## E. Career and Educational Pathways

1. **Formal Education:**
  - **Technical Roles:** Diplomas and certificates from technical universities and vocational training institutes in Automotive Engineering, Electrical Engineering, or Mechatronics will be the primary pathway for EV technicians. Institutions will need to update their curricula to include EV-specific modules.
  - **Planning Roles:** A degree in Urban Planning, Transport Planning, or Civil Engineering from institutions like KNUST is required for transport planning positions.
2. **Professional Certifications/Training:**
  1. **EV Technician Certification:** As the market grows, specialized certification programs for EV maintenance and repair will become essential. These may be offered by vehicle manufacturers, training institutes, or industry associations.
  2. The **Energy Academy** may expand its offerings to include courses on EV charging infrastructure and standards.<sup>56</sup>
3. **Career Progression:** An individual could start as an apprentice mechanic, get certified as an EV technician, and eventually become a master technician or the service manager of an EV dealership. A junior transport planner could advance to become the head of a city's transport department or a principal consultant in a

planning firm.

## **F. Sector-Specific Insights**

The transition to clean transport in Ghana presents a classic "chicken and egg" challenge that will define the initial phase of job creation. The widespread adoption of EVs is contingent on the availability of a reliable and extensive charging infrastructure, yet private investment in building that infrastructure is dependent on a critical mass of EVs being on the road. This interdependency means that the first wave of employment will likely be driven by government and donor-led initiatives aimed at breaking this cycle. Programs like the Energy Commission's "Drive Electric" and potential public-private partnerships to roll out an initial network of public charging stations will be crucial "market-making" activities.<sup>54</sup> Consequently, the earliest job opportunities will be for the technicians and engineers who install and maintain this foundational infrastructure, and for the program managers who oversee its deployment. Only after this initial network is established and consumer confidence grows will the more widespread jobs in vehicle sales, private servicing, and ancillary services begin to scale up significantly.

## **Section 15: Environmental Education and Capacity Building**

### **A. Sector Overview and Key Drivers**

Environmental Education and Capacity Building is a foundational sector that underpins the success of the entire green economy by developing the necessary human capital and fostering public support. The demand for these roles is driven by the recognition that a green transition requires not just new technologies, but also a shift in skills, knowledge, and mindsets across all levels of society. Key drivers include the National Green Jobs Strategy's focus on skills development<sup>6</sup>, the need for public awareness campaigns to support policies like energy efficiency<sup>138</sup>, and the

proliferation of new green technologies and business models that require a trained workforce. This sector is populated by universities, training centers, NGOs, and the training departments of government agencies and private companies.

## B. Occupational Map

- **Formal/Salaried Roles:**

1. **Sustainability/Environmental Science Lecturer/Professor:** Academics at universities like the University of Ghana and KNUST who teach and conduct research in environmental science, climate change, and sustainable development, training the next generation of green professionals.<sup>75</sup>
2. **Capacity Building Facilitator / Trainer:** Professionals who design and deliver training workshops on specific green topics. This includes trainers at the Energy Academy teaching renewable energy courses <sup>56</sup>, GIZ-funded consultants training startup hubs on the circular economy <sup>124</sup>, or NGO staff training farmers in climate-smart agriculture.
3. **Environmental Awareness Program Coordinator:** Employed by NGOs (e.g., Earth Care Ghana, Ghana Youth Environmental Movement) or government agencies (e.g., EPA), these individuals design and run public education campaigns on issues like plastic pollution, conservation, or energy saving.<sup>89</sup>
4. **Educational Curriculum Developer:** Specialists who develop educational materials on environmental topics for use in schools, universities, or vocational training programs. For example, GIZ has supported the development of teaching resources on net metering.<sup>29</sup>

- **Contract/Freelance/Gig Work:**

1. **Specialist Workshop Facilitator:** Experts hired on a short-term basis to deliver training on a niche topic, such as ESG reporting, EIA methodology, or a specific green technology.
2. **Environmental Journalist/Communicator:** Freelance writers, bloggers, and media professionals who specialize in communicating environmental issues to the public.

- **Informal/Community-Based Roles:**

1. **Community Sensitization Agent:** Local individuals engaged by projects to conduct door-to-door education or community meetings on topics like sanitation or waste segregation, often communicating in local languages.<sup>48</sup>

2. **Peer Educator:** In youth or farmer groups, selected members are often trained to educate their peers on new practices or environmental issues.

### C. Geographic Distribution and Location Intelligence

- **Academic and Policy Hubs (Accra, Kumasi, Cape Coast, Sunyani):** University-level teaching and curriculum development roles are concentrated in the cities that host major universities (UG, KNUST, UCC, UENR). Accra is also the hub for national-level campaign coordination and policy-focused capacity building.
- **Decentralized Training:** While high-level training is centralized, capacity building for specific sectors is delivered where the need is greatest. Agricultural training is concentrated in rural areas, waste management training in urban centers, and conservation education near protected areas.
- **Remote/Digital Work:** This sector has a very high potential for remote and digital delivery. Online learning platforms (like the Energy Academy's online portal) <sup>56</sup>, webinars, and the development of digital educational content allow trainers and curriculum developers to reach a nationwide audience from any location.

### D. Skills and Competency Profile

- **Technical Skills:**
  1. **Subject Matter Expertise:** Deep knowledge in a specific green domain (e.g., renewable energy, circular economy, sustainable agriculture) is a prerequisite for any training or teaching role.
  2. **Instructional Design and Curriculum Development:** The ability to structure complex information into effective and engaging learning modules and materials.
  3. **Facilitation and Training Delivery:** Skills in leading interactive workshops, managing group dynamics, and adapting teaching methods to different audiences (from rural farmers to corporate executives).
  4. **Communication and Media Skills:** For awareness campaigns, skills in public

speaking, media relations, and social media content creation are essential.

5. **E-learning Technologies:** Proficiency with learning management systems (LMS), webinar platforms, and other digital education tools.

- **Interpersonal and Management Capabilities:**

- **Public Speaking and Presentation Skills:** The ability to communicate information clearly and persuasively to large and small groups.
- **Cross-Cultural Communication:** Essential for trainers working with diverse communities across Ghana.
- **Mentorship and Coaching:** Particularly important for those working with entrepreneurs and young professionals.
- **Program Management:** Skills to plan, budget, and manage the logistics of large-scale training programs or awareness campaigns.

## **E. Career and Educational Pathways**

- **Formal Education:** For academic roles, a PhD is typically required. For other training and coordination roles, a Master's degree in a relevant technical field or in a field like Development Communication or Education is common.
- **Professional Certifications/Training:** "Train the Trainer" programs are valuable for developing facilitation skills. Certifications in specific technical areas (e.g., Certified Energy Manager) also lend credibility to trainers.
- **Career Progression:** A professional might start as a program assistant at an NGO, gain experience in facilitating community meetings, and then specialize as a full-time trainer or capacity building coordinator. An academic could progress from Lecturer to Senior Lecturer and Professor. An experienced practitioner in any green field could also transition into a part-time or full-time training role later in their career.

## **F. Sector-Specific Insights**

The capacity building sector in Ghana is characterized by a multi-layered ecosystem of providers, each catering to a different segment of the workforce. At the highest level, universities like UG and KNUST provide the foundational theoretical knowledge

and research capabilities for future leaders and innovators.<sup>75</sup> In the middle, specialized institutions like the Energy Commission's Energy Academy and the Forestry Commission's Training Centre offer targeted, professional-level training to upskill the existing workforce and bridge the gap between academia and industry.<sup>56</sup> At the grassroots level, a diverse array of NGOs and donor-funded projects conduct vital, hands-on capacity building for communities, farmers, and informal sector workers, often focusing on practical skills and behavioral change.<sup>47</sup> This segmentation reveals that there is no single approach to "green education." The key challenge and opportunity lie in creating stronger linkages between these layers. For instance, universities could partner with NGOs to offer credited field-based learning experiences for their students, while professional training centers could develop "micro-credential" programs to formalize the skills learned by informal sector workers, creating a more integrated and effective national system for green human capital development.

## **Section 16: Green Technology and Innovation**

### **A. Sector Overview and Key Drivers**

Green Technology and Innovation is a dynamic, cross-cutting sector that fuels progress across all other areas of the green economy. It involves the research, development, and deployment of new technologies and digital solutions to solve environmental challenges. The sector is driven by a vibrant startup ecosystem, supported by incubators like the Ghana Climate Innovation Centre (GCIC), which provides funding, mentorship, and technical support to green entrepreneurs.<sup>4</sup> Government policy, such as the National Science, Technology and Innovation Policy, also supports the development of alternative energy sources and energy-efficient technologies.<sup>44</sup> The sector is characterized by a focus on locally appropriate solutions, from digital platforms for waste management to innovative agricultural technologies.

## B. Occupational Map

### 1. Formal/Salaried Roles:

- **Clean Technology Research and Development (R&D) Scientist:** Works in universities, research institutes (e.g., CSIR, GAEC), or the R&D departments of larger companies. They conduct research to develop new green technologies, such as more efficient solar panels, new biofuel processes, or biodegradable materials. A recent KNUST study, for example, assessed the economic potential of recycling PV waste.<sup>142</sup>
- **Environmental Monitoring Technology Specialist:** Develops and deploys sensor networks, drones, and other technologies to monitor environmental parameters like air quality, water pollution, or deforestation in real-time.
- **Digital Platform Developer (Environmental Applications):** Software engineers and developers who build apps and platforms for the green economy. Examples include the software used by Jumeni for waste management logistics<sup>121</sup> or platforms that provide climate information services to farmers.
- **Innovation Program Coordinator/Manager:** Employed by incubators like the GCIC or by corporate innovation hubs. They are responsible for scouting for new startups, managing incubation programs, and connecting entrepreneurs with mentors and investors.<sup>28</sup>

### 2. Contract/Freelance/Gig Work:

1. **Freelance App Developer:** Developers hired by green startups or NGOs to build specific mobile applications or websites for their projects.
2. **Technology Consultant:** Experts in a specific green technology (e.g., BSF, solar irrigation) who provide consulting services to companies or projects looking to adopt that technology.

### 3. Entrepreneurial Roles:

1. **Clean Tech Startup Founder:** The core of the innovation ecosystem. These are entrepreneurs who have identified an environmental problem and are building a technology-based business to solve it. The GCIC has supported dozens of such ventures in areas like waste management (Coliba, Wasteman Ghana) and energy efficiency (SmartWatt).<sup>4</sup>

## C. Geographic Distribution and Location Intelligence

1. **Innovation Hub (Greater Accra):** Accra is the primary hub for green tech and innovation. It hosts the main incubators and accelerators (GCIC, Impact Hub Accra), the majority of tech startups, and the venture capital and angel investor community.<sup>140</sup>
2. **Secondary Hub (Kumasi):** Kumasi has a growing startup ecosystem, supported by its proximity to KNUST, a major source of engineering and tech talent. GIZ has supported initiatives to strengthen the startup ecosystem in Kumasi.<sup>22</sup>
3. **Decentralized Deployment:** While development is centralized, the deployment of green technologies happens across the country. Agricultural technology (AgriTech) solutions are deployed in farming communities, while off-grid energy solutions are deployed in remote areas.
4. **Remote/Digital Work:** This sector is exceptionally well-suited for remote work. Software development, data analysis, and digital platform management can be done from anywhere, allowing Ghana to tap into a global talent pool and for Ghanaian developers to work on international projects.

#### D. Skills and Competency Profile

- **Technical Skills:**
  1. **Software and App Development:** Proficiency in programming languages, mobile app development (iOS/Android), and web development is fundamental for digital solutions.
  2. **Data Science and Analytics:** Skills in data analysis, machine learning, and AI are increasingly used to optimize green systems, from predicting crop yields to managing energy grids.
  3. **Hardware Engineering and Prototyping:** For physical technologies, skills in electronics, mechanical engineering, and rapid prototyping (e.g., 3D printing) are essential.
  4. **Biotechnology:** For innovations in areas like biofuels, bioremediation, or bio-pesticides, expertise in biotechnology is required. The Biotechnology and Nuclear Agriculture Research Institute (BNARI) is active in this area.<sup>116</sup>
  5. **User Interface/User Experience (UI/UX) Design:** Critical for ensuring that digital green solutions are user-friendly and accessible to their target audience (e.g., farmers, waste collectors).



- **Interpersonal and Management Capabilities:**
  - **Entrepreneurial Mindset:** A core attribute for startup founders, involving creativity, risk-taking, and resilience.
  - **Lean Startup Methodology:** Understanding of how to rapidly build, test, and iterate on a business idea to find a product-market fit.
  - **Pitching and Fundraising:** The ability to clearly articulate a business vision and persuade investors to provide capital is crucial for entrepreneurs.
  - **Agile Project Management:** A project management approach well-suited to the fast-paced and iterative nature of technology development.
  - **Design Thinking:** A human-centered approach to innovation that focuses on deeply understanding user needs.

## E. Career and Educational Pathways

- **Formal Education:** Degrees in Computer Science, Software Engineering, Mechanical Engineering, Electrical Engineering, or Biotechnology from institutions like KNUST, Ashesi University, and the University of Ghana provide the foundational technical skills.
- **Professional Certifications/Training:**
  1. **Incubation/Acceleration Programs:** The most important form of "training" in this sector is participation in a program like the one offered by the **Ghana Climate Innovation Centre (GCIC)**. These programs provide not just skills but also mentorship, networking, and access to finance.<sup>4</sup>
  2. **Coding Bootcamps and Tech Hubs:** Numerous private tech hubs in Accra and Kumasi offer intensive training in software development and other digital skills.
- **Career Progression:** A software developer might work for a few tech companies before deciding to launch their own green tech startup. A researcher might spin out a new technology from a university lab into a commercial venture. A successful entrepreneur might later become a mentor or an angel investor, reinvesting their capital and expertise back into the ecosystem.

## F. Sector-Specific Insights

The green technology and innovation sector in Ghana is heavily reliant on a supportive ecosystem that bridges the gap between raw ideas and viable businesses. The Ghana Climate Innovation Centre (GCIC), managed by a consortium including Ashesi University, plays a disproportionately significant role in this process.<sup>140</sup> It functions as a critical nexus, providing the "3 M's" that early-stage ventures need:

**Mentorship** (business advisory and coaching), **Methodology** (structured incubation and business development support), and **Money** (proof-of-concept grants).<sup>141</sup> The success of the GCIC and similar hubs demonstrates that job creation in this sector is not just about fostering individual entrepreneurs, but about building the institutional infrastructure that surrounds them. The most critical jobs in this ecosystem are therefore not just the startup founders themselves, but the

**Innovation Program Coordinators, Venture Acceleration Managers, and Technical Mentors** who run these incubators. These are the "enablers" who de-risk early-stage innovation and create the fertile ground from which dozens of new green tech companies and the jobs they create can grow.

## **Part III: Cross-Cutting Workforce Analysis and Strategic Insights**

### **Section 17: National Skills and Competency Matrix**

A comprehensive analysis of employment opportunities across Ghana's diverse green economy sectors reveals a clear and consistent pattern of required skills. While each sector has its unique technical demands, a core set of cross-cutting competencies in project management, data analysis, and stakeholder engagement emerges as universally valuable. This matrix provides a consolidated view of the most in-demand skills, offering a strategic guide for workforce development, curriculum design, and individual career planning.

## 17.1 High-Demand Technical Competencies

The technical skills required for Ghana's green economy can be categorized into two tiers: foundational, cross-sectoral skills that are valuable almost everywhere, and specialized skills that are critical for specific high-growth sectors.

- **Tier 1: Foundational Cross-Sectoral Competencies**

1. **Project Management:** This is arguably the single most sought-after technical skill across the formal green economy. From managing the construction of a solar plant to overseeing a reforestation project or implementing a sanitation program, the ability to manage budgets, timelines, procurement, and teams is essential.<sup>26</sup>
2. **Geographic Information Systems (GIS) and Remote Sensing:** The ability to use GIS software (like ArcGIS or QGIS) and analyze satellite imagery is a high-demand skill in environmental management, forestry, agriculture, and water resource management. It is used for mapping resources, monitoring land-use change, planning infrastructure, and assessing environmental impacts.<sup>32</sup>
3. **Environmental and Social Impact Assessment (ESIA):** A procedural and legally mandated skill that is fundamental for the environmental consulting sector and is a required knowledge area for project managers in any sector undertaking major development.<sup>51</sup>
4. **Data Collection and Analysis:** The ability to design surveys, use digital data collection tools (e.g., KoboToolbox), and analyze both quantitative and qualitative data is critical for monitoring and evaluation roles, policy analysis, and scientific research across all sectors.<sup>101</sup>
5. **Stakeholder Engagement and Consultation:** A procedural skill, particularly vital for community-based projects and for navigating the regulatory approval process for large infrastructure. It involves facilitating meetings, managing expectations, and ensuring participatory planning.<sup>95</sup>

- **Tier 2: High-Demand Sector-Specific Competencies**

1. **Energy Sector:** The most prominent skills are **Solar PV System Design and Installation** and **Energy Auditing**. The rapid growth of solar and the high cost of electricity make these the most marketable technical specializations.<sup>27</sup>
2. **Agriculture and Forestry:** Key skills include **Agroecology and Soil Science** for building climate resilience, and **Carbon Accounting** (specifically for REDD+ and agroforestry projects) which unlocks access to international

climate finance.<sup>100</sup>

3. **Waste and Circular Economy:** The most in-demand technical knowledge relates to **Recycling Technologies** for specific materials (especially plastics) and the operation of **Waste-to-Energy Processes** like anaerobic digestion and Black Soldier Fly farming.<sup>115</sup>
4. **Finance and Policy:** The most advanced and emerging skills are in **Climate Finance** (structuring green financial instruments) and **ESG Analysis** (integrating environmental, social, and governance factors into investment decisions).<sup>19</sup>

## 17.2 Critical Interpersonal and Management Capabilities

Beyond technical knowledge, the research consistently highlights a set of soft skills that are essential for effectiveness and career progression in the green economy.

1. **Communication:** This is the most critical soft skill, but its application varies. For community-based roles (e.g., extension officers, ecotour guides), it means the ability to translate complex technical concepts into simple, practical terms, often in local languages.<sup>48</sup> For policy and consulting roles, it means the ability to write clear, persuasive, and technically robust reports and policy briefs.<sup>26</sup>
2. **Adaptability and Problem-Solving:** Green economy projects in Ghana often operate in dynamic and unpredictable environments, facing challenges from logistical hurdles and funding delays to changing weather patterns. The ability to think on one's feet and find creative solutions is highly valued.<sup>26</sup>
3. **Entrepreneurship and Business Development:** With a large part of the green economy composed of startups, social enterprises, and consultants, an entrepreneurial mindset is key. This includes the ability to identify market opportunities, develop business plans, and secure funding.<sup>119</sup>
4. **Cultural Sensitivity and Community Mobilization:** For any project that involves working with local communities—which is the case for most initiatives in agriculture, conservation, ecotourism, and sanitation—the ability to build trust, respect local customs, and facilitate participatory processes is non-negotiable.<sup>104</sup>
5. **Teamwork and Collaboration:** Given the interdisciplinary and multi-stakeholder nature of most green projects, the ability to work effectively in teams with people from different backgrounds (e.g., engineers, social scientists, community leaders)

is essential.<sup>146</sup>

**Table 16: In-Demand Technical Skills Across Ghana's Green Economy**

| Technical Skill    | Relevant Sectors | Evidence Source(s) | Typical Qualification Level |
|--------------------|------------------|--------------------|-----------------------------|
| Project Management | All Sectors      | [ <sup>1</sup>     |                             |

### Works cited

- Ghana Green Manufacturing and Policy Guide | Sustainable Energy ..., accessed June 25, 2025, <https://www.seforall.org/publications/ghana-green-manufacturing-and-policy-guide>
- Ghana Energy Transition and Investment Plan, accessed June 25, 2025, <https://www.seforall.org/our-work/initiatives-projects/energy-transition-plans/ghana>
- Ghana Energy Transition and Investment Plan | PDF - Scribd, accessed June 25, 2025, <https://www.scribd.com/document/680132196/Ghana-Energy-Transition-and-Investment-Plan>
- GIZ Green Business Competitions for MSMEs - - Ghana Climate Innovation Centre, accessed June 25, 2025, <https://ghanacic.ashesi.edu.gh/giz-green-business-competitions/>
- Green economy / Ghana - Interactive Country Fiches, accessed June 25, 2025, <https://dicf.unepgrid.ch/ghana/green-economy>
- GHANA'S\_MEASURES\_ON\_CLIMATE\_CHANGE:\_THE\_NATIONAL\_GREEN\_JOBS\_STRATEGY.docx - Ministry of Employment and Labour Relations, accessed June 25, 2025, [https://melr.gov.gh/files/publications/GHANA%E2%80%99S\\_MEASURES\\_ON\\_CLIMATE\\_CHANGE:\\_THE\\_NATIONAL\\_GREEN\\_JOBS\\_STRATEGY.docx](https://melr.gov.gh/files/publications/GHANA%E2%80%99S_MEASURES_ON_CLIMATE_CHANGE:_THE_NATIONAL_GREEN_JOBS_STRATEGY.docx)
- Promoting green jobs, Ghana - Climate Investment Funds (CIF), accessed June 25, 2025, <https://www.cif.org/just-transition-toolbox/example/promoting-green-jobs-ghana>
- Ghana's measures on climate change: National green jobs strategy - Graphic Online, accessed June 25, 2025, <https://www.graphic.com.gh/features/opinion/ghana-news-ghanas-measures-on-climate-change-national-green-jobs-strategy.html>
- EU-Ghana Pact for Skills: Advancing Green Jobs and Sustainability - Aspyee, accessed June 25, 2025, <https://aspyee.org/news/eu-ghana-pact-targets-green-jobs-and-skills-devt>
- Ghana Goes for Green Growth - Climate and Development Knowledge Network

(CDKN), accessed June 25, 2025, <https://cdkn.org/sites/default/files/files/NCCPF-Summary-FINAL.pdf>

- National Climate Change Policy (NCCP), accessed June 25, 2025, [https://climate-laws.org/document/national-climate-change-policy-nccp\\_e597](https://climate-laws.org/document/national-climate-change-policy-nccp_e597)
- Ghana: National climate change policy 2013 - PreventionWeb.net, accessed June 25, 2025, <https://www.preventionweb.net/publication/ghana-national-climate-change-policy-2013>
- Ghana National Climate Change Policy. | FAOLEX, accessed June 25, 2025, <https://www.fao.org/faolex/results/details/es/c/LEX-FAOC169292/>
- Ghana National Climate Change Policy, accessed June 25, 2025, <https://www.greenpolicyplatform.org/national-documents/ghana-national-climate-change-policy>
- The Case for Ghana's Renewable Energy Transition: A Path to Sustainability and Economic Resilience - Climate Policy Lab, accessed June 25, 2025, <https://www.climatepolicylab.org/climatesmart/2025/3/7/the-case-for-ghanas-renewable-energy-transition-a-path-to-sustainability-and-economic-resilience>
- Powering Progress: Renewable Energy in Ghana - The Borgen Project, accessed June 25, 2025, <https://borgenproject.org/renewable-energy-in-ghana-3/>
- Ghana - Energy and Renewables - International Trade Administration, accessed June 25, 2025, <https://www.trade.gov/country-commercial-guides/ghana-energy-and-renewables>
- Mainstreaming Climate Change and Green Economy Sustainable Development Goals (SDGs) into the Development Plans of MMDAs, accessed June 25, 2025, <https://www.un-page.org/knowledge-hub/ghana-mainstreaming-climate-change-and-green-economy/>
- Ghana - UN PAGE - Partnership for Action on Green Economy, accessed June 25, 2025, <https://www.un-page.org/countries/ghana/>
- Boosting Green Employment and Enterprise Opportunities in Ghana - United Nations Capital Development Fund (UNCDF), accessed June 25, 2025, <https://www.uncdf.org/green>
- Boosting Green Employment and Enterprise Opportunities in Ghana (GrEEen) Project - Emergency Trust Fund for Africa, accessed June 25, 2025, [https://trust-fund-for-africa.europa.eu/document/download/dd2f2351-347f-4341-9705-c06efa0744d5\\_en?filename=greenflyer.pdf&prefLang=fr](https://trust-fund-for-africa.europa.eu/document/download/dd2f2351-347f-4341-9705-c06efa0744d5_en?filename=greenflyer.pdf&prefLang=fr)
- GIZ projects in the Ghana-NRW partnership, accessed June 25, 2025, <https://www.ghana-nrw.info/en/giz-projects-in-the-ghana-nrw-partnership/>
- Green energy for climate protection in Ghana - giz.de, accessed June 25, 2025, <https://www.giz.de/en/worldwide/122505.html>
- Supporting renewable energy and energy efficiency - giz.de, accessed June 25, 2025, <https://www.giz.de/en/worldwide/204254.html>
- Ghana - giz.de, accessed June 25, 2025, <https://www.giz.de/en/worldwide/324.html>
- Technical Advisor – Sustainability at GIZ Ghana | Jobberman, accessed June 25,

2025, <https://www.jobberman.com.gh/listings/technical-advisor-sustainability-ev80rz>

- Energy Advisor at GIZ Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/energy-advisor-wpxxqg>
- GIZ Partners with Ashesi's GCIC towards Green Entrepreneurship Development, accessed June 25, 2025, <https://ghanacic.ashesi.edu.gh/giz-partners-with-ashesi-gcic-towards-green-entrepreneurship-development/>
- GIZ Paid Trainee Program in Renewable Energy & Energy Efficiency - Reign Gigs, accessed June 25, 2025, <https://reigngigs.com/giz-paid-trainee-program-in-renewable-energy-energy-efficiency-e2300-month-stipend-2025-2026/>
- World Bank Group Launches New Country Partnership Framework for Ghana, accessed June 25, 2025, <https://www.worldbank.org/en/news/press-release/2022/02/23/world-bank-group-launches-new-country-partnership-framework-for-ghana>
- World Bank Approves New Five-Year Country Partnership Framework for Ghana, accessed June 25, 2025, <https://www.ndowuona.com/news-and-updates/legal-updates/181-world-bank-approves-new-five-year-country-partnership-framework-for-ghana>
- Ghana Digital Acceleration Project - World Bank, accessed June 25, 2025, <https://projects.worldbank.org/en/projects-operations/procurement-detail/OP00347303>
- Africa Environmental Health and Pollution Management Program, accessed June 25, 2025, <https://projects.worldbank.org/pt/projects-operations/procurement-detail/OP00302659>
- Ghana Landscape Restoration and Small-Scale Mining Project, accessed June 25, 2025, <https://projects.worldbank.org/en/projects-operations/procurement-detail/OP00282004>
- Chief of Party for USAID funded Agricultural project in Ghana, accessed June 25, 2025, <https://internationalink.net/closed-positions?view=article&id=264:currently-seeking-chief-of-party-for-usaid-funded-agricultural-project-in-ghana&catid=38>
- The Effects of the US Foreign Aid Suspension on Northern Ghana - Savana Signatures, accessed June 25, 2025, <https://savsign.org/the-effects-of-the-us-foreign-aid-suspension-on-northern-ghana/>
- Innovative Partnership Announcement: Unlocking Agricultural ..., accessed June 25, 2025, [https://thepalladiumgroupusa.com/download?file=AED\\_1719429117\\_847file\\_upload\\_palladium\\_rfa\\_-\\_innovative\\_partnerships\\_to\\_unlock\\_agricultural\\_finance\\_for\\_small\\_borrowers.pdf%23Palladium+RFA+-+Innovative+Partnerships+to+Unlock+Agricultural+Finance+for+Small+Borrowers.pdf](https://thepalladiumgroupusa.com/download?file=AED_1719429117_847file_upload_palladium_rfa_-_innovative_partnerships_to_unlock_agricultural_finance_for_small_borrowers.pdf%23Palladium+RFA+-+Innovative+Partnerships+to+Unlock+Agricultural+Finance+for+Small+Borrowers.pdf)
- USAID cuts aid: A wake-up call for economic independence, accessed June 25,



2025, <https://thebftonline.com/2025/02/26/usaids-cuts-aid-a-wake-up-call-for-economic-independence/>

- USAID Ghana Projects: Impact On Health, Education & Agri - Farmonaut, accessed June 25, 2025, <https://farmonaut.com/africa/ghanas-development-at-risk-how-usaid-closure-could-impact-healthcare-education-and-agriculture>
- Navigating the future: Strategies for NGOs post-USAID grant withdrawal, accessed June 25, 2025, <https://thebftonline.com/2025/02/18/navigating-the-future-strategies-for-ngos-post-usaid-grant-withdrawal/>
- A Critical Review and Analysis of Opportunities and Challenges for Just Transitions in Ghana | Climate Strategies, accessed June 25, 2025, <https://climatestrategies.org/wp-content/uploads/2024/10/A-Critical-Review-and-Analysis-of-Opportunities-and-Challenges-for-Just-Transitions-in-Ghana-1-1.pdf>
- Ghana Can Pave the Way for Sustainable Growth by Focusing on Long-Term Reforms to Build a Robust Fiscal System - World Bank, accessed June 25, 2025, <https://www.worldbank.org/en/news/press-release/2025/02/12/ghana-can-pave-the-way-for-sustainable-growth-by-focusing-on-long-term-reforms-to-build-a-robust-fiscal-system>
- The future of Ghana's energy mix: how to meet demand growth to 2030, accessed June 25, 2025, <https://energyforgrowth.org/wp-content/uploads/2021/08/The-future-of-Ghanas-energy-mix-how-to-meet-demand-growth-to-2030-2.pdf>
- GHANA: GREEN INDUSTRY AND TRADE ASSESSMENT, accessed June 25, 2025, <https://www.un-page.org/knowledge-hub/ghana-green-industry-and-trade-assessment/>
- Ghana is Set on a Path for Green Jobs | ICR Facility, accessed June 25, 2025, <https://www.icr-facility.eu/ghana-is-set-on-a-path-for-green-jobs/>
- DECENT JOBS AND SUSTAINABLE LIVELIHOOD IN GHANA POLICY BRIEF - United Nations Development Programme, accessed June 25, 2025, [https://www.undp.org/sites/g/files/zskgke326/files/migration/gh/Inclusive-development-in-Ghana--Policy-Brief\\_UNDP-Ghana.pdf](https://www.undp.org/sites/g/files/zskgke326/files/migration/gh/Inclusive-development-in-Ghana--Policy-Brief_UNDP-Ghana.pdf)
- www.icr-facility.eu, accessed June 25, 2025, <https://www.icr-facility.eu/ghana-is-set-on-a-path-for-green-jobs/#:~:text=Waste%2Opickers%20are%20ready%20for%20change&text=Ghana's%20Green%20Jobs%20Strategy%20does,be%20recognized%20for%20waste%2Opickers.>
- Ghana's Green Economy Transition : Are We Leaving the Most Affected Out of The Conversation? - Ashesi University, accessed June 25, 2025, <https://ashesi.edu.gh/market-women-are-the-backbone-of-our-food-systems/>
- Environmental Protection Agency (Ghana) - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Environmental\\_Protection\\_Agency\\_\(Ghana\)](https://en.wikipedia.org/wiki/Environmental_Protection_Agency_(Ghana))
- Ghana Environmental Protection Agency - weADAPT, accessed June 25, 2025, <https://weadapt.org/organisation/ghana-environmental-protection-agency/>



- Ghana's Environmental Protection Agency to become an Authority soon - ukgcc, accessed June 25, 2025, <https://ukgcc.com.gh/ghanas-environmental-protection-agency-to-become-an-authority-soon/>
- 2024-Annual-Progress-Report\_final-version\_21325.pdf - Carbon Markets Office, accessed June 25, 2025, [https://cmo.epa.gov.gh/wp-content/uploads/2025/03/2024-Annual-Progress-Report\\_final-version\\_21325.pdf](https://cmo.epa.gov.gh/wp-content/uploads/2025/03/2024-Annual-Progress-Report_final-version_21325.pdf)
- Energy Commission (Ghana) - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Energy\\_Commission\\_\(Ghana\)](https://en.wikipedia.org/wiki/Energy_Commission_(Ghana))
- Energy Commission, Ghana, accessed June 25, 2025, <https://www.energycom.gov.gh/>
- West Africa's First Nearly Zero Energy Building Unveiled in Ghana - GIZ, accessed June 25, 2025, <https://www.giz.de/en/worldwide/202017.html>
- Energy Academy - Home, accessed June 25, 2025, <https://eacademy.energycom.gov.gh/>
- Forestry Commission (FC) - Ministry of Lands and Natural Resources, accessed June 25, 2025, <https://mlnr.gov.gh/forestry-commission/>
- Ghana Forestry Commission | UN-SPIDER Knowledge Portal, accessed June 25, 2025, <https://www.un-spider.org/ghana-forestry-commission>
- Forestry Commission (Ghana) - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Forestry\\_Commission\\_\(Ghana\)](https://en.wikipedia.org/wiki/Forestry_Commission_(Ghana))
- Forestry Commission – Forestry Commission, accessed June 25, 2025, <https://www.fcghana.org/>
- Carbon credit as collateral: A green lifeline of securitisation in green lending, accessed June 25, 2025, <https://thebftonline.com/2025/06/24/carbon-credit-as-collateral-a-green-lifeline-of-securitisation-in-green-lending/>
- Powering Ghana's Future: A Strategic Green Energy Roadmap for Recovery, Resilience, and Growth, accessed June 25, 2025, <https://www.modernghana.com/news/1389046/powering-ghanas-future-a-strategic-green-energy.html>
- Ghana Pursues Wind and Wave Energy to Boost Renewables, accessed June 25, 2025, <https://africa-energy-portal.org/news/ghana-pursues-wind-and-wave-energy-boost-renewables>
- Renewable energy investment factsheet: Ghana - Programme Solidarité Eau, accessed June 25, 2025, [https://www.pseau.org/outils/ouvrages/irena\\_renewable\\_energy\\_investment\\_factsheet\\_ghana\\_2025.pdf](https://www.pseau.org/outils/ouvrages/irena_renewable_energy_investment_factsheet_ghana_2025.pdf)
- 27 Top Solar Energy Companies in Ghana 2025 - Maypatronic, accessed June 25, 2025, <https://maypatronic.com/solar-energy-companies-ghana/>
- Ghana Solar Energy Company List - Mordor Intelligence, accessed June 25, 2025, <https://www.mordorintelligence.com/industry-reports/ghana-solar-energy-market/companies>
- Recruitment Renewable Energy Engineer - Ghana, accessed June 25, 2025, <https://www.ghanajob.com/recruitment-renewable-energy-engineer>

- Recruitment Ghana : solar energy engineer CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/solar%20energy%20engineer>
- Recruitment Ghana : renewable energy engineer CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/renewable%20energy%20engineer>
- Recruitment Ghana : renewable energies CVs - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/renewable%20energies>
- Recruitment Ghana : Renewable Energy Development CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/Renewable%20Energy%20Development>
- Solar Technician in Accra Metropolitan - Solar Energy, Benjamin Tsatsu | Jiji.com.gh, accessed June 25, 2025, <https://jiji.com.gh/accra-metropolitan/solar-energy-products/solar-technician-hOVmzNf9zKwuZ9M56FiDtBM8.html>
- Renewable energy solutions to create thousands of green jobs in rural areas - Ghana Web, accessed June 25, 2025, <https://www.ghanaweb.com/GhanaHomePage/business/Renewable-energy-solutions-to-create-thousands-of-green-jobs-in-rural-areas-1898309>
- REGULAR & ADVANCED, accessed June 25, 2025, [https://www.ecreee.org/wp-content/uploads/2024/01/short\\_courses\\_brochure\\_revised.pdf](https://www.ecreee.org/wp-content/uploads/2024/01/short_courses_brochure_revised.pdf)
- Centre for Climate Change and Sustainability Studies - University of Ghana, accessed June 25, 2025, <https://c3ss.ug.edu.gh/>
- Institute for Environment and Sanitation Studies - University of Ghana, accessed June 25, 2025, <https://iess.ug.edu.gh/>
- SEEM - rcees, accessed June 25, 2025, <https://rcees.uenr.edu.gh/msc-seem/>
- Renewable Energy - ECG Training Centre, accessed June 25, 2025, <https://ecgtc.edu.gh/index.php/lms/courses-category/coursecategory/renewableenergy>
- Renewable Energy Solutions Course - Accra, Ghana - Trainingcred Institute, accessed June 25, 2025, <https://trainingcred.com/course-schedules/renewable-energy-solutions-training/accra/>
- Ghana Solar Panel Manufacturing Report | Market Analysis and Insights - PVKnowhow, accessed June 25, 2025, <https://www.pvknowhow.com/solar-report/ghana/>
- Ghana Banks on Energy Efficiency to Drive Industrial Growth - Ecofin Agency, accessed June 25, 2025, <https://www.ecofinagency.com/news-industry/2506-47410-ghana-banks-on-energy-efficiency-to-drive-industrial-growth>
- EDGE Green Building Certification | SGS Ghana, accessed June 25, 2025, <https://www.sgs.com/en-gh/services/edge-green-building-certification>
- The Greens Ghana Achieves EDGE Certification: What This Means for Our Homeowners and the Planet, accessed June 25, 2025, <https://thegreensgh.com/the-greens-ghana-achieves-edge-certification-what-this-means-for-our-homeowners-and-the-planet/>

- A Green Building Movement in Ghana: EDGE is Everywhere - YouTube, accessed June 25, 2025, <https://www.youtube.com/watch?v=-ca1z8TWcWU>
- Introducing the GREDA Green Building Certification: Pioneering Sustainable Construction in Ghana, accessed June 25, 2025, <https://yfmghana.com/introducing-the-greda-green-building-certification-pioneering-sustainable-construction-in-ghana/>
- Ghana - Green Building Information Gateway, accessed June 25, 2025, <https://www.gbig.org/places/30490>
- KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI SCHOOL OF GRADUATE STUDIES ADMISSION OF CANDIDATES TO RESEARCH OR HIG - KNUST Systems, accessed June 25, 2025, [https://webapps.knust.edu.gh/check/forms/POSTGRADUATE\\_ADMISSIONS.pdf](https://webapps.knust.edu.gh/check/forms/POSTGRADUATE_ADMISSIONS.pdf)
- Ghana - Friends of the Earth International, accessed June 25, 2025, <https://www.foei.org/member-groups/friends-of-the-earth-ghana/>
- Earth Care Ghana -, accessed June 25, 2025, <https://earthcareghana.org/>
- Water Management, Forestry, Environment, Ghana salaries - Paylab, accessed June 25, 2025, <https://www.paylab.com/gh/salaryinfo/water-management-forestry-environment>
- SAL Consult – A trusted, multidisciplinary water & environmental ..., accessed June 25, 2025, <https://salconsultgh.com/>
- ESLGhana | Environmental Consultant, accessed June 25, 2025, <https://esl-ghana.com/>
- Environmental Consultants Ghana | Air Quality Consultants - WKC Group, accessed June 25, 2025, <https://www.wkcgroup.com/locations/africa/ghana/>
- www.google.com, accessed June 25, 2025, <https://www.google.com/search?q=Ghana+Forestry+Commission>
- Environmental - Geosystems Consulting Limited, accessed June 25, 2025, <https://geosystemsconsulting.com.gh/services/environmental-social/>
- Kwame Nkrumah University of Science and Technology - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Kwame\\_Nkrumah\\_University\\_of\\_Science\\_and\\_Technology](https://en.wikipedia.org/wiki/Kwame_Nkrumah_University_of_Science_and_Technology)
- About us - IAIA Ghana, accessed June 25, 2025, <https://iaia-ghana.org/about-us/>
- Membership - GhISEP | Ghana Institute of Safety and Environmental Professionals., accessed June 25, 2025, <https://ghisep.org/site/membership/9>
- Ghana: Building Resilience from Crisis - A new World Bank support to help the country recover from climate-related agricultural losses and secure its food future, accessed June 25, 2025, <https://www.worldbank.org/en/news/press-release/2025/04/29/ghana-building-resilience-from-crisis>
- Recruitment Ghana : Services CVs | Ghanajob.com, accessed June 25, 2025, [https://www.ghanajob.com/cv-library-search/?f%5B0%5D=im\\_field\\_candidat\\_metiers%3A34&f%5B1%5D=im\\_field\\_candidat\\_langue%3A541&f%5B2%5D=im\\_field\\_candidat\\_langue%3A543&f%5B3%5D](https://www.ghanajob.com/cv-library-search/?f%5B0%5D=im_field_candidat_metiers%3A34&f%5B1%5D=im_field_candidat_langue%3A541&f%5B2%5D=im_field_candidat_langue%3A543&f%5B3%5D)

[=im field candidat metier%3A35&f%5B4%5D=im field candidat langue%3A562&f%5B5%5D=im field candidat langue%3A542&f%5B6%5D=im field candidat l langue%3A760&f%5B7%5D=im field candidat secteur%3A125](#)

- Agriculture Jobs - Jobsinghana.com - Jobs Directory, accessed June 25, 2025, <https://www.jobsinghana.com/jobs/indexnew.php?device=d&cat=313>
- PGS Ghana – Sustainable Organic Certification, accessed June 25, 2025, <https://pgsghana.org/>
- Ghanaian Farmers Work Together for Organic Certification - VOA, accessed June 25, 2025, [https://www.voanews.com/a/africa\\_ghanaian-farmers-work-together-organic-certification/6192761.html](https://www.voanews.com/a/africa_ghanaian-farmers-work-together-organic-certification/6192761.html)
- Peace Corps Sustainable Agriculture Outreach Agent – Ghana - Your Opportunities Africa, accessed June 25, 2025, <https://youroportunitiesafrica.com/2025/06/16/peace-corps-sustainable-agriculture-outreach-agent-ghana/>
- Ghana Youth Guide launches initiative to promote climate-resilient agriculture, accessed June 25, 2025, <https://gna.org.gh/2025/06/ghana-youth-guide-launches-initiative-to-promote-climate-resilient-agriculture/>
- Sustainable Agriculture & Food Systems: Cultivate a Healthy Planet & People |Ghana, accessed June 25, 2025, <https://skillsforafrica.org/gh/course/sustainable-agriculture-food-systems-cultivate-a-healthy-planet-people>
- Recruitment Ghana : agriculture CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/agriculture?page=4>
- Graduate Admission | Department of Agricultural Economics and Agribusiness, accessed June 25, 2025, <https://www.ug.edu.gh/agricecons/academics/graduate-admission>
- Overview | Department of Agricultural Engineering - University of Ghana, accessed June 25, 2025, <https://www.ug.edu.gh/agriculturalengineering/academics/graduate-courses>
- Ghana Standards Authority, GIZ to establish Organic Certification Scheme and Testing Regime - Access Agric, accessed June 25, 2025, <https://accessagric.com/ghana-standards-authority-giz-to-establish-organic-certification-scheme-and-testing-regime/>
- ESS2025: Incorporating circular practices could spur GDP growth by 1.9% - Ghana Web, accessed June 25, 2025, <https://www.ghanaweb.com/GhanaHomePage/business/ESS2025-Incorporating-circular-practices-could-spur-GDP-growth-by-1-9-1989115>
- Ghana Circular Economy Centre project to drive sustainability through partnerships – Joseph Yeboah, accessed June 25, 2025, <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-Circular-Economy-Centre-project-to-drive-sustainability-through-partnerships-Joseph-Yeboah-1975684>
- Ghana establishes innovation hub to drive circular economy, accessed June 25, 2025, <https://www.ghanabusinessnews.com/2025/06/19/ghana-establishes->

[innovation-hub-to-drive-circular-economy/](#)

- 16 organisations sign MOU to be part of Bio Economy Innovation Hub - GBC Ghana Online, accessed June 25, 2025, <https://www.gbcghanaonline.com/general/bio-iwmi-innovation-hub/2025/>
- water environment Jobs Ghana - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-vacancies-search-ghana/water%20environment>
- Ghana Atomic Energy Commission, accessed June 25, 2025, <https://gaec.gov.gh/>
- BSF Technology to revolutionise agriculture and waste management - Ghana News Agency, accessed June 25, 2025, <https://gna.org.gh/2025/06/bsf-technology-to-revolutionise-agriculture-and-waste-management-2/>
- Jospong Group's circular economy initiatives: Turning Plastic Waste into a purpose, accessed June 25, 2025, <https://thebftonline.com/2025/06/23/jospong-groups-circular-economy-initiatives-turning-plastic-waste-into-a-purpose/>
- Inclusive Systems for Sustainable Green Jobs - Environment 360, accessed June 25, 2025, [https://environment360gh.org/?page\\_id=17139](https://environment360gh.org/?page_id=17139)
- Zoomlion Ghana Limited – ZL | Leading Waste Management Solutions Provider in Africa, accessed June 25, 2025, <https://zoomlionghana.com/>
- lca.logcluster.org, accessed June 25, 2025, <https://lca.logcluster.org/ghana-412-waste-management-companies-contact-list>
- Solid Waste Management Course - Accra, Ghana - Trainingcred Institute, accessed June 25, 2025, <https://trainingcred.com/course-schedules/solid-waste-management-training/accra/>
- Scheduled Waste Management Course (Ghana) - CEEL Training, accessed June 25, 2025, <https://foreigncourses.ceeltraining.com/product/scheduled-waste-management-course-ghana/>
- Green economic recovery through circular economy in Ghana – Ghana-NRW Kooperation, accessed June 25, 2025, <https://www.ghana-nrw.info/en/portfolio-item/green-economic-recovery-through-circular-economy-in-ghana/>
- Ghana - Economy - World Bank Data, accessed June 25, 2025, <https://data360.worldbank.org/en/economy/GHA>
- Licensed Bodies - Engineering Council, accessed June 25, 2025, <https://engcouncil.gov.gh/licensed-bodies/>
- GIE - GHANA CHAMBER OF CONSTRUCTION, accessed June 25, 2025, <https://chamberofconstruction.org/gie/>
- Manager, Environmental Sustainability and Climate Finance at ..., accessed June 25, 2025, <https://www.jobberman.com/listings/manager-environmental-sustainability-and-climate-finance-7w2zvx>
- Ghana Champions Community-Based Ecotourism at 2025 KOPIST Forum in South Korea, accessed June 25, 2025, <https://www.motac.gov.gh/ghana-champions-community-based-ecotourism-at-2025-kopist-forum-in-south-korea/>
- Ghana green jobs stakeholder mapping - Climate Investment Funds (CIF), accessed June 25, 2025, <https://www.cif.org/just-transition->



[toolbox/example/ghana-green-jobs-stakeholder-mapping](https://www.knust.edu.gh/toolbox/example/ghana-green-jobs-stakeholder-mapping)

- Kwame Nkrumah University of Science & Technology (KNUST) Kuulchat Page, accessed June 25, 2025, <https://kuulchat.com/universities/kwame-nkrumah-university-of-science--technology-knust/programmes.php>
- BSc. Ecotourism and Hospitality Management - University for Development Studies, accessed June 25, 2025, <https://uds.edu.gh/academics/programmes/facs-108>
- Professional Certificate in Sustainable Tourism | GSTC, accessed June 25, 2025, <https://www.gstc.org/sustainable-tourism-training/certificate-in-sustainable-tourism/>
- Professional Certificate in Eco-Tourism Management - HealthCareCourses, accessed June 25, 2025, <https://ghana.healthcarecourses.org.uk/course1.aspx?id=158102&CourseTitle=Professional+Certificate+in+Eco-Tourism+Management&Subject=Short+course&Award=Certificate>
- Certificate Programme in Ecotourism Management - HealthCareCourses, accessed June 25, 2025, <https://ghana.healthcarecourses.org.uk/course1.aspx?id=79445&CourseTitle=Certificate+Programme+in+Ecotourism+Management&Subject=Short+course&Award=Certificate>
- Accounting, Auditing & Finance Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/environmental-social-and-governance-esg-manager-at-arb-apex-bank-5d2wqr-v1>
- Recruitment Ghana : waste management CVs - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/waste%20management>
- UNDP embarks on nationwide campaign to promote smart energy choices to boost energy efficiency, accessed June 25, 2025, <https://www.undp.org/ghana/press-releases/undp-embarks-nationwide-campaign-promote-smart-energy-choices-boost-energy-efficiency>
- Nonprofit Organizations in Ghana - EcoHubMap, accessed June 25, 2025, <https://www.ecohubmap.com/list/NGO/all/Ghana>
- Ghana Climate Innovation Centre | Climate Technology Centre & Network | Mon, 04/06/2020, accessed June 25, 2025, <https://www.ctc-n.org/networking-and-collaboration/collaboration/network-members/ghana-climate-innovation-centre>
- Ghana Climate Innovation Centre - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Climate\\_Innovation\\_Centre](https://en.wikipedia.org/wiki/Ghana_Climate_Innovation_Centre)
- Ghana can recover \$4 million from solar waste - KNUST study, accessed June 25, 2025, <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-can-recover-4-million-from-solar-waste-KNUST-study-1989151>
- Ghana could reclaim \$4 million from solar waste with proper recycling – KNUST Study finds, accessed June 25, 2025, <https://www.myjoyonline.com/ghana-could-reclaim-4-million-from-solar-waste-with-proper-recycling-knust-study-finds/>

- 29 entrepreneurs graduate from Ghana Climate Innovation Centre - MyJoyOnline, accessed June 25, 2025, <https://www.myjoyonline.com/29-entrepreneurs-graduate-from-ghana-climate-innovation-centre/>
- Circularity in action: awakening Ghana's circular economy - Impact Hub, accessed June 25, 2025, <https://impacthub.net/circularity-in-action-ghana/>
- Country Sustainability Manager at Barry Callebaut Group - Jobberman Ghana, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/country-sustainability-manager-at-barry-callebaut-group-070gpe>

# Ghana's Iron Economy: An Employment Landscape Analysis for National Development (June 2025)

## Executive Summary

This report provides a comprehensive employment mapping of Ghana's "Iron Economy"—defined as the core industrial sectors of Construction, Manufacturing, Transportation, and Utilities—as of June 2025. It is designed to support national workforce development, infrastructure planning, and industrial coordination by delivering structured datasets and deep analytical perspectives on the current state and future trajectory of industrial employment in the nation.

The analysis reveals a Ghanaian labor market characterized by a central paradox: the coexistence of high unemployment, particularly among the youth, with a significant and persistent deficit of skilled technical labor in the very sectors poised for growth. While national unemployment was projected at 10.2% for 2024, with youth unemployment at 14% <sup>1</sup>, the construction sector alone faces a shortfall of tens of thousands of skilled artisans such as welders, electricians, and heavy equipment operators.<sup>2</sup> This structural skills mismatch, rather than a simple lack of jobs, is identified as the primary impediment to inclusive growth.

The report finds that government policy, through ambitious initiatives like the "\$10 billion Big Push" infrastructure plan <sup>4</sup>, the development of a West African Petroleum Hub <sup>5</sup>, and the promotion of manufacturing <sup>6</sup>, is successfully driving demand for labor within the Iron Economy. However, the primary digital tool for labor market intermediation, the Ghana Labour Market Information System (GLMIS), exhibits a significant implementation gap, currently capturing only a small fraction of the formal job market and remaining almost entirely disconnected from the vast informal economy where the majority of Ghanaians work.<sup>7</sup>

A sector-by-sector analysis highlights distinct challenges and opportunities. The



**Construction** sector is a tale of two worlds: a formal sector of large contractors and an "invisible" informal ecosystem of artisans that constitutes the bulk of the workforce but remains largely outside the scope of official policy and support.<sup>9</sup>

**Manufacturing** faces a strategic dilemma between an "enclave" model of large foreign-led projects and an "integrated" model that builds up local SME capacity through partnerships, with profound implications for the quality of job creation.<sup>10</sup> The

**Transportation and Logistics** sector is bifurcating into a high-skill, data-driven formal industry and a low-skill, informal transport operations industry, with no clear skills bridge between them.<sup>11</sup> Finally, the

**Utilities** sector's push towards renewable energy is creating an urgent need for "green skills" that the current technical and vocational training system may be unprepared to supply at scale.<sup>13</sup>

The report concludes that the most effective path forward involves a strategic shift in focus. For workforce development, this means moving beyond generic job creation to targeted skills creation, primarily by leveraging and formalizing the massive, existing informal apprenticeship system.<sup>15</sup> For infrastructure and industrial planning, it requires integrating labor planning into project design from inception and mandating the use of strengthened national data systems to connect opportunities with the local workforce.

Key recommendations include:

6. **Launching a Skilled Artisan Accelerator Program** to rapidly scale up training in critical trades identified across the Iron Economy.
7. **Formalizing the Informal Apprenticeship System** by creating a national framework to certify and support master craftspersons as accredited trainers.
8. **Integrating Labour Impact Assessments** into all major infrastructure project approvals to ensure local content and employment are planned for.
9. **Strengthening and mandating the use of GLMIS** for all government-supported project recruitment to close the policy-to-platform gap.
10. **Establishing Sector Skills Councils** co-led by industry and education to create a permanent, dynamic link between the supply and demand sides of the labor market.

By addressing the structural skills mismatch and bridging the gap between formal policy and informal reality, Ghana can unlock the full potential of its Iron Economy to

drive sustainable development and create decent work for its growing population.

---

## **Part I: The Macroeconomic and Policy Context for Industrial Employment**

### **Section 1: The State of the Ghanaian Labour Market, 2025**

#### **1.1. Quantitative Labour Market Indicators**

An accurate assessment of Ghana's Iron Economy employment landscape must begin with a clear understanding of the broader national labor market context. As of early 2025, the data paints a picture of a dynamic but challenged workforce. The national unemployment rate has shown volatility, influenced by both domestic and global economic pressures. Projections for 2024 indicated an unemployment rate of 10.2%.<sup>1</sup> More concerning is the persistently high rate of youth unemployment, which, while projected to decrease to 14% in 2024 from a high of 33% (using a relaxed definition) in 2021, remains a significant socioeconomic challenge.<sup>1</sup> This highlights a large pool of available, yet unengaged, young workers.

Compounding this is a steady decline in the labor force participation rate for the 15-24 age group, which was projected to fall to 37.63% in 2024, continuing a downward trend from over 40% in 2019.<sup>18</sup> This suggests that a growing number of young people are neither employed nor actively seeking work, potentially due to discouragement or a lack of suitable opportunities. The Ministry of Employment and Labour Relations (MELR) has set an ambitious target in its 2024 budget estimates to reduce the overall unemployment rate to 5.0%, a goal that underscores the government's focus on the issue but also highlights the scale of the task ahead.<sup>19</sup>

Gender disparities are a stark feature of the labor market. The unemployment rate for

females is consistently higher than for their male counterparts, with 2024 projections showing an 8.5% rate for women versus 5.5% for men.<sup>1</sup> This points to structural and societal barriers that limit women's access to and retention in the workforce. In the context of the Iron Economy, which has traditionally been male-dominated, this gender gap represents both a challenge to inclusive growth and an opportunity to expand the talent pool by promoting female participation in technical and trade roles.

Over the past decade and a half, Ghana's economy has undergone a significant structural transformation. Employment has been shifting away from the agricultural sector, which fell from providing 52% of jobs in 2009 to just 30% by 2019.<sup>17</sup> This labor has been absorbed primarily by the services sector (rising from 35% to 49%) and, crucially, the industrial sector (rising from 14% to 21%).<sup>17</sup> This trend firmly establishes the Iron Economy sectors of construction, manufacturing, and utilities as increasingly vital engines of job creation and economic diversification for the nation.

## **1.2. The Formal-Informal Dichotomy**

The Ghanaian labor market is fundamentally dualistic, characterized by a relatively small formal sector and a vast, dominant informal economy. This dichotomy is perhaps the single most important contextual factor for any analysis of employment, as it dictates how the majority of the workforce finds jobs, acquires skills, and earns a livelihood.

The formal sector is structured around registered companies, public institutions, and established employment channels. Government jobs are managed through entities like the Public Services Commission (PSC), which oversees recruitment and manpower planning for the public service.<sup>20</sup> Formal private sector recruitment is increasingly mediated by online platforms such as Jobberman Ghana, which offers services like skills assessments and applicant tracking systems to connect employers with a database of over 700,000 job-seekers.<sup>21</sup> The government's own Ghana Labour Market Information System (GLMIS) is intended to be the central hub for formal job matching.<sup>24</sup> However, these formal channels represent only the tip of the iceberg.

The informal economy is where the vast majority of Ghanaians, particularly the youth, operate. This sector is characterized by self-employment, micro-enterprises, and contract-based or daily-wage labor, often with limited social protection, regulatory

oversight, or formal contracts. Its scale is evident in the proliferation of informal worker associations, such as the Union of Informal Sector Workers (UNIWA), which represents a fraction of the total informal workforce but still counts an estimated 125,000 members.<sup>8</sup>

Digital platforms like Jiji and Tonaton provide a powerful lens into the mechanics of the informal job market. Unlike formal portals, these sites function as direct marketplaces where individual artisans and small-scale service providers advertise their skills. A search for construction trades on Jiji, for example, reveals numerous CVs and service offerings for roles like "Mason Contractor" and "Construction Worker (Mason)," complete with self-reported salary expectations that demonstrate the fluid, project-based nature of remuneration.<sup>26</sup> A study focusing on informal construction artisans in the Ejisu Municipality confirms this reality, finding that their working conditions are generally deficient, they lack formal recognition, and there is no regulatory body effectively coordinating their welfare, leading to high turnover and negatively impacting productivity.<sup>9</sup> This informal ecosystem, while vibrant and accessible, presents significant challenges in terms of quality control, worker safety, and skills development.

### **1.3. Core Analytical Finding: The Structural Skills Mismatch**

When the data on unemployment is juxtaposed with industry demand, a critical conclusion emerges: Ghana's primary labor market challenge is not a simple scarcity of jobs, but a deep, structural mismatch between the skills possessed by the large, available workforce and the specific, technical competencies required by the growing Iron Economy sectors. This misalignment represents the central paradox of the nation's employment landscape.

The evidence for this is compelling and comes from multiple sources. On one hand, as established, there is a substantial pool of unemployed and underemployed individuals, especially among the youth.<sup>1</sup> On the other hand, credible reports identify a severe, unmet demand for skilled labor. A World Bank report, for instance, estimated that Ghana's construction sector had a deficit of 60,000 to 70,000 skilled artisans and tradespeople, with a projected need for an additional 250,000 such workers between 2015 and 2020—a trend that continues to define the sector.<sup>2</sup> The

fact that the construction sector provides more training opportunities than any other sector further underscores its potential for skills development and the acute need for qualified personnel.<sup>2</sup>

The coexistence of a labor surplus and a skilled worker deficit cannot be explained by macroeconomic factors alone. It points directly to a systemic failure in the skills pipeline. The education and training system, from basic education through to the tertiary and vocational levels, is not producing graduates in sufficient quantity or quality with the competencies that industries within the Iron Economy are actively seeking. This reframes the policy challenge entirely. A strategy focused solely on generic "job creation" through large-scale investment is insufficient if the local workforce cannot fill the positions created. The emphasis must therefore shift towards targeted, demand-driven "skills creation" that directly addresses the documented shortages in critical trades such as welding, industrial mechanics, electrical installation, and heavy equipment operation. The Ghana Jobs and Skills Project (GJSP), with its focus on apprenticeship and skills development, is a direct policy response to this very challenge.<sup>27</sup>

**Table 1: Ghana Iron Economy Employment Snapshot (June 2025)**

| Sector        | Estimated Workforce (Formal) | Estimated Workforce (Informal) | Key Job Titles (Top 5)   | Dominant Employment Arrangement | Key Skills in Demand   |
|---------------|------------------------------|--------------------------------|--|---------------------------------|--|
| Construction  | 100,000                      | 320,000+                       | Engineer, Site Supervisor, Mason, Welder, Heavy Equipment Operator | Informal (Contract/Day-Hire)    | Welding, Masonry, Electricals, Project Management, Equipment Operation |
| Manufacturing | 150,000                      | 50,000+                        | Plant Operator, Maintenance Technician, Warehouse Manager,         | Formal (Full-Time)              | Machine Operation, Quality Assurance, Technical Maintenance            |

|                                       |        |          |   |   |  |
|---------------------------------------|--------|----------|---|---|--|
|                                       |        |          | Quality Control Inspector, Production Line Worker   |   | , Logistics  |
| <b>Transportation &amp; Logistics</b> | 80,000 | 500,000+ | Logistics Coordinator, Fleet Manager, Commercial Driver, Dispatch Rider, Mechanic/Artisan | Informal (Self-Employed/Small Enterprise) | Driving (Commercial), Vehicle Maintenance, Supply Chain Management, Digital Literacy |
| <b>Utilities &amp; Energy</b>         | 40,000 | 10,000+  | Electrical Engineer, Linesman, Plant Mechanic, Solar PV Technician, Project Manager       | Formal (Public/Private Sector)            | Electrical Engineering, Grid Maintenance, Renewable Energy Systems, Plant Operations |

## Section 2: The National Policy Framework for Industrial Growth and Job Creation

### 2.1. Key Government Ministries and Mandates

The Ghanaian government has established a multi-agency institutional framework to oversee and drive its industrial and employment agenda. The coherence and coordination among these bodies are critical to the success of national development strategies.

The **Ministry of Employment and Labour Relations (MELR)** stands as the central

body for labor policy. Its mandate is to formulate policies on labor and employment, coordinate related interventions across all sectors, promote harmonious industrial relations, and ensure workplace safety.<sup>28</sup> The MELR is the lead implementing agency for the Ghana Jobs and Skills Project (GJSP), a flagship World Bank-funded initiative designed to directly support skills development and job creation through apprenticeships and enterprise support.<sup>27</sup> Furthermore, the ministry is responsible for the Ghana Labour Market Information System (GLMIS), the state's primary tool for labor market data and job intermediation.<sup>24</sup>

The **Ministry of Works and Housing (MWH)** is the principal driver of employment within the construction sector. It is tasked with formulating and implementing policies and programs for the nation's works, housing, and water infrastructure.<sup>30</sup> Through large-scale initiatives such as the Revised National Affordable Housing Programme, the development of major water supply projects in Tamale and Aveyime, and coastal protection works, the MWH directly stimulates demand for a wide range of construction labor, from civil engineers to artisans.<sup>32</sup>

The **Public Services Commission (PSC)** governs employment within the state apparatus. Its constitutional mandate includes managing the public sector workforce, advising the government on criteria for appointments, and reviewing the manpower requirements of public agencies to ensure the maximum and efficient utilization of human resources.<sup>20</sup> This role is particularly relevant for employment in state-owned enterprises within the utilities sector and in the public agencies that oversee infrastructure development, such as the Ghana Highway Authority.

## 2.2. Major National Initiatives and Their Employment Implications

A series of ambitious national initiatives form the backbone of Ghana's strategy to stimulate economic growth and generate employment, with a strong focus on the Iron Economy sectors.

The **"\$10 billion Big Push"** infrastructure plan, a cornerstone of the Mahama administration's agenda, is a primary driver of demand for construction labor. This initiative is designed to complete unfinished projects and invest heavily in new public infrastructure, including the strategic Volivo Bridge, the Tema Motorway expansion, an Accra-Kumasi expressway, and the rehabilitation of numerous trunk and feeder

roads across the country.<sup>4</sup> The explicit goal is to create large-scale employment opportunities, particularly for the youth, by directly engaging the construction industry.

In parallel, major **industrial and energy projects** are set to create thousands of specialized, high-skill jobs. The development of Ghana's first lithium mine and processing plant at Ewoyaa by Atlantic Lithium is a landmark project.<sup>5</sup> Even more significant is the planned West Africa Petroleum Hub in Jomoro, a massive, three-phase undertaking from 2024 to 2036 with a total investment projected at \$60 billion, which will include refineries, petrochemical plants, and storage facilities.<sup>5</sup> In the energy sector, the government is expanding power generation capacity through the relocation of the AMERI thermal plant and a push towards renewable energy, creating demand for engineers and technicians.<sup>13</sup>

**Manufacturing and export promotion** represent another key pillar of the employment strategy. The government has announced plans to establish three new garment factories in collaboration with private entities, which are anticipated to create a total of 27,000 jobs.<sup>6</sup> This is part of a broader strategy to enhance industrial value chains, rejuvenate underperforming sectors, and boost production for both domestic consumption and international markets.<sup>6</sup>

Directly addressing the skills gap is the **Ghana Jobs and Skills Project (GJSP)**. This World Bank-supported project is the government's core programmatic response to the structural challenges in the labor market. Its components are precisely targeted: Component 1 focuses on providing apprenticeship training for jobs; Component 2 supports entrepreneurship; and Component 3 is dedicated to the full operationalization of the GLMIS and the refurbishment of Public Employment Centres to ensure functional job intermediation services at the local level.<sup>27</sup> This project acknowledges that investment in infrastructure and industry must be paired with investment in human capital.

### **2.3. The Ghana Labour Market Information System (GLMIS): A Central Tool with Gaps**

The Ghana Labour Market Information System (GLMIS) is envisioned as the digital nerve center of the nation's employment strategy. Managed by the MELR, its



mandate is to serve as a comprehensive "Labour Market observatory" providing real-time data, job-matching services, and career guidance for a wide range of stakeholders, including employers, job seekers, researchers, and students.<sup>24</sup> Its successful operationalization is a key objective of the GJSP.<sup>27</sup>

However, an empirical review of the live GLMIS portal as of mid-2025 reveals a significant chasm between this ambitious mandate and its current operational reality. The platform's utility is severely hampered by a lack of comprehensive and representative data. A scan of its job listings shows a very small number of vacancies, which are heavily skewed towards formal, specialized roles in the mining and construction sectors, predominantly from a single large contractor.<sup>7</sup> There is a notable absence of listings in the vast transport sector and, most critically, a near-total failure to capture the informal job market where the majority of Ghanaians find work. The platform lists a single overseas manufacturing role, further highlighting its current limitations in reflecting the domestic labor market.<sup>7</sup>

This situation points to a critical disconnect between the grand scale of national job creation policies and the limited capacity of the primary digital tool designed to connect the workforce to these opportunities. While policies like the "Big Push" and the garment factory initiative announce the creation of tens of thousands of jobs<sup>4</sup>, the designated state mechanism for intermediation, the GLMIS, is not currently equipped to handle this scale or scope. This creates a policy-to-platform implementation gap. The vision for the GLMIS is national and all-encompassing, but its current form is niche and limited, reflecting only a tiny sliver of the formal economy.

Without a strategic, well-resourced effort to massively scale up the GLMIS's content, user base, and functionality, its potential as a national labor market observatory will remain unrealized. A key challenge is developing incentives and accessible interfaces that encourage informal workers and small-scale employers to use the system. Failing this, the platform will remain a marginal player in the overall labor market. The large-scale employment generated by major projects will continue to be filled through other, less transparent and potentially less equitable recruitment channels, such as word-of-mouth or private agencies, thereby undermining the inclusive growth objectives of the underlying national policies.

---

## **Part II: Sector-by-Sector Employment Mapping of the Iron**

# Economy

## Section 3: The Construction Sector: Building the Nation's Future

### 3.1. Project Pipeline and Direct Employment Drivers

The construction sector is a primary engine of direct job creation in Ghana, fueled by a robust pipeline of public and private projects spanning infrastructure, industry, and housing.

**Transport Infrastructure** stands out as a major source of employment. Key ongoing and planned projects under the government's "Big Push" initiative are creating sustained demand for labor across the country. The landmark Volivo Bridge project, designed to decongest the Adomi Bridge and enhance the Eastern Corridor transport link, is a flagship element.<sup>4</sup> Other significant projects include the expansion of the Tema Motorway, the construction of a new Accra-Kumasi expressway, and the comprehensive rehabilitation of major trunk roads (like the Techiman-Wa-Hamile corridor) and countless feeder roads.<sup>33</sup> These civil works projects are labor-intensive, requiring a workforce that includes civil engineers, surveyors, heavy equipment operators, and large contingents of general laborers.

**Industrial and Energy Construction** projects are creating demand for more specialized, high-skilled labor. The construction of Ghana's first lithium mine and processing plant at Ewoyaa is a capital-intensive undertaking that requires specialized construction expertise.<sup>5</sup> The multi-phase development of the West Africa Petroleum Hub in Jomoro, an integrated downstream petroleum facility, will be one of the largest construction endeavors in the region, demanding skilled workers such as steel fabricators, industrial welders, pipefitters, and industrial electricians over its multi-decade timeline (2024-2036).<sup>5</sup>

**Housing and Real Estate** development is another critical pillar of construction

employment. The government is actively involved through its Revised National Affordable Housing Programme.<sup>32</sup> A prominent example is the Pokuase Affordable Housing Project, which aims to deliver 8,000 housing units, though it has faced funding delays.<sup>32</sup> The private sector, represented by the Ghana Real Estate Developers Association (GREDA), is a parallel engine of housing construction.<sup>35</sup> However, this sub-sector is sensitive to macroeconomic conditions, with industry players citing the high cost of imported building materials like cement and iron rods as a significant challenge to affordability and project viability.<sup>37</sup>

### 3.2. Workforce Structure: A Tale of Two Sectors (Formal vs. Informal)

The construction workforce in Ghana is sharply divided into two distinct, yet interdependent, segments: a smaller, visible formal sector and a much larger, less visible informal sector.

The **formal employment** sector is composed of professionals and technicians employed by registered entities. This includes civil engineers, architects, quantity surveyors, and project managers working for large, established construction companies like Micheletti & Co., New Africa Construction, and the member firms of the Ghana Highway Authority's list of contractors.<sup>39</sup> Recruitment for these roles typically occurs through professional networks, university career services, and formal job portals. The Ghana Chamber of Construction Industry serves as the primary advocacy body for these formal-sector firms.<sup>42</sup>

The **informal employment** sector constitutes the majority of the construction workforce. It is a dynamic ecosystem of skilled artisans—including masons, carpenters, tilers, painters, welders, and electricians—and general laborers who operate on a contract, project-based, or day-hire basis.<sup>9</sup> Recruitment is highly decentralized, relying on word-of-mouth referrals and informal networks centered around specific localities or "master craftsmen." The rise of digital classifieds platforms like Jiji and Tonaton has created a new, semi-formal marketplace for these skills. These platforms feature numerous profiles and CVs of artisans directly advertising their services to consumers and small builders.<sup>26</sup> An analysis of these listings reveals the fluid salary structure of the informal market, with a "Construction Worker (Mason)" expecting GH¢700-1,000, while a more experienced "Mason Contractor"

with a team might command over GH¢10,000, reflecting the project-based and skill-differentiated nature of the work.<sup>26</sup>

The demand for skills across the sector can be categorized as follows:

11. **High-Skilled (Predominantly Formal):** Civil Engineers, Project Managers, Quantity Surveyors, Architects.
12. **Skilled Trades (Formal and Informal):** Welders <sup>47</sup>, Electricians <sup>50</sup>, Heavy Equipment Operators <sup>53</sup>, Plumbers, Masons, Carpenters.
13. **Semi-Skilled/Unskilled (Predominantly Informal):** General laborers, painters, steel benders, concrete mixers.

### 3.3. Industry Associations and Regulatory Environment

Several key organizations shape the construction sector's landscape. The **Ghana Chamber of Construction Industry (GhCCI)** is the apex body representing a broad coalition of professional institutions (e.g., Ghana Institution of Surveyors, Ghana Institution of Engineers) and contractor associations.<sup>43</sup> It plays a crucial advocacy role, engaging the government on critical issues such as delayed payments for public contracts, the need for quality standards in road construction, and the establishment of a state regulatory body, the Construction Industry Development Authority.<sup>43</sup>

The **Ghana Real Estate Developers Association (GREDA)** specifically represents the interests of private-sector housing developers. Established in 1988, GREDA advocates for developer-friendly policies, facilitates access to land and finance, and promotes the use of local building materials and affordable housing models.<sup>35</sup> The association has recently raised concerns about the low participation of large-scale foreign developers in its membership. This trend is seen as problematic because it limits the association's collective bargaining power and results in significant capital being diverted out of the local financial system, rather than being reinvested to empower local developers.<sup>38</sup>

### 3.4. Core Analytical Finding: The Invisible Engine and the Policy Blind Spot

The structure of Ghana's construction sector reveals a critical dynamic: the majority of its workforce operates within a vibrant but "invisible" informal ecosystem that is largely unmapped by official data systems and unsupported by formal policy structures. This creates a significant policy blind spot, where interventions designed for the formal sector risk failing to address the core challenges of productivity, safety, and skills development for the bulk of the industry's labor force.

Official reports, project announcements, and the focus of professional bodies are naturally geared towards the formal sector—the large, registered contractors <sup>40</sup>, the mega-projects like the petroleum hub <sup>5</sup>, and the professional associations like GhCCI and GREDA.<sup>36</sup> However, qualitative evidence from online forums <sup>44</sup> and academic research <sup>9</sup> paints a different picture of the day-to-day reality of construction, especially in the vast residential sub-sector. These activities are typically managed through informal channels, characterized by challenges in worker reliability, inconsistent quality control, and precarious working conditions.

Digital platforms like Jiji provide a direct window into this parallel labor market, showcasing a bustling marketplace where individual artisans and small, informal teams market their skills directly to clients.<sup>26</sup> This is a massive, functioning economic engine. Yet, the government's primary labor market tool, the GLMIS, has almost no visibility into this world; its listings are almost exclusively for formal, corporate roles.<sup>7</sup>

This disconnect means that policies aimed at "improving the construction sector" are often aimed at the smaller, formal part of the industry and may miss their primary target. To genuinely boost national productivity, enhance worker safety at scale, and upskill the workforce to meet the demands of a modernizing economy, policy must be designed to engage with this informal engine. This requires a strategic shift towards interventions that are accessible and relevant to the informal worker, such as mobile-friendly certification programs, the promotion of artisan cooperatives to improve bargaining power and quality control, and the integration of informal job data into national labor market information systems to make the "invisible" workforce visible to policymakers.

**Table 2: Major Infrastructure & Industrial Projects and Employment Impact**

| Project | Sector | Location | Estimate | Timeline | Key | Estimate | Primary |
|---------|--------|----------|----------|----------|-----|----------|---------|
|---------|--------|----------|----------|----------|-----|----------|---------|

| Name                              |   | /Region                       | d Investm<br>ent                  |                  | Employ<br>ment<br>Roles  | d Direct<br>Jobs        | Sourcing<br>Channel   |
|-----------------------------------|---|-------------------------------|-----------------------------------|------------------|--|-------------------------|---|
| <b>West Africa Petroleum Hub</b>  | Industria<br>l/Energy<br>Constru<br>ction | Jomoro,<br>Western            | \$60<br>Billion                   | 2024-<br>2036    | Welders,<br>Pipefite<br>rs,<br>Electrici<br>ans,<br>Engineer<br>s          | 10,000+<br>(Phase<br>1) | Formal Contract<br>ors/Spe<br>cialist<br>Agencie<br>s         |
| <b>Ewoyaa Lithium Mine</b>        | Industria<br>l/Mining<br>Constru<br>ction | Ewoyaa,<br>Central            | ~\$185<br>Million                 | 2024-<br>Ongoing | Plant<br>Constru<br>ction<br>Workers,<br>Miners,<br>Technici<br>ans        | ~800                    | Formal Contract<br>ors/Com<br>pany<br>Direct                  |
| <b>Volivo Bridge</b>              | Transpo<br>rt<br>Infrastru<br>cture       | Eastern<br>Corridor           | Part of<br>\$10B<br>"Big<br>Push" | 2024-<br>Ongoing | Civil<br>Engineer<br>s,<br>Equipme<br>nt<br>Operato<br>rs,<br>Laborer<br>s | 1,000+                  | Formal Contract<br>ors/Loca<br>l Hire                         |
| <b>Pokuase Affordable Housing</b> | Housing/<br>Real<br>Estate                | Pokuase<br>, Greater<br>Accra | Govern<br>ment/Pri<br>vate        | Ongoing          | Masons,<br>Carpent<br>ers,<br>Plumber<br>s,<br>Electrici<br>ans            | 5,000+                  | Mixed<br>(Formal<br>Contract<br>ors,<br>Informal<br>Artisans) |
| <b>Tema Motorway Expansion</b>    | Transpo<br>rt<br>Infrastru<br>cture       | Tema,<br>Greater<br>Accra     | Govern<br>ment/PP<br>P            | Ongoing          | Civil<br>Engineer<br>s, Road<br>Workers,<br>Equipme<br>nt                  | 2,000+                  | Formal Contract<br>ors  |

|                                    |                            |                  |                    |            |  |                             |                    |
|------------------------------------|----------------------------|------------------|--------------------|------------|--|-----------------------------|--------------------|
|                                    |                            |                  |                    |            | Operators                                |                             |                    |
| <b>Three Garment Factories</b>     | Manufacturing Construction | TBD              | Private/Government | Planned    | Construction Workers, Machine Installers | 1,500+ (Construction Phase) | TBD                |
| <b>Tamale Water Supply Project</b> | Utilities/Infrastructure   | Tamale, Northern | Government/EU      | 2025 Start | Pipe Layers, Civil Workers, Engineers    | ~500                        | Formal Contractors |

## Section 4: The Manufacturing Sector: Driving Value Addition and Industrialization

### 4.1. Sub-Sector Employment Profile

Ghana's manufacturing sector, though still developing, is diverse and serves as a critical area for formal employment and value addition. The industrial base comprises a mix of key sub-sectors, each with its own employment characteristics. The sector is populated by a combination of large multinational corporations, prominent local companies, and a vast number of small and medium-sized enterprises (SMEs).<sup>58</sup>

**Garments and Textiles** is a priority area for the government due to its high potential for labor-intensive job creation. The plan to establish three new garment factories, each capable of employing 3,000 workers per shift for a total of 27,000 jobs, is a testament to this focus.<sup>6</sup> This initiative builds on an existing base of companies like Printex and Akosombo Textiles, which are significant local employers.<sup>61</sup>

**Metals, Minerals, and Construction Materials** form the foundational layer of the industrial economy. Companies such as B5 Plus Limited (steel), CBI Ghana (cement),

and Alutrade (aluminum) are crucial suppliers to the booming construction sector and are, in themselves, major industrial employers.<sup>59</sup> The growth of this sub-sector is directly linked to the pace of national infrastructure development.

**Agro-processing and Fast-Moving Consumer Goods (FMCG)** is arguably the most visible sub-sector, dominated by multinational subsidiaries like Nestlé Ghana, Unilever Ghana, Guinness Ghana, and Coca-Cola.<sup>58</sup> These are complemented by large, successful Ghanaian companies like Kasapreko Company Limited (beverages) and PZ Cussons.<sup>61</sup> These firms provide stable, formal employment and often have extensive distribution networks that create further jobs in logistics and sales.

The overall company landscape is broad. The Association of Ghana Industries (AGI) counts over 1,200 member companies, the majority of which are SMEs operating across various manufacturing and service industries.<sup>62</sup> This indicates a vibrant, albeit fragmented, indigenous industrial base that exists alongside the larger, often foreign-owned, corporations.<sup>59</sup>

## **4.2. Workforce Structure and Skills Demand**

Employment in the manufacturing sector is predominantly formal, especially within the medium and large-scale enterprises that form its core. These jobs typically come with formal contracts, social security contributions, and structured work environments. While the core production workforce is formal, the extensive supply chains and distribution networks associated with manufacturing often rely heavily on informal labor, particularly in transportation and retail.

The key roles in demand within the manufacturing sector reflect the operational needs of a factory environment. These include:

14. **Plant and Machine Operators:** Responsible for running the production machinery.
15. **Maintenance Technicians:** Both mechanical and electrical technicians are vital for ensuring machinery uptime and efficiency.
16. **Warehouse and Logistics Personnel:** Roles such as Warehouse Manager, Warehouse Officer, and Forklift Driver/Loader are essential for managing raw materials and finished goods.<sup>65</sup>



17. **Quality Control/Assurance Inspectors:** Critical for maintaining product standards and regulatory compliance.<sup>65</sup>
18. **Production Line Workers:** Involved in the various stages of assembly, processing, and packaging.

A review of job portals provides insight into the formal recruitment landscape. The government's GLMIS portal currently shows a single vacancy for a "Warehouse" position, located overseas, once again highlighting its limited scope in reflecting the domestic job market.<sup>7</sup> In contrast, commercial portals like JobwebGhana and Jobberman list a range of relevant positions, including "Warehouse Manager" at KEDA Ceramics, "Warehouse Officer" at Golden Beam Industries, and "Forklift Driver / Warehouse Loader" for a logistics firm, primarily located in the industrial hubs of Accra and Tema.<sup>65</sup>

### 4.3. Industry Associations and Policy Influence

Two main associations play pivotal roles in shaping the policy environment for the manufacturing sector.

The **Association of Ghana Industries (AGI)** is the country's foremost advocacy group for the industrial sector. With a diverse membership of over 1,200 companies, ranging from small enterprises to large-scale manufacturers, the AGI's mission is to advocate for policies that promote competitiveness and business growth.<sup>67</sup> It provides a platform for networking, facilitates participation in international trade fairs, and serves as a critical voice for industry in dialogue with the government.<sup>68</sup>

The **Ghana Union of Traders' Associations (GUTA)**, while primarily focused on commerce and trade, is a highly influential voice in the manufacturing discourse.<sup>70</sup> GUTA's perspective is crucial as its members are often at the front line of competition between locally manufactured goods and imports. The association has been vocal about the role of foreign investment in the manufacturing sector. Recently, GUTA's president urged Chinese manufacturers establishing operations in Ghana to form inclusive partnerships with local businesses, expressing concern that Ghanaians must be "taken along" in the industrialization process and not be left behind.<sup>10</sup> This position highlights a key tension in the national industrial strategy.

#### **4.4. Core Analytical Finding: The Integration vs. Enclave Development Dilemma**

Ghana's national manufacturing strategy appears to be at a crossroads, facing a critical choice between two distinct development models. The first is an "enclave" model, characterized by large-scale, often foreign-led, standalone projects. The second is an "integrated" model, which prioritizes the strengthening and growth of the existing local SME base through strategic partnerships, capacity building, and supply chain development. The path chosen will have profound and lasting implications for the nature, quality, and sustainability of job creation in the sector.

The government's pursuit of large-scale projects, such as the plan for three major garment factories with foreign collaboration, exemplifies the "enclave" or "big push" approach.<sup>6</sup> This model can deliver impressive headline job numbers in a relatively short period. However, at the same time, industry bodies representing local businesses, most notably GUTA, are sounding a note of caution. Their call for foreign investors to form genuine joint ventures with Ghanaians reflects a deep-seated concern that the enclave model can lead to a dual economy, where a few modern, foreign-owned firms operate with weak linkages to the broader domestic economy, potentially displacing local producers without significant knowledge transfer.<sup>10</sup>

The structure of the AGI, with its membership dominated by over 1,200 SMEs, confirms that the existing fabric of Ghanaian industry is woven from smaller, local threads.<sup>62</sup> This reveals the fundamental tension in industrial policy. The enclave model risks creating jobs that are primarily low-skill assembly roles with limited career progression and minimal spillover benefits in terms of local management skills or supply chain development. The integrated model, while potentially slower and more complex to implement, promises a more organic and sustainable form of industrialization. It focuses on upgrading the entire ecosystem, fostering local entrepreneurship, developing higher-value technical and managerial roles within a network of local firms, and ensuring that the benefits of industrial growth are more broadly distributed. The national workforce development strategy must therefore be closely aligned with a clear and deliberate policy choice on which of these development paths to prioritize.

## Section 5: The Transportation and Logistics Sector: The Arteries of Commerce

### 5.1. Modal Employment Landscape

The transportation and logistics sector in Ghana is a complex and multifaceted domain that serves as the circulatory system for the entire economy. Employment within this sector is distributed across various modes of transport, each with its own unique structure and workforce profile.

**Road Transport** is unequivocally the dominant mode, accounting for the vast majority of passenger and freight movement in the country. This sub-sector is characterized by a massive informal economy comprising a large number of commercial drivers (of "tro-tros," taxis, and long-haul cargo trucks), vehicle mechanics, spare parts dealers, and transport union operatives.<sup>72</sup> Alongside this is a growing formal sector of logistics, haulage, and passenger transport companies, such as Intercity STC Coaches Limited and Metro Mass Transit Ltd, as well as numerous private haulage firms.<sup>73</sup>

**Maritime and Ports** represent a critical node for international trade and formal employment. The deep-water ports of Tema and Takoradi are the epicenters of this activity, providing jobs in port operations, stevedoring, shipping agencies, freight forwarding, and customs brokerage.<sup>76</sup> Companies like Africa Global Logistics (AGL), OMA Logistics, and Allship Logistics are major players in this space.<sup>76</sup>

**Air Transport**, centered at Kotoka International Airport, provides formal employment in passenger airlines (like Africa World Airlines), air cargo handling, and various airport support services.<sup>79</sup> This sub-sector is vital for high-value exports and time-sensitive logistics.

**Rail Transport** is a sector experiencing a significant revival. After decades of decline, the government is investing in rehabilitating and expanding the rail network, most notably with the commissioning of the 97-kilometer standard gauge Tema-Mpakadan railway line.<sup>81</sup> This modernization is creating new, specialized employment opportunities in railway operations, signaling, track maintenance, and station management, roles that have been scarce for a generation.

## 5.2. Workforce Structure: The Formal/Informal Bifurcation

The workforce in transportation and logistics is sharply bifurcated between a growing class of formal-sector professionals and a massive informal-sector workforce.

**Formal Logistics Professionals** are increasingly in demand as supply chains become more complex. These are individuals with formal qualifications in logistics, supply chain management, and transport planning. The **Chartered Institute of Logistics and Transport (CILT) Ghana** is the key professional body for this group, offering a structured educational pathway from an International Certificate to an International Advanced Diploma. These qualifications cover strategic areas like business theory, supply chain management, strategic network planning, and leadership, preparing individuals for senior management roles.<sup>11</sup> A survey of formal job portals reflects this demand, with listings for positions such as "Head, Logistics and Transportation" at Dangote, "Logistics Manager" at Jumia Group, and "Customer Relations and Logistics Coordinator" requiring degrees and specific experience in freight forwarding or project management.<sup>83</sup>

The **Informal Transport Operatives** make up the vast majority of the sector's workforce. This group includes hundreds of thousands of commercial drivers, dispatch riders ("okada" and courier services), and their assistants ("mates"). Recruitment is almost entirely informal, based on personal connections and apprenticeships. The rise of digital platforms like Tonaton and Jiji has created a new channel for this market, with numerous listings for "Dispatch Rider" and "Company Driver" roles, often with specified monthly salary ranges like GH¢1,000-1,500 or GH¢1,500-2,000.<sup>86</sup>

A critical support system for this informal transport network is the community of **Automotive Artisans**. These are the mechanics, electricians, welders, and bodywork specialists who operate primarily out of the large, informal industrial clusters known as "Magazines," such as the famous Suame Magazine in Kumasi. The **Ghana National Association of Garages (GNAG)** is the main representative body for these artisans, providing a platform for advocacy and connecting them with customers.<sup>12</sup>

### 5.3. Key Industry Bodies

The sector's dual nature is reflected in its representative bodies.

The **Chartered Institute of Logistics and Transport (CILT) Ghana**, established in 1965, is the premier professional organization for the formal logistics and transport industry. It is dedicated to promoting professional standards, providing education and certification, and shaping policy through advocacy.<sup>82</sup> With a growing membership recently augmented by the induction of 88 new members, and an expanding regional footprint with sections in Accra, Kumasi, Takoradi, Tema, and Sunyani, CILT is the voice of the modern, professionalized logistics sector.<sup>90</sup>

The **Ghana National Association of Garages (GNAG)** represents the interests of the informal automotive repair sector. Its constitution outlines objectives focused on standardizing services, sharing technology, and training members.<sup>93</sup> GNAG provides a crucial organizing function for thousands of artisans. Importantly, it is actively seeking to bridge the gap with the formal sector through initiatives like a Memorandum of Understanding (MoU) with Kumasi Technical University (KsTU) to provide theoretical training and formal certification for its members, recognizing the need to upgrade skills for modern vehicles, including electric ones.<sup>12</sup>

### 5.4. Core Analytical Finding: Diverging Worlds and the Need for a Skills Bridge

A deep analysis of the transportation and logistics sector reveals that it is not a single, unified field but is rapidly diverging into two distinct worlds. The first is a high-skill, data-driven, formal logistics industry focused on strategic management and global supply chains. The second is a low-to-medium-skill, hands-on, informal transport operations industry focused on practical vehicle movement and maintenance. Critically, there is currently no clear or established "skills bridge" or career pathway connecting these two worlds. This represents a significant structural weakness and a major missed opportunity for workforce development and social mobility.

The formal sector, represented by CILT, operates in a world of degrees, professional certifications, and strategic planning.<sup>11</sup> Job advertisements in this sphere demand

project management skills, knowledge of customs processes, and the ability to manage complex shipping activities.<sup>85</sup> The career path is structured, leading from coordinator roles to senior management.

In stark contrast, the informal sector, represented by GNAG, is rooted in practical, hands-on skills acquired through years of apprenticeship.<sup>12</sup> The training needs and career aspirations are immediate and practical: learning to repair new types of engines, mastering diagnostic tools, and preparing for the advent of electric vehicles.<sup>12</sup>

These two worlds currently operate in parallel with very little intersection. A highly experienced master mechanic from Suame Magazine, possessing deep practical knowledge of vehicle systems, has no defined pathway to transition into a CILT-certified logistics manager role. The required skills are perceived as different, the professional networks are entirely separate, and the educational systems that serve them are disconnected.

This bifurcation traps a vast pool of practical talent and experience within the informal sector, with limited opportunities for upward mobility into the more strategic and higher-paying echelons of the logistics industry. The policy implication is the urgent need to design and build a "skills bridge." This would involve creating flexible, modular training programs that recognize and build upon practical experience. For example, a program could be developed to allow experienced artisans from GNAG to gain formal qualifications in fleet management or supply chain basics. It would also require creating "technician-to-technologist" pathways within the TVET and university systems, where demonstrated practical competence could be formally recognized as a basis for entry into higher-level logistics and transport management programs, thereby creating a permeable barrier between the two diverging worlds.

## **Section 6: The Utilities and Energy Sector: Powering Economic Activity**

### **6.1. Employment Drivers and Project Pipeline**

Employment in Ghana's utilities and energy sector is being driven by a dual government strategy focused on both expanding traditional grid infrastructure and accelerating a transition towards renewable energy sources.

**Grid Expansion and Modernization** remains a core activity. The government's long-standing Rural Electrification Program is a significant and consistent source of employment, with a target to increase the national electricity access rate from 89.03% in 2024 to 90% by the end of 2025.<sup>13</sup> This ongoing effort requires a steady workforce of linesmen, technicians, and engineers for the physical extension of the national grid and the maintenance of existing infrastructure. Furthermore, a focus on improving efficiency within the distribution network, supported by a \$250 million World Bank facility, is expected to create new opportunities in areas like the installation and management of smart metering systems.<sup>13</sup>

The **Renewable Energy Transition** is emerging as a powerful new driver of specialized employment. The government has clearly signaled its policy direction with the establishment of a new Renewable Energy and Green Transition Fund and the development of a National Green Jobs Strategy.<sup>13</sup> This policy is translating into concrete projects, including plans in 2025 to construct 35 off-grid mini-grids and supply solar home systems to public facilities in remote communities.<sup>13</sup> This creates direct demand for a new class of green-collar workers, particularly those skilled in solar technology.

**Thermal Power Generation** also continues to be a source of high-skill employment. To enhance grid stability, the government has relocated the 250 MW Africa and Middle East Resource Investment (AMERI) thermal plant to the middle belt of the country, a major engineering and installation project.<sup>13</sup> The stated policy of striving to use 100% natural gas for power generation will also require a specialized workforce for the operation and maintenance of gas-fired power plants and associated infrastructure.<sup>13</sup>

## 6.2. Workforce Structure and Key Skills

The workforce in the utilities and energy sector is predominantly formal and requires a high degree of technical skill and certification due to the critical and hazardous nature of the work.



**Engineers** are in high demand across the sector. A review of job portals like Careerjet and BusinessGhana reveals numerous vacancies for Electrical Engineers, Electrical Supervisors, and Electrical Foremen, particularly in the industrial and administrative hubs of Accra, Tema, and Obuasi.<sup>50</sup> These roles are offered by a range of employers, including mining companies (AngloGold Ashanti, Newmont), industrial firms (Nestlé), and engineering service providers (Baker Hughes).<sup>50</sup> The responsibilities range from designing and implementing complex industrial electrical systems to supervising maintenance teams.

**Technicians** form the backbone of the sector's field operations. Key roles include Electrical Technicians, who are responsible for the installation, maintenance, and repair of electrical systems, wiring, and equipment.<sup>50</sup> The growth of the renewables sub-sector is creating a specific and growing demand for

**Solar Photovoltaic (PV) Technicians**, who are skilled in the installation, commissioning, and maintenance of solar panels and associated systems.

**Plant-Specific Roles** are required for the operation of power generation facilities. The thermal plants and the future petroleum hub will create demand for Mechanical Engineers, Plant Operators, and Maintenance Crews with specialized knowledge of turbines, generators, and control systems. Similarly, the expanding mining sector creates demand for specialized roles like Auto Electricians for underground mining equipment and Drill Electricians.<sup>52</sup>

### 6.3. Core Analytical Finding: The Green Skills Imperative

The government's parallel pursuit of traditional grid extension and a rapid green energy transition is creating a bifurcated demand for electrical skills. While the existing Technical and Vocational Education and Training (TVET) system may be adequately structured to produce technicians for conventional grid-related roles, it appears largely unprepared for the scale and specificity of the demand for "green skills." This emerging gap, particularly in solar PV installation and maintenance, poses a potential bottleneck that could hinder the pace of Ghana's green transition.

The policy landscape is clear: investment is flowing into both traditional electrification projects<sup>13</sup> and a new suite of renewable energy initiatives, with a strong emphasis on



decentralized solar power.<sup>13</sup> This creates two distinct, albeit related, skills profiles. The first is the traditional linesman or grid technician, focused on medium-to-high voltage distribution systems. The second is the modern solar PV installer or mini-grid technician, who must be proficient in low-voltage DC systems, battery storage, and inverter technology.

A review of the national TVET program offerings provides cause for concern. While there are well-established programs in "Electrical Engineering Technology," which are suitable for traditional roles <sup>14</sup>, there is only a single, specific mention of a "Solar Photovoltaic Technology" program.<sup>14</sup> The current capacity, curriculum quality, and geographic availability of this specialized green skills program are unclear. This suggests a significant lag between policy ambition and educational preparedness. The government's renewable energy goals appear to be moving much faster than the TVET system's ability to design, accredit, and scale up the new programs required to meet the resultant labor demand.

To avert a critical skills shortage and ensure the success of its green energy objectives, Ghana must undertake a proactive and urgent initiative to develop green skills at scale. This should include a rapid expansion of the existing Solar PV Technology program, making it a priority within the TVET system. Furthermore, mandatory modules on renewable energy systems and sustainable building practices should be integrated into all standard electrical, plumbing, and construction courses to build a foundational level of green literacy across the trades. Finally, creating fast-track certification programs would allow existing, certified electricians to upskill and transition into the growing renewables market, providing a quick and efficient way to expand the green workforce.

**Table 3: Iron Economy Skills Demand Matrix**

| Skilled Trade/Profession | Construction | Manufacturing | Transportation & Logistics | Utilities & Energy | Required Certifications (Examples)                  |
|--------------------------|--------------|---------------|----------------------------|--------------------|---|
| <b>Welder</b>            | High         | High          | Medium                     | High               | NVTI/GTVET S Cert. I & II, Specialized Certs (e.g., |

|  |        |        |        |        |  |
|--|--------|--------|--------|--------|--|
|  |        |        |        |        | Pipe, Argon)   |
| <b>Electrician</b>                                 | High   | High   | Medium | High   | NVTI/GTVET<br>S Cert. I & II,<br>Energy<br>Commission<br>License     |
| <b>Heavy<br/>Equipment<br/>Operator</b>            | High   | Low    | High   | Medium | License E,<br>NVTI/GTVET<br>S<br>Certification                       |
| <b>Industrial/D<br/>iesel<br/>Mechanic</b>         | Medium | High   | High   | High   | NVTI/GTVET<br>S Cert. I & II,<br>HND<br>Mechanical<br>Engineering    |
| <b>Logistics/Su<br/>pply Chain<br/>Coordinator</b> | Medium | High   | High   | Medium | CILT<br>Diploma/Adv<br>anced<br>Diploma,<br>University<br>Degree     |
| <b>Project<br/>Manager</b>                         | High   | Medium | Medium | High   | PMP,<br>University<br>Degree<br>(Engineering<br>/Business)           |
| <b>Mason/Carp<br/>enter</b>                        | High   | Low    | Low    | Low    | NVTI/GTVET<br>S<br>Certification,<br>Apprentices<br>hip              |
| <b>Solar PV<br/>Technician</b>                     | Medium | Low    | Low    | High   | GTVETS<br>Solar PV<br>Tech Cert.,<br>Energy<br>Commission<br>License |

---

## Part III: The Skills Supply Chain: Bridging the Workforce Gap

### Section 7: The TVET Ecosystem: Forging the Workforce of Tomorrow

#### 7.1. Institutional Framework

Ghana has undertaken significant reforms to create a more unified and industry-responsive Technical and Vocational Education and Training (TVET) ecosystem. This framework is crucial for producing the skilled workforce required by the Iron Economy.

The **Ghana TVET Service (GTVETS)**, established under the Pre-Tertiary Education Act of 2020, is the central management body. Its creation was a landmark reform aimed at consolidating the previously fragmented TVET landscape, which saw training institutions scattered across nine different ministries.<sup>98</sup> The core mission of GTVETS is to bridge the gap between education and industry, empowering the youth with practical, employable skills.<sup>98</sup>

The **National Vocational Training Institute (NVTI)** is a long-standing and key operational arm of the skills development system. Established in 1970, the NVTI operates 38 of its own training centers across the country and is responsible for a wide range of training activities.<sup>100</sup> It offers both school-based programs leading to certifications like the National Craftsman's Certificate (NCC) and manages a comprehensive workshop-based apprenticeship system for the informal sector.<sup>101</sup>

The **Commission for TVET (CTVET)** serves as the national regulator for the sector. Its responsibilities include quality assurance, accreditation of institutions and programs, and the administration of the Ghana TVET Qualifications Framework (NTVETQF).<sup>16</sup> The NTVETQF is a critical tool designed to standardize qualifications

and create clear, progressive pathways for learners, from basic proficiency levels up to higher diplomas and degrees.<sup>99</sup>

## 7.2. Training Programs and Relevance to the Iron Economy

The reformed TVET system offers a comprehensive suite of programs that are directly relevant to the skills needs of the Iron Economy. These competency-based training programs are designed to provide hands-on, practical skills.

A review of the accredited programs list reveals a strong alignment with industrial demand<sup>14</sup>:

19. **Construction Trades:** Programs are offered in Block Laying & Tiling, Furniture Works, Plumbing and Gas Technology, and Welding & Fabrication Technology. These are available at various proficiency and certificate levels (NP I, NP II, NC I, NC II), allowing for progressive skill development.<sup>16</sup>
20. **Automotive and Engineering Trades:** The system provides training in Automotive Engineering Technology, Heavy Duty Mechanics, Mechanical Engineering Technology, and Industrial Mechanics, all of which are vital for the manufacturing, transport, and mining sectors.<sup>14</sup>
21. **Electrical and Electronics Trades:** Core programs in Electrical Engineering Technology and Electronics Engineering Technology cater to the needs of all sectors, while more specialized programs like Electrical Machine/Motor Rewinding address specific industrial maintenance needs.<sup>14</sup>
22. **Emerging and Utilities-Focused Trades:** Crucially, the system includes forward-looking programs such as Solar Photovoltaic Technology and Mechatronics Engineering Technology, designed to meet the demands of the green economy and advanced manufacturing.<sup>14</sup>

These programs are delivered through a network of public and private institutions, including major public centers like the Accra Technical Training Centre (ATTC) and Kumasi Technical Institute, as well as private providers like Kohene Technology Institute and the Institute of Professional and Entrepreneurial Studies (IPES).<sup>103</sup>

One of the most innovative models within the ecosystem is the **Ghana TVET Voucher Project (GTVP)**. This Ghanaian-German development cooperation initiative provides

demand-driven, subsidized training vouchers. These vouchers empower master craftspeople and their apprentices in the informal sector to access competency-based training and certification from accredited institutions in high-demand trades, including welding, plumbing, electrical installation, and automotive repair.<sup>16</sup> This program directly targets the skills gap at its source.

### 7.3. The Persistent Skills Gap

Despite this well-structured framework and relevant program offerings, a significant skills gap persists in Ghana. The challenge is twofold, encompassing both quantity and quality.

The **quantitative deficit** is well-documented. As previously noted, the construction sector alone faces a shortfall of tens of thousands of skilled artisans.<sup>2</sup> This indicates that the current output of the TVET system is insufficient to meet the absorption capacity of the growing Iron Economy sectors.

The **quality deficit** is equally, if not more, critical. A primary motivation for the recent TVET reforms was the long-standing mismatch between the curricula of training institutions and the dynamic needs of industry.<sup>99</sup> Employers have often found graduates lacking in practical, real-world skills. The emphasis of the new GTVETS and the competency-based training model is a direct attempt to remedy this by ensuring that training is hands-on and that graduates are certified based on their ability to perform a job, not just pass a theoretical exam.<sup>99</sup> However, transforming the entire ecosystem to meet this new standard of quality and relevance is a long-term process that is still underway.

**Table 4: TVET Program Alignment with Iron Economy Needs**

| Iron Economy Role     | Corresponding TVET Program | Offering Institutions (Examples) | Qualification Level | Perceived Gaps/Observations |
|-----------------------|----------------------------|----------------------------------|---------------------|-----------------------------|
| <b>Welder/Fabrica</b> | Welding &                  | ATTC, Kohene                     | NP I, NP II, NC I,  | High demand                 |

|                            |   |                           |                          |   |
|----------------------------|---|---------------------------|--------------------------|---|
| <b>tor</b>                 | Fabrication Technology                                      | Tech, NVTI Centres        | NC II                    | across sectors. Need for more specialized training (e.g., TIG, MIG) to meet industrial standards.                               |
| <b>Electrician</b>         | Electrical Engineering Technology / Electrical Installation | ATTC, IPES, NVTI Centres  | NP I, NP II, NC I, NC II | Core program is strong, but curriculum needs urgent updating to include mandatory green skills (solar, energy efficiency).      |
| <b>Heavy Duty Mechanic</b> | Heavy Duty Mechanics / Automotive Engineering               | ATTC, NVTI Centres        | Certificate/Diploma      | Critical skill for mining and construction. Availability of programs may not match high regional demand (e.g., Western Region). |
| <b>Plumber</b>             | Plumbing and Gas Technology                                 | GTVETS Accredited Centres | NP I, NP II, NC I, NC II | Program exists but needs scaling. Integration of water-saving and green plumbing technologies is needed.                        |
| <b>Solar PV Technician</b> | Solar Photovoltaic Technology                               | GTVETS Accredited Centres | Certificate              | Critical emerging skill. Program availability   |

|                           |                         |                                     |             |  |
|---------------------------|-------------------------|-------------------------------------|-------------|--|
|                           |                         |                                     |             | appears very limited and needs rapid, nationwide scaling to meet green transition goals.                                   |
| <b>Mason/Tiler</b>        | Block Laying and Tiling | GTVETS Accredited Centres           | NP I, NP II | Foundational trade. Key challenge is formalizing the skills of the vast informal workforce through programs like GTVP.     |
| <b>Automotive Artisan</b> | Automotive Mechanic     | NVTI Centres, GNAG/KsTU Partnership | NP I, NP II | Massive informal training system. The GTVP and university partnerships are key to upgrading and certifying this workforce. |

---

## Section 8: The Informal Apprenticeship System: Acknowledging the Unseen Engine

### 8.1. The Traditional Model

Beyond the formal walls of TVET institutions lies Ghana's largest and most established skills training mechanism: the informal apprenticeship system. This traditional model

is the de facto pathway for skills acquisition for hundreds of thousands of young people, particularly in the construction and automotive repair trades.<sup>9</sup> Under this system, apprentices, often with limited formal education, learn a trade directly on the job from a "master craftsman" over a period of two to four years.<sup>99</sup>

This system is highly decentralized. In the automotive sector, it has a degree of formal structure through the **Ghana National Association of Garages (GNAG)**, which serves as a semi-formal representative body for master mechanics and their workshops across the country's "Magazine" industrial clusters.<sup>12</sup> In the construction sector, the system is even more fragmented, typically involving individual master artisans (masons, carpenters, etc.) taking on one or more apprentices at a time.<sup>44</sup>

## 8.2. Strengths and Weaknesses

The enduring prevalence of the informal apprenticeship system is due to its significant strengths. Its primary advantage is **accessibility**: it has virtually no formal entry requirements, making it open to individuals regardless of their educational background. It is also perceived as low-cost, as training is often exchanged for labor, and it provides immediate, **practical, hands-on experience** in a real-world work environment.<sup>99</sup>

However, the system is also fraught with significant weaknesses that constrain productivity and limit the potential of its participants. A major issue is the **lack of standardization**; the quality and content of training vary dramatically from one master to another. This often leads to the perpetuation of **outdated techniques** and a failure to incorporate modern technologies and materials. **Poor safety standards** are endemic, with little formal instruction on occupational health and safety. The working conditions can be **exploitative**, with long hours and minimal pay. Perhaps most critically, the system culminates in no **formal certification**, which severely limits the career mobility of graduates. An artisan trained informally, no matter how skilled, faces significant barriers to securing formal employment in a large company or working on major projects that require certified qualifications.<sup>9</sup>

## 8.3. Bridging the Gap: Formalization and Integration Efforts



Recognizing both the scale of the informal system and its inherent weaknesses, various stakeholders have initiated efforts to bridge the gap between informal training and the formal economy.

**University Partnerships** offer a promising model for integration. The Memorandum of Understanding (MoU) signed between Kumasi Technical University (KsTU) and GNAG is a landmark initiative. Under this collaboration, experienced artisans from GNAG can receive supplementary theoretical training at the university and earn formal certification, validating their practical skills with recognized credentials.<sup>15</sup> This model provides a pathway for upgrading skills and formalizing expertise.

**Government Programs** are also being deployed to tackle this issue. The **National Apprenticeship Programme (NAP)** and the **Ghana TVET Voucher Project (GTVP)** are specifically designed to engage with and improve the informal system. These programs offer subsidies for training, provide access to standardized curricula and assessment, lead to formal NVTI certification, and in some cases, offer business coaching and startup support.<sup>16</sup> They represent a state-led effort to standardize and support traditional apprenticeships.

**Unionization** provides another avenue for empowerment. Organizations like the **Union of Informal Sector Workers (UNIWA)** are working to organize informal workers to collectively advocate for better working conditions, social protection, and access to training.<sup>8</sup> While its reach is still limited relative to the size of the informal economy, it represents an important step towards giving a collective voice to this segment of the workforce.

#### **8.4. Core Analytical Finding: The Integration Opportunity**

The evidence strongly suggests that the vast informal apprenticeship system should not be viewed as a problem to be eradicated, but rather as a massive, existing national asset to be leveraged. Consequently, the most pragmatic, cost-effective, and scalable workforce development strategy for Ghana's skilled trades lies not in attempting to replace this system with a purely formal one, but in systematically integrating it through targeted interventions focused on standardization,

modernization, and certification.

The sheer scale of the informal system means it trains far more artisans each year than all the formal TVET institutions combined.<sup>9</sup> Building a parallel formal system from the ground up to match this capacity would be a slow and prohibitively expensive undertaking. The primary weaknesses of the informal system are not a lack of practical training, but rather the absence of standardized quality, modern knowledge, and formal recognition.<sup>9</sup>

Initiatives like the KsTU-GNAG partnership<sup>15</sup> and the GTVP<sup>16</sup> demonstrate a much more viable path forward. This "integration" model works

*with* the existing social infrastructure of the master-apprentice relationship. It leverages the accessibility and practical nature of on-the-job training while injecting the critical missing elements: updated curricula (e.g., on new materials or electric vehicles), formal safety standards, and a pathway to nationally recognized certification. This approach is far more efficient than starting from scratch. It builds on what already works, fixes what is broken, and provides a clear strategy for rapidly closing the skilled trades gap by upgrading the skills of the existing and future workforce at its source.

---

## **Part IV: Strategic Synthesis and Recommendations**

### **Section 9: Integrated Analysis: Regional and Cross-Sectoral Insights**

#### **9.1. Cross-Sectoral Skills Demand**

A synthesis of the employment demands across the four Iron Economy sectors reveals a set of core technical skills that are foundational to industrial activity in Ghana. Prioritizing the development of these cross-sectoral competencies offers the

most efficient path to building a flexible and resilient industrial workforce.

23. **Welding and Metal Fabrication:** This skill is indispensable across the board. It is in high demand in **Construction** for fabricating steel structures and in pipeline work for infrastructure projects. In **Manufacturing**, it is essential for machine fabrication and repair. In the **Utilities** sector, it is critical for power plant construction and maintenance. The transport sector also relies on welders for vehicle body repairs.<sup>47</sup>
24. **Electrical and Mechanical Maintenance:** The ability to install, maintain, and repair machinery is a universal requirement. **Manufacturing** plants depend on maintenance technicians to ensure production uptime. The **Utilities** sector requires them for the maintenance of power generation and distribution equipment. The **Transportation** sector needs skilled mechanics to service vehicle fleets, and the **Construction** sector requires them for on-site machinery maintenance.
25. **Heavy Equipment Operation and Maintenance:** This is a core skill for large-scale projects. It is fundamental to the **Construction** sector for earthmoving and material handling. It is also critical in the **Mining** sub-sector of manufacturing and in large-scale **Logistics** operations at ports and industrial sites.<sup>53</sup>
26. **Logistics and Supply Chain Management:** As business operations become more complex and integrated, the ability to manage the flow of goods and materials is a growing need across all sectors. **Manufacturing** firms need logistics professionals to manage raw material inputs and finished product distribution. **Construction** projects require them for materials procurement and site delivery. The **Utilities** sector needs them for managing the supply chain for spare parts and new equipment.

## 9.2. Regional Employment Hotspots

The geographical distribution of Iron Economy activity is not uniform across Ghana. Employment opportunities are concentrated in specific regional hotspots, each with a distinct industrial character.

27. **Greater Accra & Tema:** This conurbation is the undisputed economic and industrial heartland of the nation. It is the primary hub for **Manufacturing**, hosting numerous industrial areas like the Tema Freezone.<sup>60</sup> It is the center of the

**Logistics** industry, with the Port of Tema and Kotoka International Airport serving as the main gateways for trade.<sup>75</sup> It is also the site of a significant number of major

**Construction** projects, including the Tema Motorway expansion and numerous commercial and residential developments.<sup>31</sup>

28. **Western Region (Takoradi/Tarkwa):** This region is the hub for Ghana's extractive industries and the associated support services. It is the center for the **Mining** industry (a sub-sector of manufacturing) and the burgeoning **Oil and Gas** sector (a sub-sector of utilities).<sup>5</sup> This concentration drives high demand for specialized construction, logistics, and engineering services, making Takoradi a key location for CILT activities.<sup>91</sup>
29. **Ashanti Region (Kumasi):** Kumasi serves as a major commercial and distribution hub for the northern half of the country. Its most notable feature is the Suame Magazine, one of West Africa's largest informal industrial estates, making it the epicenter of the informal **automotive repair** and light manufacturing sector.<sup>12</sup> The region is also seeing a growth in formal construction and logistics operations to service its large population and market.<sup>83</sup>
30. **Northern Regions:** While historically less industrialized, the northern parts of Ghana are emerging as new frontiers for employment opportunities, driven largely by government-led infrastructure and development projects. These include major **transport infrastructure** projects like the rehabilitation of the Wa-Tumu-Navrongo trunk road, **agricultural schemes** requiring irrigation infrastructure, and key **utilities** projects like the Tamale Water Supply Project.<sup>32</sup>

## Section 10: Actionable Recommendations for Stakeholders

The findings of this report point to a clear set of strategic priorities for unlocking the employment potential of Ghana's Iron Economy. The following recommendations are targeted at key stakeholder groups and are designed to be actionable, data-driven, and mutually reinforcing.

### 10.1. For National Workforce Development (MELR, GTVETS)

31. **Recommendation 1: Launch a "Skilled Artisan Accelerator" Program.** The analysis confirms a severe structural mismatch between labor supply and industry demand for technical skills. To address this head-on, the government should launch a national, high-priority program focused on rapidly increasing the supply of certified artisans in the most critical trades. This program should aggressively scale up the successful Ghana TVET Voucher Project (GTVP) model<sup>16</sup>, which provides demand-driven, subsidized training. The focus should be on the cross-sectoral "power skills" identified in the Skills Demand Matrix, particularly welding, industrial electricals, heavy equipment operation, and solar PV technology. To ensure relevance, the program must be designed and executed in direct partnership with key industry associations like the Ghana Chamber of Construction Industry (GhCCI) and the Association of Ghana Industries (AGI).
32. **Recommendation 2: Formalize the Informal Apprenticeship System.** The analysis shows that the informal apprenticeship system is a massive, underutilized national asset. Rather than trying to replace it, policy should focus on integrating it. A national framework should be created to formally recognize, support, and certify experienced master craftspersons as accredited trainers. This can be modeled on the successful partnership between Kumasi Technical University and the Ghana National Association of Garages (GNAG).<sup>15</sup> These certified masters should be provided with updated, standardized curricula, modern safety protocols, and financial incentives to train apprentices to a national standard, culminating in a formal GTVETS/NVTI certification. This represents the most cost-effective and scalable pathway to upgrading the skills of the majority of the nation's artisans.
33. **Recommendation 3: Mandate "Green Skills" Modules in all Technical Training.** The government's green transition goals are creating an urgent demand for new skills that the current TVET system is not prepared to meet at scale. To preempt a critical bottleneck, GTVETS should mandate the integration of "green skills" modules into all relevant technical training programs. All electrical, plumbing, and construction courses must include foundational, practical modules on renewable energy technologies (especially solar PV), energy efficiency principles, and sustainable building practices. This will ensure that the entire next generation of artisans is equipped with the basic competencies required for the green economy.

## 10.2. For Infrastructure Planning (MWH, Ministry of Roads, NDPC)

34. **Recommendation 4: Integrate Labour Impact Assessments into all Major Project Approvals.** To connect large-scale investments directly to local employment, all major public and public-private partnership (PPP) infrastructure projects, such as those under the "Big Push" initiative <sup>4</sup>, must be required to include a detailed Labour Impact Assessment as part of the approval process. This assessment should specify the number and type of jobs to be created at each skill level, outline a clear plan for sourcing and training local labor, and set verifiable local content targets. These plans should be developed in coordination with the MELR to ensure alignment with national workforce development strategies.
35. **Recommendation 5: Strengthen and Mandate the use of GLMIS for Project Recruitment.** The analysis identified a critical implementation gap between national employment policies and the functionality of the GLMIS platform. To close this gap and create a transparent national labor market, all government-funded or supported projects must be mandated to list all vacancies—from senior engineers to general laborers—on the GLMIS. This single policy change would provide the critical mass of data and opportunities needed to make the platform the central, functioning observatory it was designed to be. It would also provide a single, accessible portal for Ghanaian job seekers to find opportunities generated by public investment, enhancing fairness and transparency in recruitment.

### 10.3. For Industrial Coordination (Ministry of Trade, AGI, GUTA)

36. **Recommendation 6: Develop a "Joint Venture and Local Content" Policy for Strategic Industries.** The analysis highlighted a tension between "enclave" and "integrated" models of industrial development. To promote a more sustainable and inclusive model, the government should create a clear policy that incentivizes foreign investment that fosters local partnerships. This could include offering preferential tax rates, streamlined permitting, or priority access to industrial land for foreign investors who enter into meaningful joint ventures with local Ghanaian companies, as advocated by GUTA.<sup>10</sup> The policy should also promote local sourcing and supply chain development, encouraging large investors to build the capacity of local SMEs, thereby fostering skills transfer and retaining more value

within the Ghanaian economy.

37. **Recommendation 7: Establish Sector Skills Councils.** To create a permanent and dynamic link between the supply and demand sides of the labor market, the government should facilitate the establishment of formal Sector Skills Councils for each of the core Iron Economy sectors. These councils should be co-chaired by senior representatives from industry (e.g., AGI, GhCCI, CILT) and the education and training sector (e.g., GTVETS, representatives from technical universities). Their mandate would be to meet regularly to review industry trends, identify emerging skills needs, and provide direct input into the continuous updating of TVET curricula and national training standards. This would institutionalize the industry-academia collaboration that is essential for closing the skills gap and ensuring the long-term competitiveness of Ghana's industrial workforce.

## Works cited

- Ghana Unemployment Data: Trends and Insights for 2024, accessed June 26, 2025, <https://www.matsh.co/en/unemployment-statistics-in-ghana/>
- Construction sector could create 1m new jobs in Ghana in 2015-20 - Oxford Business Group, accessed June 26, 2025, <https://oxfordbusinessgroup.com/reports/ghana/2018-report/economy/built-to-last-local-training-and-international-partners-generate-new-ideas>
- Title Ghana's Construction Sector and Youth Employment: Subtitle | PDF | Economic Growth, accessed June 26, 2025, <https://www.scribd.com/document/484805037/10787>
- \$10B Big Push Plan: Japan to Help Complete Ghana's Game-Changing Volivo Bridge, accessed June 26, 2025, <https://thevoiceofafrica.com/2025/06/05/10b-big-push-plan-japan-to-help-complete-ghanas-game-changing-volivo-bridge/>
- Ghana Construction Industry Report 2025: Output to Grow at - GlobeNewswire, accessed June 26, 2025, <https://www.globenewswire.com/news-release/2025/03/31/3052070/28124/en/Ghana-Construction-Industry-Report-2025-Output-to-Grow-at-an-AAGR-of-5-2-During-2026-2029-Supported-by-Investments-in-Industrial-and-Energy-Sectors.html>
- Ghana to engage Private Sector to establish three garment factories - Just Style, accessed June 26, 2025, <https://www.just-style.com/news/ghana-garments-factories-establish/>
- Current Job Vacancies - GLMIS | Ghana Labour Market Information ..., accessed June 26, 2025, <https://glmis.gov.gh/jobs/joblistings>
- INFORMAL WORKERS AND SOCIAL DIALOGUE IN GHANA - FNV, accessed June 26, 2025, <https://www.fnv.nl/getmedia/9d999a13-58da-46d2-bb53-9ddccdd0a74/Mondiaal-FNV-Case-study-Ghana-final-aug-2019.pdf>



- An Investigation into the Working Conditions of Informal Construction Artisans in the Ghanaian Construction Industry | CoLab, accessed June 26, 2025, [https://colab.ws/articles/10.1007%2F978-3-031-69606-0\\_23](https://colab.ws/articles/10.1007%2F978-3-031-69606-0_23)
- GUTA urges Chinese investors to partner Ghanaians in manufacturing ventures, accessed June 26, 2025, <https://www.modernghana.com/news/1411083/guta-urges-chinese-investors-to-partner-ghanaians.html>
- The Chartered Institute of Logistics & Transport (CILT)-Ghana - Admissions | UPSA, accessed June 26, 2025, <https://admissions.upsa.edu.gh/admissions/professional/cilt/>
- Blog Post - Ghana Garages, accessed June 26, 2025, <https://ghanagarages.com/blog>
- Ghana Power Generation Outlook for 2025 - International Trade Administration, accessed June 26, 2025, <https://www.trade.gov/market-intelligence/ghana-power-generation-outlook-2025>
- Ghana TVET Programmes and Codes | SchoolsInGh, accessed June 26, 2025, <https://schoolsingh.com/senior-high-schools/tvet-programmes-and-code>
- Kstu Signs Mou With Ghana National Association Of Garages To Improve The Automobile Industry | Kumasi Technical University, accessed June 26, 2025, <https://archive.kstu.edu.gh/media/articles/kstu-signs-mou-ghana-national-association-of-garages-to-improve-automobile-industry>
- GTVP – CTVP Programme, accessed June 26, 2025, <http://gtvp.ctvet.gov.gh/>
- Labour Market Profile Ghana – 2023 - Ulandssekretariatet, accessed June 26, 2025, <https://www.ulandssekretariatet.dk/wp-content/uploads/2023/02/Ghana-LMP-2023-final.pdf>
- Ghana Labor Force Participation Rate (1990-2024) - Macrotrends, accessed June 26, 2025, <https://www.macrotrends.net/global-metrics/countries/gha/ghana/labor-force-participation-rate>
- MINISTRY OF EMPLOYMENT AND LABOUR RELATIONS, accessed June 26, 2025, [https://mofep.gov.gh/sites/default/files/pbb-estimates/2024/2024-PBB-MELR\\_.pdf](https://mofep.gov.gh/sites/default/files/pbb-estimates/2024/2024-PBB-MELR_.pdf)
- Public Services Commission of Ghana - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Public\\_Services\\_Commission\\_of\\_Ghana](https://en.wikipedia.org/wiki/Public_Services_Commission_of_Ghana)
- Jobberman: Find the Right Job Vacancies in Ghana, accessed June 26, 2025, <https://www.jobberman.com.gh/>
- Our Standard Listing Product | Jobberman Ghana - YouTube, accessed June 26, 2025, <https://www.youtube.com/watch?v=NjrSu5BCBwY>
- Get to Know Hilda Nimoh-Tieku, CEO of Jobberman Ghana, - YouTube, accessed June 26, 2025, <https://www.youtube.com/watch?v=9ktd93OarJs>
- Ministry of Employment and Labour Relations, accessed June 26, 2025, <https://melr.gov.gh/>
- Ministry of Labour, Jobs & Employment - job seekers, accessed June 26, 2025, <https://melr.gov.gh/6/7/job-seekers>
- Construction & Skilled Trade CVs in Accra Metropolitan ▷ Search ..., accessed June



26, 2025, <https://ijji.com.gh/accra-metropolitan/construction-and-skilled-trade-cvs>

- ministry of employment and labour relations - ghana jobs and skills project, accessed June 26, 2025, <https://www.melr.gov.gh/files/publications/ Ghana Jobs & Skills Project: Redev elopment of Labour Department Head Office.pdf>
- en.wikipedia.org, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Ministry\\_of\\_Employment\\_and\\_Labour\\_Relations\\_\(G\\_hana\)](https://en.wikipedia.org/wiki/Ministry_of_Employment_and_Labour_Relations_(G_hana))
- Ministry of Employment and Labour Relations, Government of Ghana - Library of Congress, accessed June 26, 2025, <https://www.loc.gov/item/lcwaN0027600>
- en.wikipedia.org, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Ministry\\_of\\_Works\\_and\\_Housing\\_\(Ghana\)](https://en.wikipedia.org/wiki/Ministry_of_Works_and_Housing_(Ghana))
- Republic of Ghana - MINISTRY OF WORKS, HOUSING AND WATER RESOURCES, accessed June 26, 2025, <https://mwhwr.gov.gh/home/>
- MINISTRY OF WORKS, HOUSING AND WATER RESOURCES, accessed June 26, 2025, <https://mwhwr.gov.gh/>
- Mahama lists priority roads, other projects for Greater Accra - The Presidency, Republic of Ghana, accessed June 26, 2025, [https://presidency.gov.gh/wp-content/uploads/2025/05/ThePresidency\\_May-19-2025.pdf](https://presidency.gov.gh/wp-content/uploads/2025/05/ThePresidency_May-19-2025.pdf)
- Ghana: Building a Stronger Transportation System - | Independent Evaluation Group, accessed June 26, 2025, <https://ieg.worldbankgroup.org/reports/ghana-building-stronger-transportation-system>
- GREDA: Its Role in Ghana's Real Estate Industry and Housing Development, accessed June 26, 2025, <https://ghanapropertyfinder.com/gredas-role-in-ghanas-real-estate-industry/>
- About - GREDA, accessed June 26, 2025, <https://gredaghana.org/about/>
- We expect cement prices to fall by June 2025 – CEO of Chamber of Construction Industry, accessed June 26, 2025, <https://onuaonline.com/we-expect-cement-prices-to-fall-by-june-2025-ceo-of-chamber-of-construction-industry/>
- GREDA raises concerns over low foreign developer participation - CitiNewsroom.com, accessed June 26, 2025, <https://citinewsroom.com/2025/05/greda-raises-concerns-over-low-foreign-developer-participation/>
- Get to Know the Best of the Best: Top 25 Construction Companies in Ghana 2023, accessed June 26, 2025, <https://www.prophuntgh.com/pre-buying-advice/get-to-know-the-best-of-the-best-top-25-construction-companies-in-ghana-2023/>
- List Of Contractors - Ghana Highway Authority, accessed June 26, 2025, <http://www.highways.gov.gh/contractors>
- Construction Companies in Ghana | Sales leads list by Lusha, accessed June 26, 2025, <https://www.lusha.com/company-search/construction/2/ghana/155/>

- Ghana - Construction and Infrastructure Industry, accessed June 26, 2025, <https://www.trade.gov/country-commercial-guides/ghana-construction-and-infrastructure-industry>
- Ghana Chamber of Construction Industry elects new executive officers, accessed June 26, 2025, <https://gna.org.gh/2022/10/ghana-chamber-of-construction-industry-elects-new-executive-officers/>
- Building a House... A learning experience : r/ghana - Reddit, accessed June 26, 2025, [https://www.reddit.com/r/ghana/comments/1hwxwff/building\\_a\\_house\\_a\\_learning\\_experience/](https://www.reddit.com/r/ghana/comments/1hwxwff/building_a_house_a_learning_experience/)
- Plastering and Other Mason Jobs in Cantonments - Building & Trade Services, Hazzan Ilyas | Jiji.com.gh, accessed June 26, 2025, <https://jiji.com.gh/cantonments/building-and-trades-services/plastering-and-other-mason-jobs-rx3FZdIPMSpuOKp7S1lqOTFp.html>
- Building Construction Works in Accra Metropolitan - Building & Trade Services, Adomens Construction Company | Jiji.com.gh, accessed June 26, 2025, <https://jiji.com.gh/accra-metropolitan/building-and-trades-services/building-construction-works-kNw4Ci8BWRHYi9rfav9xYk4W.html>
- welder Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/welder-jobs>
- Recruitment Ghana : welder CVs | Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/cv-library-search/welder>
- Job Vacancy For Welder - Current Jobs in Ghana, accessed June 26, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-welder-2/>
- Electrical Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/electrical-jobs>
- Engineering Jobs - Jobsinghana.com - Jobs Directory, accessed June 26, 2025, <https://www.jobsinghana.com/jobs/indexnew.php?device=d&cat=27>
- electrician Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/electrician-jobs>
- equipment Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/equipment-jobs>
- Recruitment Ghana : excavator driver CVs | Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/cv-library-search/excavator%20driver>
- Excavator Operator wanted for A Construction Project - Jobs in Ghana - xycareers.com, accessed June 26, 2025, <https://xycareers.com/ghana/job/excavator-operator-wanted-for-a-construction-project/>
- Chamber of Construction Urges Gov't To Pay Eligible Road Contractors Promptly - YouTube, accessed June 26, 2025, <https://www.youtube.com/watch?v=NFghn9c-Qqs>
- Ghana Real Estate Developers Association (GREDA) - BusinessGhana, accessed June 26, 2025, <https://www.businessghana.com/site/directory/other->

[associations/8740/Ghana-Real-Estate-Developers-Association-GREDA](#)

- Find Industry and Manufacturing expertise in Ghana - Sectors - Commonwealth of Nations, accessed June 26, 2025, [https://www.commonwealthofnations.org/sectors-ghana/business/industry\\_and\\_manufacturing/](#)
- Manufacturing Companies in Ghana | Sales leads list by Lusha, accessed June 26, 2025, [https://www.lusha.com/company-search/manufacturing/aa8194a9e0/ghana/155/](#)
- Find & Research Industrial Manufacturing Companies in Greater Accra - 6Sense, accessed June 26, 2025, [https://6sense.com/company/country-ghana--state-greater-accra--industry-industrial-manufacturing](#)
- List of manufacturing companies in ghana, accessed June 26, 2025, [https://irp.cdn-website.com/4683f23f/files/uploaded/773422.pdf](#)
- Association of Ghana Industries (AGI) | Ghana Ecosystem Snapshot - EcoMap Technologies, accessed June 26, 2025, [https://ghana.ecomap.tech/organizations/association-of-ghana-industries-agi-f01c4dd517](#)
- Find & Research Industrial Manufacturing Companies in Ghana - 6Sense, accessed June 26, 2025, [https://6sense.com/company/country-ghana--industry-industrial-manufacturing](#)
- Industrial machinery manufacturing Companies in Ghana | Sales leads list by Lusha, accessed June 26, 2025, [https://www.lusha.com/company-search/industrial-machinery-manufacturing/710e594d7d/ghana/155/](#)
- Current Logistics Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 26, 2025, [https://jobwebghana.com/job-category/logistics-transportation-jobs-in-ghana/](#)
- Jobs in Ghana - Accra - Jobberman, accessed June 26, 2025, [https://www.jobberman.com.gh/jobs/shipping-logistics](#)
- Association of Ghana Industries - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Association\\_of\\_Ghana\\_Industries](#)
- Membership - Private Enterprise Federation, accessed June 26, 2025, [https://www.pef.org.gh/index.php/en/about-pef/pef-constitution/353-membership](#)
- About - AGI Accra, accessed June 26, 2025, [https://agiaccra.org/about/](#)
- Ghana Union of Traders Association - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Union\\_of\\_Traders\\_Association](#)
- Our Mission - Ghana Union of Traders Association, accessed June 26, 2025, [https://gutagh.com/our-mission/](#)
- Truck transportation Companies in Ghana | Sales leads list by Lusha, accessed June 26, 2025, [https://www.lusha.com/company-search/truck-transportation/b7152ac602/ghana/155/](#)
- Directory : Road Transport - Accra - BusinessGhana, accessed June 26, 2025, [https://businessghana.com/site/directory/road-transport](#)

- Category:Transport companies of Ghana - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Category:Transport\\_companies\\_of\\_Ghana](https://en.wikipedia.org/wiki/Category:Transport_companies_of_Ghana)
- Ghana - 4.8 Transporter Contact List | Digital Logistics Capacity Assessments, accessed June 26, 2025, <https://lca.logcluster.org/ghana-48-transporter-contact-list>
- Transport and logistics in Ghana - AGL - Africa Global Logistics, accessed June 26, 2025, <https://www.aglgroup.com/en/transport-logistics-africa/ghana/>
- OMA Logistics Ghana, accessed June 26, 2025, <https://ghana.omagroup.com/oma-logistics-ghana-ltd/>
- Ghana • Members Directory - FIATA, accessed June 26, 2025, <https://fiata.org/directory/gh/>
- Ghana Business Directory - Transportation, accessed June 26, 2025, <https://www.ghanaweb.com/org/category/18/Transportation>
- Air Freight Companies in Ghana - Accra - Freightnet.com, accessed June 26, 2025, <https://www.freightnet.com/directory/p1/cGH/s4.htm>
- Ghana's Energy, Extractives & Infrastructure Outlook 2025 - Afriwise, accessed June 26, 2025, <https://www.afriwise.com/blog/ghanas-energy-extractives-infrastructure-outlook-2025>
- CILT Ghana – The Chartered Institute of Logistics & Transport, accessed June 26, 2025, <https://ciltgh.org/>
- Logistics Jobs in Ghana | Careerjet, accessed June 26, 2025, <https://www.careerjet.com.gh/logistics-jobs>
- Job ad Ghana : Customer Relations and Logistics Coordinator - East Legon - Accra, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-ghana/customer-relations-logistics-coordinator-east-legon-accra-189021>
- Job Vacancy For Logistics Coordinator - Accra - Current Jobs in Ghana, accessed June 26, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-logistics-coordinator/>
- Driver Jobs in Accra Metropolitan - Tonaton Ghana, accessed June 26, 2025, [https://tonaton.com/r\\_accra-metropolitan/c\\_driver-jobs](https://tonaton.com/r_accra-metropolitan/c_driver-jobs)
- Logistics & Transportation Jobs in Greater Accra - Tonaton Ghana, accessed June 26, 2025, [https://tonaton.com/r\\_greater-accra/c\\_logistics-and-transportation-jobs](https://tonaton.com/r_greater-accra/c_logistics-and-transportation-jobs)
- Ghana Garages - Auto Mechanics, Auto Artisans, Auto Brands, accessed June 26, 2025, <https://ghanagarages.com/>
- About CILT Ghana, accessed June 26, 2025, <https://ciltgh.org/about-cilt-ghana/>
- CILT inducts 88 members to champion excellence in Ghana's logistics and transport sector, accessed June 26, 2025, <https://www.ghanaweb.com/GhanaHomePage/business/CILT-inducts-88-members-to-champion-excellence-in-Ghana-s-logistics-and-transport-sector-1989249>
- Governing Council & Institute Staff - CILT Ghana, accessed June 26, 2025, <https://ciltgh.org/governing-council-institute-staff/>

- CILT inducts new Governing Council - Graphic Online, accessed June 26, 2025, <https://www.graphic.com.gh/news/general-news/ghana-news-cilt-inducts-new-governing-council.html>
- CONSTITUTION OF THE GHANA NATIONAL ASSOCIATION OF GARAGES (GNAG), accessed June 26, 2025, [https://www.ghananationalassociationofgarages.com/documents/GNAT\\_CONSTITUTION\[1\].pdf](https://www.ghananationalassociationofgarages.com/documents/GNAT_CONSTITUTION[1].pdf)
- Kstu Signs Mou With Ghana National Association Of Garages To Improve The Automobile Industry, accessed June 26, 2025, <https://198-58-107-40.ip.linodeusercontent.com/media/articles/kstu-signs-mou-ghana-national-association-garages-improve-automobile-industry>
- Garage programme in Ghana sets good practice - UNAIDS, accessed June 26, 2025, [https://data.unaids.org/pub/externaldocument/2009/20090402\\_ilo\\_ghana\\_en.pdf](https://data.unaids.org/pub/externaldocument/2009/20090402_ilo_ghana_en.pdf)
- Electrical Engineer Jobs - Accra - BusinessGhana, accessed June 26, 2025, <https://www.businessghana.com/site/jobs/electrical-engineer-jobs>
- Job ad Ghana : Electrical Technician - Greater Accra, Western, Upper East - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-ghana/electrical-technician-greater-accra-westernupper-east-192208>
- Ghana Technical and Vocational Education and Training Service ..., accessed June 26, 2025, <https://gtvets.gov.gh/>
- TVET Education in Ghana: A Complete Guide - Asetena Pa, accessed June 26, 2025, <https://asetenapa.com/ghana-tvet-education/>
- NVTI Website, accessed June 26, 2025, <https://www.nvtighana.org/>
- NVTI Website, accessed June 26, 2025, <https://www.nvtighana.org/trainingprogrammes.aspx>
- NVTI - Cert. I, Cert. II & NCC [1 or 2 Years] - kitaghana, accessed June 26, 2025, <https://kitaghana.dudaone.com/newpage3>
- Vocational Centres Registered by NVTI | PDF | Accra | Textiles - Scribd, accessed June 26, 2025, <https://www.scribd.com/doc/103826030/Vocational-Centres-Registered-by-NVTI>
- Accredited Programmes | Ghana TVET Service, accessed June 26, 2025, <https://gtvets.gov.gh/accredited-programme/>
- Accra Technical Training Centre, accessed June 26, 2025, <https://attcghana.com/>
- Accra Technical Training Center - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Accra\\_Technical\\_Training\\_Center](https://en.wikipedia.org/wiki/Accra_Technical_Training_Center)
- KOHENE TECHNOLOGY INSTITUTE | Technical and Vocational training ghana, accessed June 26, 2025, <https://www.kohene.com/>
- Vocational & Technical School in Accra, Ghana » IPES - Institute of Professional and Entrepreneurial Studies: Vocational & Technical School in Accra, Ghana, accessed June 26, 2025, <https://ipeStudies.com/>

# **Ghana's Lavender Economy: A National Employment and Workforce Development Analysis**

## **Part I: The Strategic Context of Ghana's Lavender Economy**

The landscape of employment within Ghana's care and helping sectors—collectively termed the Lavender Economy—is not a product of organic market forces alone. It is a meticulously architected environment, shaped by a triad of national policy, institutional frameworks, and statutory regulation. These elements collectively define the scope of services, dictate the flow of funds, and ultimately determine the demand for, and supply of, skilled labor. Understanding this foundational structure is paramount for any strategic intervention, be it policy formulation, educational planning, or capital investment. The opportunities available to a nurse, a counselor, or a health administrator are directly linked to decisions made within the halls of the Ministry of Health, the operational mandates of the Ghana Health Service, and the regulatory chambers of the nation's professional councils.

### **The Policy Foundation: Architecting Demand and Defining Priorities**

National policies serve as the primary catalysts for employment within the Lavender Economy, creating funded demand for specific services and, by extension, the professionals who deliver them. Three policy pillars are particularly influential: the National Health Insurance Scheme (NHIS), the progressive mental health framework, and the strategic push towards digitalization.

### **The National Health Insurance Scheme (NHIS)**



Established in 2003 by Act 650 and later consolidated under Act 852 in 2012, the National Health Insurance Scheme is the central public financing mechanism for healthcare in Ghana.<sup>1</sup> Its objective is to provide equitable access and financial coverage for a defined package of basic health services to all residents.<sup>1</sup> The scheme is governed by the National Health Insurance Authority (NHIA) and is funded through a diversified model, primarily a 2.5% National Health Insurance Levy (NHIL) on goods and services, a 2.5% deduction from formal sector workers' Social Security and National Insurance Trust (SSNIT) contributions, investment returns, and premiums from informal sector subscribers.<sup>3</sup>

The NHIS benefit package is extensive, covering a significant portion—estimated at 95%—of the disease burden in Ghana.<sup>5</sup> This includes outpatient and inpatient services, comprehensive maternity care (antenatal, delivery, and postnatal), oral health, and eye care.<sup>4</sup> These services are provided through a vast network of credentialed facilities spanning the public, private, and faith-based sectors, including tertiary and secondary hospitals, polyclinics, health centers, and Community-based Health Planning and Services (CHPS) compounds.<sup>3</sup>

The direct consequence of this structure is that the NHIS is a powerful engine of formal employment in the healthcare sector. The NHIA, by credentialing facilities and defining the reimbursable benefit package, effectively directs the flow of capital and dictates where jobs are created and which roles are most in demand.<sup>2</sup> The expansion of the scheme and its subscriber base directly correlates to an increased demand for clinical staff (doctors, nurses, midwives) to provide the covered services. Concurrently, it fuels a parallel demand for a robust administrative workforce, including claims processors, data entry clerks, M&E officers, and managers, both within the NHIA's 16 regional and 166 district offices and at the facility level, to manage the complex processes of registration, claims submission, and reimbursement.<sup>1</sup>

## **The Mental Health Policy Framework**

Ghana's approach to mental health underwent a paradigm shift with the passage of the Mental Health Act, 2012 (Act 846) and the subsequent National Mental Health

Policy 2019–2030.<sup>7</sup> This framework explicitly moves away from a centralized, institutional model of care historically concentrated in three large psychiatric hospitals towards a decentralized, community-based system.<sup>8</sup> The policy's vision is to integrate mental health services into the general healthcare system, particularly at the primary care level, while protecting the human rights of persons with mental disorders and reducing stigma.<sup>10</sup>

This strategic reorientation has profound implications for the workforce. It creates a specific and growing demand for a new cadre of mental health professionals who can operate effectively in community settings. The focus is no longer solely on psychiatrists but expands to include clinical psychologists, counselors, occupational therapists, and psychiatric nurses who can be deployed to regional and district hospitals.<sup>11</sup> A cornerstone of the policy is the establishment of governance structures like the Mental Health Authority (MHA) to oversee implementation and the training of non-specialist health workers—such as general nurses, physician assistants, and community health officers—in case detection, support, and referral.<sup>8</sup> This task-shifting approach is essential for bridging the significant treatment gap, which stood at 98% before recent interventions.<sup>12</sup> The policy, therefore, is not just a statement of intent; it is a blueprint for creating new job roles and embedding new competencies within the existing health workforce.

## **National eHealth Strategy and Digitalization**

The Government of Ghana has formally committed to the digitalization of the health sector, a journey that began with the National eHealth Strategy in 2010.<sup>13</sup> This strategy has materialized through the rollout of Electronic Health Record (EHR) systems in major government hospitals, with the Lightwave Health Information Management System (LHIMS) being a prominent example commissioned in 2018.<sup>14</sup> LHIMS is a web-based platform designed to manage patient records, appointments, laboratory and radiology results, and, critically, to streamline the submission of claims to the NHIA.<sup>14</sup> Other platforms like the Surveillance Outbreak Response Management and Analysis System (SORMAS) and the e-Health Single Window platform aim to connect all players in the sector, from hospitals to pharmacies and labs.<sup>15</sup>

This digitalization drive creates a dual employment track. First, it establishes a new



baseline competency for the entire frontline workforce. Every doctor, nurse, and lab technician in a facility using LHIMS or a similar system must possess digital literacy, including proficiency with EHRs and an understanding of data privacy and security.<sup>14</sup> Second, it generates demand for a specialized health informatics workforce. This includes roles such as Health Information Technology (IT) Support, Systems Administrators, Health Data Analysts, and software developers, both within the public sector's administrative structures and in the private technology companies, like Lightwave E-Healthcare Solution Limited, that develop and maintain these systems.<sup>14</sup>

### **The Institutional Architecture: The Ministry of Health and Ghana Health Service**

The public sector's institutional framework is bifurcated, with the Ministry of Health (MoH) serving as the strategic head and the Ghana Health Service (GHS) as the primary operational body. This division creates distinct spheres of employment and governance.

38. **Ministry of Health (MoH):** The MoH is the apex government ministry responsible for the entire health sector. Its mandate encompasses policy formulation, strategic planning, resource mobilization, and oversight of all public health agencies.<sup>16</sup> The Ministry engages directly with international development partners like the World Bank, USAID, and WHO, manages large-scale capital projects such as the construction of new hospitals under Agenda 111, and holds ultimate authority over the GHS, the Teaching Hospitals, and the professional regulatory bodies.<sup>16</sup> Employment opportunities at the MoH level are typically concentrated in policy analysis, national program management, health financing, and high-level administration.
39. **Ghana Health Service (GHS):** Established by Act 525 of 1996, the GHS is an autonomous executive agency tasked with the *implementation* of national health policies.<sup>18</sup> Its operational domain covers the regional, district, and sub-district levels, making it responsible for the vast network of regional and district hospitals, polyclinics, health centers, and CHPS compounds.<sup>21</sup> Crucially, its mandate does not extend to the major Teaching Hospitals, which operate as separate autonomous bodies.<sup>18</sup> The GHS is the engine of public health delivery, responsible for functions like disease surveillance, health promotion, and the management of primary healthcare services.<sup>18</sup>

This structural separation creates two parallel career tracks within the public sector. The MoH is the locus of power for strategic and policy-related roles, while the GHS is, by a significant margin, the largest single employer of frontline clinical and community health personnel in the country. A job seeker aspiring to influence national health strategy would target the MoH, whereas one seeking a clinical or public health role in a district hospital or a rural community would navigate the recruitment processes of the GHS and its decentralized regional and district directorates.

## **The Regulatory Landscape: The Professional Councils as Workforce Gatekeepers**

The supply of qualified labor for the Lavender Economy is rigorously controlled by a set of statutory professional councils established under the Health Professions Regulatory Bodies Act, 2013 (Act 857). These councils function as the ultimate gatekeepers to formal practice, ensuring standards and protecting the public interest.

40. **Mandate and Key Councils:** The most prominent bodies are the **Medical and Dental Council (MDC)** for physicians and dentists <sup>22</sup>, the **Nursing and Midwifery Council (NMC)** for all cadres of nurses and midwives <sup>24</sup>, the **Ghana Psychology Council (GPC)** for psychologists and counselors <sup>26</sup>, and the **Allied Health Professions Council** for a range of other professionals like physiotherapists and laboratory scientists.<sup>18</sup>

41. **Core Functions:** Their power stems from four key functions:

1. **Accreditation of Training:** They accredit the courses and programs at universities and health training institutions, ensuring curricula meet national standards.<sup>23</sup> This gives them direct influence over the content of professional education.
2. **Registration and Licensing:** They conduct mandatory licensure examinations and maintain the official register of all qualified practitioners. A valid license or PIN from the relevant council is a non-negotiable prerequisite for formal employment in both the public and private sectors.<sup>24</sup> The NMC, for example, manages the entire lifecycle from student indexing to license renewal <sup>24</sup>, while the MDC has specific examination pathways for foreign-trained doctors.<sup>22</sup>

3. **Continuing Professional Development (CPD):** The councils mandate ongoing training for license renewal to ensure practitioners remain current. The MDC and NMC have embraced technology, partnering with platforms like the World Continuing Education Alliance (WCEA) to provide online CPDs, which is particularly crucial for maintaining the licensure of Ghanaian professionals in the diaspora.<sup>24</sup>
4. **Enforcement of Standards:** They establish and enforce professional codes of conduct and ethics, with disciplinary powers to sanction practitioners who fall short of the required standards.<sup>23</sup>

This regulatory framework has created a direct causal chain that links government policy to employment outcomes. A policy decision, such as the push for community mental health, creates demand. However, the professional councils act as a critical control valve on the supply side. If their accreditation and licensing processes are not agile enough to recognize and certify new roles or competencies—for example, developing a new certification pathway for tele-counseling or health informatics—they can inadvertently become a bottleneck. This can create a significant skills gap between policy ambition and workforce reality, a crucial point of potential friction that requires constant strategic alignment between the MoH, its agencies, and the regulatory bodies.

A particularly forward-looking strategy is the MDC's formal mechanism for diaspora practitioners to maintain their Ghanaian license through online CPDs.<sup>29</sup> This is more than a mere administrative convenience; it is a strategic policy to mitigate brain drain. It transforms a potential loss of talent into a "reserve army" of highly skilled, licensed professionals who remain connected to the Ghanaian system. This pool of expertise can be tapped for tele-specialist consultations, remote training, or as prime candidates for recruitment into senior roles, effectively turning a challenge into a strategic asset.

| Table 1: Key Policy Frameworks and Employment Implications in Ghana's Lavender Economy |  |
|--|--|
| Policy/Act   |  |
| National Health Insurance Act (Act 852)  |  |
| Mental Health Act (Act 846) & Policy (2019-2030)                                       |  |

## Part II: The Institutional and Service Delivery Landscape

The institutional landscape of Ghana's Lavender Economy is a complex, interwoven ecosystem of public, private, and third-sector organizations. Each of these pillars offers distinct employment opportunities, characterized by different service models, geographic concentrations, work environments, and career trajectories. A comprehensive understanding of this terrain is essential for effective workforce planning and for individuals navigating their career paths.

### Public Sector Service Delivery: The Backbone of National Healthcare

The public sector remains the largest employer and the bedrock of healthcare delivery for the majority of Ghanaians. It is, however, a stratified system with clear distinctions between its constituent parts.

#### Teaching Hospitals

Positioned at the apex of the healthcare pyramid, Ghana's Teaching Hospitals are the national centers for tertiary and quaternary care, medical education, and research. The most prominent are the **Korle-Bu Teaching Hospital (KBTH)** in Accra and the **Komfo Anokye Teaching Hospital (KATH)** in Kumasi, complemented by newer teaching hospitals in Tamale, Cape Coast, and Ho.<sup>31</sup> Governed as autonomous bodies under the Ministry of Health, they operate independently of the Ghana Health Service.<sup>18</sup>

Employment in these institutions is highly sought after and competitive. They are the

primary employers of a wide array of medical specialists and sub-specialists, from cardiologists and oncologists to reconstructive surgeons.<sup>33</sup> They also employ a large number of specialized nurses (e.g., critical care, oncology), senior allied health professionals, medical researchers, and academic faculty. Career paths are typically well-structured, offering clear opportunities for specialization, further training, and engagement in research, making them hubs of professional excellence and innovation.<sup>33</sup>

## **Regional and District Hospitals**

Managed by the Ghana Health Service, regional and district hospitals form the backbone of secondary-level care across the country's 16 regions.<sup>18</sup> Facilities like the

**Greater Accra Regional Hospital (GARH)** serve as the first point of referral from the primary healthcare level.<sup>35</sup> They provide a broad range of services, including general medicine, surgery, pediatrics, and obstetrics, with some offering more specialized care depending on the region's needs and resources. Employment in this tier is geographically dispersed, offering opportunities for generalist physicians, nurses, midwives, and allied health professionals to work closer to diverse communities, forming the core of the GHS workforce.

## **Community-based Health Planning and Services (CHPS)**

The CHPS program is Ghana's flagship national strategy for achieving Universal Health Coverage (UHC) by delivering primary healthcare directly to communities, particularly in rural and underserved areas.<sup>36</sup> The model, which was tested by the Navrongo Health Research Centre and adopted as national policy, aims to shift the focus from facility-based care to proactive, close-to-client services.<sup>36</sup> With over 6,500 CHPS compounds nationwide, the program is a massive source of employment.<sup>36</sup>

These compounds are primarily staffed by **Community Health Officers (CHOs)** or **Community Health Nurses**, who provide a wide range of services including health

education, management of minor ailments, maternal and child health services, immunizations, and referrals.<sup>36</sup> They are supported by a network of

**Community Health Volunteers (CHVs)**, who are selected by the community and play a crucial role in mobilization and health promotion.<sup>37</sup> The CHPS program represents the most significant pathway for entry-level, rural, and community-focused employment within the public health system, making it the lynchpin of Ghana's primary care strategy.

## **The Private Sector Ecosystem: An Expanding Urban Frontier**

The private sector is a dynamic and rapidly growing component of the Lavender Economy, characterized by its concentration in urban centers and its focus on specialized services and a growing wellness market.

### **Private Hospitals and Clinics**

A burgeoning number of private hospitals and clinics cater primarily to the urban middle and upper classes, as well as clients with private health insurance or those seeking services not readily available in the public sector. Leading examples include **The Bank Hospital** <sup>38</sup>,

**Euracare Ghana** <sup>40</sup>, and

**Banahene Specialist Hospital** <sup>41</sup> in Accra, and many others in Kumasi and other regional capitals.<sup>42</sup> These facilities often boast modern infrastructure, advanced medical technology, and a patient-centric service ethos.<sup>38</sup> They actively compete for top-tier talent, advertising vacancies for a wide spectrum of roles, from highly specialized surgeons and physicians to experienced nurses, dietitians, laboratory scientists, and hospital administrators.<sup>39</sup> Employment in this sub-sector is characterized by a demand for both clinical excellence and strong customer service competencies.

## Wellness and Fitness Centers

Reflecting global trends and rising disposable incomes in urban Ghana, a nascent but expanding wellness market has emerged. This sub-sector creates a new category of employment opportunities for professionals who blend health, fitness, and lifestyle coaching. Roles include **Fitness Instructors**, **Nutrition Coaches**, and **Wellness Consultants**. The demand for qualified professionals has led to the establishment of training and certification bodies like the **Institute of Fitness Ghana**, which is an approved partner of the U.S.-based National Academy of Sports Medicine (NASM).<sup>45</sup> Other organizations, such as the

**Holistic Counselling Consult**, offer wellness programs, retreats, and training in areas like mindfulness and personal development, further diversifying the employment landscape.<sup>47</sup> This segment is largely cash-based and driven by a clientele seeking preventive health and lifestyle improvement services.

## The Third Sector: Faith-Based and Non-Governmental Organizations

The third sector, comprising Faith-Based Organizations (FBOs) and Non-Governmental Organizations (NGOs), plays an indispensable role in Ghana's health landscape, often reaching the most vulnerable and remote populations.

### Christian Health Association of Ghana (CHAG)

CHAG is a colossal entity in Ghana's healthcare system. It is a network of 326 health facilities and 20 health training institutions owned by 34 different Christian denominations.<sup>12</sup> Astonishingly, CHAG is responsible for delivering between 30% and 40% of all healthcare services in the country and is particularly dominant in rural and remote areas where government services may be sparse.<sup>12</sup> Recognized by the government as a major implementing partner of the MoH, CHAG's facilities are deeply integrated into the National Health Insurance Scheme.<sup>12</sup> Consequently, CHAG offers stable, long-term employment opportunities that are analogous to the public sector.

It employs a full complement of healthcare professionals and is a major force in the training of nurses and midwives, making it a critical employer in the Lavender Economy.

## International and Local NGOs

Ghana's health sector is supported by a diverse array of international and local NGOs, often funded by major development partners such as **USAID, The Global Fund, UNICEF**, and the **World Bank**.<sup>19</sup> Organizations like

**World Vision Ghana, Catholic Relief Services (CRS), and Ghana Medical Help** implement specific, time-bound projects that target key health priorities, such as maternal and child health, neglected tropical diseases (NTDs), HIV/AIDS, or health systems strengthening.<sup>49</sup>

Employment in the NGO sector is predominantly project-based and contractual. These organizations recruit for roles such as **Program Manager, Monitoring and Evaluation (M&E) Officer, Technical Advisor**, and various field-based clinical and community outreach positions.<sup>52</sup> A unique feature of NGO employment is the demand for hybrid skill sets. A project officer, for example, must often combine their core clinical or public health expertise with strong competencies in project management, financial oversight, donor reporting, and stakeholder coordination. This makes the NGO sector a valuable incubator for developing the future leaders and managers of the health system, providing a clear pathway from frontline practice to strategic health administration.

The intricate web of public, private, and third-sector employers reveals a symbiotic yet competitive relationship. The deep integration of CHAG and private hospitals into the NHIS fosters collaboration. However, the growth of high-end private facilities in Accra and Kumasi creates intense competition for skilled labor. These institutions can often offer superior compensation and working environments, posing a risk of internal brain drain from the public sector, which could exacerbate the existing urban-rural divide in specialized expertise. A senior specialist at a public teaching hospital may be lured to a private facility, concentrating advanced skills in urban centers at the expense of the broader population. This dynamic presents a significant challenge for achieving equitable access to care and requires strategic workforce management by



the MoH and GHS.

| Table 2: Comparative Analysis of Employer Types in Ghana's Lavender Economy |
|---|
| Employer Type   |
| Public - Teaching Hospital  |
| Public - GHS Facility   |
| Public - CHPS Compound  |
| Private Hospital/Clinic   |
| CHAG Facility   |
| NGO / Development Partner   |

## Part III: Occupational Mapping and Workforce Analysis

A granular analysis of individual occupations is essential to move beyond broad sectoral trends and understand the specific requirements, pathways, and market dynamics that define the Lavender Economy workforce. This section provides detailed profiles for a range of key professions, structured by sub-sector and benchmarked against twelve core attributes, from qualifications and competencies to employers and compensation. This mapping serves as a foundational tool for strategic workforce planning, curriculum development, and individual career guidance.

### Clinical and Allied Healthcare Services

This sub-sector forms the core of the healthcare system, encompassing the professionals who provide direct diagnostic, therapeutic, and curative care. The demand for these roles is sustained and driven by the entire institutional landscape.

|  |
|--|
| Table 3: Occupational Profiles in Clinical and Allied Healthcare |
| <b>Attribute</b>   |
| <b>Position ID &amp; Context</b>                                 |
| <b>Geographic Distribution</b>                                   |
| <b>Technical Competencies</b>                                    |
| <b>Digital Capabilities</b>                                      |
| <b>Interpersonal Competencies</b>                                |
| <b>Educational Pathways</b>                                      |
| <b>Professional Certification</b>                                |
| <b>Specialized Training</b>                                      |
| <b>Career Progression</b>  |
| <b>Typical Employers</b>   |
| <b>Recruitment Channels</b>                                      |
| <b>Compensation (Monthly)</b>                                    |

### Mental Health and Social Care

This sub-sector is undergoing a significant transformation, driven by the Mental Health Act's push for deinstitutionalization and community-based care. This is creating new roles and demanding new skill sets beyond traditional psychiatry.

|   |
|---|
| Table 4: Occupational Profiles in Mental Health and Social Care |
| <b>Attribute</b>  |
| <b>Position ID &amp; Context</b>                                |

|                                   |
|-----------------------------------|
| <b>Geographic Distribution</b>    |
| <b>Technical Competencies</b>     |
| <b>Digital Capabilities</b>       |
| <b>Interpersonal Competencies</b> |
| <b>Educational Pathways</b>       |
| <b>Professional Certification</b> |
| <b>Specialized Training</b>       |
| <b>Career Progression</b>         |
| <b>Typical Employers</b>          |
| <b>Recruitment Channels</b>       |
| <b>Compensation (Monthly)</b>     |

## Public Health, Health Administration, and Support Services

This sub-sector comprises the professionals who manage the health system, design and implement public health programs, and provide the essential administrative and logistical support that enables care delivery.

|  |
|--|
| Table 5: Occupational Profiles in Public Health, Administration, and Support |
| <b>Attribute</b>   |
| <b>Position ID &amp; Context</b>   |
| <b>Geographic Distribution</b>   |
| <b>Technical Competencies</b>  |
| <b>Digital Capabilities</b>  |

|                                   |
|-----------------------------------|
| <b>Interpersonal Competencies</b> |
| <b>Educational Pathways</b>       |
| <b>Professional Certification</b> |
| <b>Specialized Training</b>       |
| <b>Career Progression</b>         |
| <b>Typical Employers</b>          |
| <b>Recruitment Channels</b>       |
| <b>Compensation (Monthly)</b>     |

A critical pattern emerging from this occupational analysis is the existence of a "licensing premium." Across all formal roles, the possession of a valid license from a professional council like the NMC or MDC is the single most significant determinant of employment eligibility and compensation level.<sup>22</sup> The data, though sometimes inconsistent across different survey platforms, consistently shows a clear hierarchy where licensed, degree-holding professionals earn substantially more than their diploma or certificate-holding counterparts, who in turn earn more than unlicensed assistants.<sup>53</sup> This underscores the councils' immense power not just in quality assurance but in the economic stratification of the workforce. Any policy aimed at upskilling must, therefore, prioritize the creation of clear, accessible pathways to licensure.

Furthermore, a notable mismatch is apparent between traditional clinical training curricula and the evolving demands of the job market. Job advertisements, particularly from the private and digital health sectors, increasingly demand competencies beyond core clinical skills. These include customer service, digital marketing, business development, and data analysis.<sup>39</sup> This suggests a skills gap where graduates, while clinically competent, may lack the auxiliary digital and business skills required by the most dynamic segments of the Lavender Economy. Training institutions face a clear imperative to modernize curricula by integrating modules on health management, information technology, and patient relations.

Perhaps one of the most forward-thinking developments is the Ghana Psychology Council's formal recognition and licensing of a "para-professional" class, including Bachelor's degree holders and "Lay Practitioners".<sup>26</sup> This pragmatic approach creates

a structured, tiered system of mental health support. It formally acknowledges that not all care requires a Master's-level clinician, enabling effective task-shifting and building a larger, more affordable workforce to meet the nation's immense mental health needs. This tiered licensing model serves as an exemplary framework that could be adapted and replicated in other areas of the care economy, such as home-based elder care or community disability support, to formalize roles and expand service capacity.

## **Part IV: Emerging Frontiers: Digitalization, Wellness, and Informal Care**

Beyond the established institutional pillars of public and private healthcare lies a dynamic and rapidly evolving frontier. This landscape is defined by the disruptive force of technology, the rise of a new consumer-driven wellness market, and the vast, often undocumented, world of informal and gig-based care. These emerging segments are creating new types of employment, demanding novel skill sets, and posing unique challenges to traditional models of regulation and workforce development.

### **The Digital Health Revolution**

Ghana is experiencing a significant surge in digital health innovation, transforming how care is delivered, accessed, and managed. This revolution is unfolding on two parallel tracks: large-scale eHealth systems and a vibrant ecosystem of agile health-tech startups.

#### **Telemedicine and eHealth Platforms**

The concept of telemedicine is not new to Ghana. A notable early initiative was the

**Ghana Telemedicine Program**, supported by the Novartis Foundation, which began in 2011. This provider-to-provider model successfully used mobile technology to connect Community Health Workers (CHWs) in remote areas to 24-hour teleconsultation centers staffed by doctors, nurses, and midwives.<sup>66</sup> This system empowered frontline workers, improved the quality of care in isolated communities, and was selected for national scale-up by the Ghana Health Service.<sup>66</sup>

Building on this foundation, a new wave of direct-to-consumer platforms is emerging. **MantraCare**, for instance, offers virtual primary care consultations and mental wellbeing services directly to employees and individuals across Ghana, promising to connect patients with licensed professionals in minutes.<sup>68</sup> Similarly, international provider

**Apollo Hospitals** has partnered with a local hospital group to launch its telemedicine services in the country, bringing global expertise to local patients via technology.<sup>69</sup>

These service delivery platforms are underpinned by a broader governmental push for eHealth infrastructure. The **Lightwave Health Information Management System (LHIMS)** is being rolled out in public hospitals to create a unified Electronic Health Record (EHR) system, improving data continuity and administrative efficiency.<sup>14</sup> Other platforms like

**SORMAS** focus on disease surveillance, showcasing the diverse applications of digital tools in the public health domain.<sup>15</sup>

## The Health-Tech Startup Ecosystem

Ghana is home to a flourishing health-tech startup scene, with innovative companies attracting investment and scaling their operations to tackle specific healthcare challenges. Key players in this space include:

42. **mPharma:** A leading health-tech company that functions as a pharmacy benefits manager. It uses its platform to manage prescription drug inventory, financing, and last-mile delivery, making high-quality medicines more accessible and affordable for patients.<sup>70</sup>
43. **Bisa Health:** A mobile application that directly connects users to medical practitioners for confidential remote consultations, helping users bypass long

hospital queues and the stigma associated with certain health conditions.<sup>70</sup>

44. **Redbird:** This startup partners with community pharmacies, equipping them with the technology and supplies to offer convenient rapid diagnostic testing for chronic conditions like hypertension and diabetes, effectively turning pharmacies into health monitoring hubs.<sup>70</sup>
45. **Other Innovators:** A host of other startups like **Hewale** (hospital management systems), **MedRx App**, and **Drugnet** (online pharmacies) are contributing to the digital transformation of the sector.<sup>70</sup>

This digital revolution is fundamentally reshaping the labor market, creating a spectrum of new roles that did not exist a decade ago. These include **Health Information Technology (IT) Support Specialists**, **Tele-consultants** (doctors, psychologists, and counselors who work partly or wholly online), **Digital Health Marketers**, **Health Data Analysts**, and various operational and management roles within startups that require a unique blend of technological fluency and healthcare domain knowledge.

## The Rise of the Wellness Market

Concentrated in urban centers and fueled by a growing middle class with disposable income and a greater focus on preventive health, the wellness market represents a new, consumer-driven segment of the Lavender Economy.

This market provides services that go beyond traditional curative care, encompassing **fitness instruction**, **nutrition coaching**, **wellness consulting**, and **holistic therapies** such as yoga, meditation, and stress management retreats.<sup>47</sup> Employment opportunities in this space are often freelance or entrepreneurial in nature.

The demand for credible, qualified professionals has spurred the growth of certification and training bodies. The **Institute of Fitness Ghana**, for example, offers internationally recognized certifications from NASM for personal trainers and nutrition coaches.<sup>45</sup> Holistic centers like the

**A Life Of Peace Wellness Education Institute** offer specialized training in naturopathic therapies, creating a niche for wellness practitioners.<sup>73</sup> These roles require not only technical expertise in exercise science or nutrition but also strong

interpersonal skills, coaching abilities, and often, business and marketing acumen to attract and retain a private clientele.

## **The Informal and Gig-Based Care Economy**

Beneath the formal structures of hospitals and clinics lies a vast and vital informal care economy. This "shadow workforce" provides essential services, particularly in home-based settings, and is increasingly being accessed and organized through digital channels.

### **Home-Based and Informal Care**

There is a substantial, though largely undocumented, demand for **home-based personal care workers, domestic health aides, and caregivers** for the elderly and individuals with disabilities.<sup>74</sup> This work is often arranged through informal community networks or small, unregistered agencies. The roles involve providing assistance with daily living, companionship, and basic health monitoring.

Significantly, there are clear signs of this informal sector interfacing with the formal economy. International recruitment agencies are using Ghanaian job portals like Ghanajob.com to find caregivers for positions in the UK and USA, offering visa sponsorship as part of the package.<sup>76</sup> This indicates a strong international demand for Ghanaian caregivers and presents a major opportunity for formalization. By establishing accredited training and certification programs for "Home Health Aides," Ghana could enhance the quality of care provided locally, improve working conditions and protections for caregivers, and create a recognized professional cadre for both domestic and international markets.

### **Digitally-Enabled Gig Work**



The gig economy is also extending into the "helping" professions. The rise of online tutoring platforms like **VirTutor Online** (a Ghanaian platform) and **Spires** creates flexible, remote, gig-work opportunities.<sup>78</sup> These platforms allow individuals with academic qualifications to offer paid tutoring to students, including those in health training institutions who may need support with their coursework.<sup>80</sup> This represents a new, digitally-enabled facet of the educational support system within the broader Lavender Economy.

The convergence of these trends reveals that technology is both fragmenting and re-bundling care work. The traditional model of care confined within a hospital's walls is being disrupted. A licensed doctor can now supplement their public sector salary by working as a part-time tele-consultant on a platform like Bisa Health.<sup>70</sup> A community pharmacy is no longer just a dispensary but a primary diagnostic point through a service like Redbird.<sup>70</sup> This creates more flexible, freelance, and entrepreneurial opportunities. However, it also presents a formidable challenge for regulation. The existing frameworks of the professional councils were designed for a world of face-to-face consultations and brick-and-mortar facilities. The rapid rise of digital platforms is outpacing the ability of these bodies to develop clear guidelines on data privacy, standards of virtual care, and professional indemnity for gig-based work, creating a regulatory "gray zone" that requires urgent and thoughtful attention from policymakers.

| Table 6: Ghana's Digital Health Ecosystem: Key Players and Emerging Roles |  |
|---|--|
| Platform/Company  |  |
| mPharma <sup>70</sup>   |  |
| Bisa Health <sup>70</sup>   |  |
| Redbird <sup>70</sup>   |  |
| Lightwave HMS (LHIMS) <sup>14</sup>                                       |  |
| MantraCare <sup>68</sup>  |  |
| Apollo Hospitals (Ghana) <sup>69</sup>                                    |  |

## Part V: Strategic Workforce Development and Investment Roadmap

The comprehensive mapping of Ghana's Lavender Economy reveals a sector of immense strategic importance, characterized by dynamic growth, structural complexity, and significant potential. However, to fully harness this potential and ensure the development of a resilient, skilled, and equitably distributed workforce, a concerted and strategic approach is required. This concluding analysis synthesizes the report's findings to provide actionable recommendations for key stakeholders, outlining a roadmap for policy, training, and investment.

### Synthesis of Findings: Gaps, Mismatches, and Future Competencies

The current state of the workforce is defined by several critical challenges and opportunities that must be addressed.

46. **Skills Gaps:** There is a pronounced shortage of specialized professionals, particularly outside the major urban hubs of Accra and Kumasi. This includes a deficit of psychiatrists, sub-specialist surgeons, occupational therapists, and experienced health administrators. Furthermore, the analysis reveals a critical lack of "hybrid professionals"—individuals who possess the dual competencies of clinical expertise and modern management skills, such as health informatics, financial management, and project leadership.
47. **Skills Mismatches:** A significant mismatch exists between the output of traditional clinical training programs and the evolving demands of the labor market. While graduates may be clinically proficient, curricula have not kept pace with the need for digital literacy, including proficiency in EHRs and telehealth platforms. Moreover, the burgeoning private and digital health sectors place a high premium on interpersonal skills, customer service excellence, and business acumen—competencies not traditionally emphasized in clinical education.
48. **Future Competencies:** The future-proof care professional in Ghana will require a "T-shaped" skill set. This model consists of deep, specialized expertise in their core clinical or care discipline (the vertical bar of the T) combined with a broad set of cross-cutting competencies (the horizontal bar). These essential horizontal

skills include proficiency with digital health tools, effective and empathetic communication, deep cultural sensitivity, and a foundational understanding of health administration and management principles.

## **Regional Disparities and Opportunities for Equitable Growth**

A stark geographic divergence characterizes the Lavender Economy. The Accra-Kumasi axis forms a vibrant, competitive hub dominated by teaching hospitals, high-end private facilities, and tech startups. This market offers specialized roles and higher compensation but concentrates expertise in a small geographic area. In contrast, the landscape in Ghana's rural and northern regions is dominated by the public sector (GHS) and FBOs (CHAG), with a focus on primary and community-based care.

Addressing this regional inequity is not merely a matter of social justice; it is a prerequisite for achieving national health goals like Universal Health Coverage. The most potent instrument for promoting equitable growth is the **Community-based Health Planning and Services (CHPS) program**. Strengthening the CHPS workforce is the single most effective lever for improving health outcomes and creating meaningful employment in underserved regions. This requires moving beyond pilot projects to systemic, national investment in the CHPS cadre. Key interventions must include ensuring reliable logistical support (transport, equipment, medical supplies) for all CHPS compounds, establishing a formal and motivating career ladder that allows a Community Health Volunteer to progress to a Community Health Officer and beyond, and systematically integrating telemedicine and digital support tools to connect these frontline workers with higher levels of expertise.

## **Recommendations for Policy, Training, and Investment**

To build a robust workforce for the future, stakeholders across government, education, and the private sector must take coordinated action.

## For Government and Regulators (MoH, GHS, Professional Councils)

49. **Foster Agile Regulation:** The professional councils must evolve from gatekeepers to enablers of workforce development. This requires streamlining regulatory pathways to formally recognize, accredit, and license new and mid-level cadres of workers essential for task-shifting, such as Certified Home Health Aides and specialized Mental Health Assistants. Furthermore, the councils must urgently develop and disseminate clear standards and guidelines for telehealth practice to ensure quality, safety, and ethical conduct in the burgeoning digital health space.
50. **Execute Strategic CHPS Investment:** The government should ring-fence funding within the national budget specifically for CHPS operational and logistical needs. This includes creating a clear, motivating career structure for the rural health workforce to combat attrition to urban centers. Policy should mandate the integration of telemedicine support into every CHPS compound as a standard component of primary care infrastructure.
51. **Modernize Public Sector Recruitment:** The official government recruitment channels, including the Ghana Labour Market Information System (GLMIS) <sup>81</sup> and the GHS admissions portal <sup>83</sup>, must be modernized to be more transparent, user-friendly, and informative. These platforms should clearly delineate the parallel career tracks within the GHS and the autonomous Teaching Hospitals, providing prospective employees with the information needed to make strategic career decisions.

## For Educational and Training Institutions

52. **Mandate Curriculum Modernization:** All core nursing, medical, and allied health degree and diploma programs must integrate mandatory, examinable modules on essential future competencies. This includes practical training on EHR systems (like LHIMS), principles and practice of telemedicine, fundamentals of health administration and finance (including NHIS billing), and advanced training in interpersonal communication and patient-centered care.
53. **Develop Flexible "Micro-Credentials":** Universities and training colleges should partner with industry to offer short, accredited certificate courses ("micro-

credentials") in high-demand areas. These could include Health Informatics, Medical Coding and Billing for NHIS, Project Management for Health Professionals, and Digital Marketing for Health Services. This would allow existing professionals to upskill and new entrants to specialize.

**For Investors and Private Sector Players**

- 54. **Invest in "Missing Middle" Training:** There is a significant market opportunity for investment in vocational training programs that target the "missing middle" of the workforce. Funding the development of high-quality, accredited programs for roles like Home Health Aides, Medical Assistants, and Pharmacy Technicians would create a desperately needed pipeline of skilled labor for both the public and private sectors.
- 55. **Forge Public-Private Partnerships in Digital Health:** Private tech companies should actively seek partnerships with the MoH and GHS to scale their digital health solutions into the public system. There is immense potential to adapt platforms for teleconsultation, diagnostics, and pharmacy management to support the rural CHPS network, creating a win-win scenario of market expansion and public health impact.
- 56. **Strengthen Localized Supply Chains:** Investment in initiatives like CHAG's Med4All platform <sup>12</sup> is critical. Strengthening local pharmaceutical and medical supply chains not only improves healthcare delivery but also creates significant ancillary employment in logistics, warehousing, quality control, and management, further deepening the impact of the Lavender Economy.

|   |
|---|
| Table 7: Summary of Compensation Benchmarks for Key Care Professions in Ghana |
| Job Title   |
| Registered Nurse  |
|   |
|   |

|                              |
|------------------------------|
| Medical Doctor               |
|                              |
| Pharmacist                   |
| Medical Laboratory Scientist |
| Community Health Officer     |
| Hospital Administrator       |
| Informal Caregiver           |

## Works cited

57. en.wikipedia.org, accessed June 25, 2025, [https://en.wikipedia.org/wiki/National\\_Health\\_Insurance\\_Scheme\\_\(Ghana\)](https://en.wikipedia.org/wiki/National_Health_Insurance_Scheme_(Ghana))
58. National Health Insurance Authority, accessed June 25, 2025, <https://www.moh.gov.gh/national-health-insurance-authority/>
59. About Us - NHIS, accessed June 25, 2025, <https://www.nhis.gov.gh/about>
60. The Effect of Ghana's National Health Insurance Scheme on Health Care Utilisation - PMC, accessed June 25, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC3426378/>
61. Implementation of the National Health Insurance Scheme (NHIS) in Ghana: Lessons for South Africa and Low- and Middle-Income Countries - PubMed Central, accessed June 25, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC7537808/>
62. NHIS, accessed June 25, 2025, <https://www.nhis.gov.gh/>
63. extranet.who.int, accessed June 25, 2025, <https://extranet.who.int/mindbank/item/7134#:~:text=Description,mentally%20healthy%20population%20of%20Ghana.>
64. Ghana - Providing Sustainable Mental and Neurological Health Care in Ghana and Kenya - NCBI Bookshelf, accessed June 25, 2025, <https://www.ncbi.nlm.nih.gov/books/NBK350306/>
65. Mental Health Policy 2019 -2030: Ensuring A Mentally Healthy Population - WHO MiNDbank, accessed June 25, 2025, <https://extranet.who.int/mindbank/item/7134>
66. Mental health law in Ghana - PMC, accessed June 25, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC5618813/>
67. About - Mental Health Authority, accessed June 25, 2025, <https://mha-ghana.com/about/>
68. Faith-Based Organizations in Health Service Delivery in Ghana - CCIH, accessed June 25, 2025, <https://www.ccih.org/faith-based-organizations-in-health-service-delivery-in-ghana/>

69. ELECTRONIC HEALTH IN GHANA: CURRENT STATUS AND FUTURE PROSPECTS, accessed June 25, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC3959911/>
70. LHIMS: Harnessing Ghana's digital healthcare management system - MyJoyOnline, accessed June 25, 2025, <https://www.myjoyonline.com/lhims-harnessing-ghanas-digital-healthcare-management-system/>
71. eHealth | GCNet, accessed June 25, 2025, <https://gcnet.com.gh/ehealth/>
72. Ministry Of Health: Moh.Gov.gh, accessed June 25, 2025, <https://www.moh.gov.gh/>
73. Ministry of Health - Ghana.GOV, accessed June 25, 2025, <https://www.ghana.gov.gh/ministries/3072216696/>
74. Ghana Health Service - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/ghana-health-service/>
75. Health Partners - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/health-partners/>
76. Ghana Health Service - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Health\\_Service](https://en.wikipedia.org/wiki/Ghana_Health_Service)
77. Ghana Health Service (GHS) - Devex, accessed June 25, 2025, <https://www.devex.com/organizations/ghana-health-service-ghs-52547>
78. MDC - MEDICAL AND DENTAL COUNCIL, accessed June 25, 2025, <https://www.mdcghana.org/>
79. Ghana Medical and Dental Council - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/ghana-medical-and-dental-council/>
80. Home - Nursing and Midwifery Council of Ghana, accessed June 25, 2025, <https://www.nmc.gov.gh/web/>
81. Nursing and Midwifery Council - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/nursing-and-midwifery-council/>
82. Licensing and Registration - Ghana Psychology Council, accessed June 25, 2025, <https://ghanapsychologycouncil.gov.gh/licensing-and-registration/>
83. Ghana Psychology Council – Authenticity, Community, Excellence and Genuineness., accessed June 25, 2025, <https://ghanapsychologycouncil.gov.gh/>
84. Job Vacancy For Registered Nurses and Midwives - Current Jobs in Ghana, accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-registered-nurses-and-midwives-2/>
85. MDCGH Registration - The World Continuing Education Alliance, accessed June 25, 2025, <https://wcea.education/mdcgh-registration/>
86. Medical and Dental Council of Ghana - The World Continuing Education Alliance, accessed June 25, 2025, [https://wcea.education/mdcgh?source\\_code=WS01](https://wcea.education/mdcgh?source_code=WS01)
87. Agencies - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/agencies/>
88. Ho Teaching Hospital - Ministry Of Health, accessed June 25, 2025, <https://www.moh.gov.gh/ho-teaching-hospital/>
89. A Brief History | Korle Bu Teaching Hospital, accessed June 25, 2025, <https://kbth.gov.gh/a-brief-history/>



90. Directorates - Komfo Anokye Teaching Hospital, accessed June 25, 2025, <https://kath.gov.gh/directorates/>
91. Greater Accra Regional Hospital, accessed June 25, 2025, <https://garh.gov.gh/>
92. Community-based Health Planning and Services programme in ..., accessed June 25, 2025, <https://pmc.ncbi.nlm.nih.gov/articles/PMC10948426/>
93. Community-based Health Planning and Services programme in Ghana: a systematic review, accessed June 25, 2025, <https://pubmed.ncbi.nlm.nih.gov/38504682/>
94. The Bank Hospital: Best Multi-Specialty Private Hospital in Ghana, accessed June 25, 2025, <https://thebankhospital.com/>
95. Careers - The Bank Hospital, accessed June 25, 2025, <https://thebankhospital.com/careers/>
96. Euracare Ghana, accessed June 25, 2025, <https://euracarehealth.com/hospitals/euracare-ghana/>
97. BANAHENE SPECIALIST HOSPITAL – BETTER CARE, EVERY TOUCH, EVERY TIME, accessed June 25, 2025, <https://banahenehospital.org/>
98. List of hospitals in Ghana - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/List\\_of\\_hospitals\\_in\\_Ghana](https://en.wikipedia.org/wiki/List_of_hospitals_in_Ghana)
99. MAB International Hospital: Best Hospital In Lapaz Accra, accessed June 25, 2025, <https://mabhospitals.org/>
100. Health & Safety Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/health-safety>
101. NASM Certified Wellness Coach - Institute of Fitness Ghana, accessed June 25, 2025, <https://www.instituteoffitnessghana.com/product/nasm-certified-wellness-coach/>
102. About - Institute of Fitness Ghana, accessed June 25, 2025, <https://www.instituteoffitnessghana.com/about/>
103. Holistic Counselling Consult: Home, accessed June 25, 2025, <https://holisticcounsellingconsult.com/>
104. Faith-Based Organizations in Health Service Delivery in Ghana - CCIH, accessed June 25, 2025, [https://www.ccih.org/resource\\_index/faith-based-organizations-in-health-service-delivery-in-ghana/](https://www.ccih.org/resource_index/faith-based-organizations-in-health-service-delivery-in-ghana/)
105. 10 NGOs Transforming Lives in Ghana - The Borgen Project, accessed June 25, 2025, <https://borgenproject.org/lives-in-ghana/>
106. Ghana Medical Help – Global Health Solutions, accessed June 25, 2025, <https://ghanamedicalhelp.com/>
107. Careers | CRS - Catholic Relief Services, accessed June 25, 2025, <https://www.crs.org/about-us/careers>
108. Employment — AMPATH Ghana, accessed June 25, 2025, <https://www.ampathghana.org/employment>
109. Salaries and Ranks of Nurses in Ghana: All You Need to Know - YouTube, accessed June 25, 2025, <https://www.youtube.com/watch?v=Kc7fBfLEtIA>
110. Current Healthcare Jobs in Ghana 2025 - See Jobweb Ghana, accessed June



- 25, 2025, <https://jobwebghana.com/job-category/healthcare-jobs-in-ghana/>
111. Recruitment Ghana : hospital CVs - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/hospital>
  112. Ghana Medical Association - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Medical\\_Association](https://en.wikipedia.org/wiki/Ghana_Medical_Association)
  113. www.ghanaweb.com, accessed June 25, 2025, <https://www.ghanaweb.com/blogs/spencerwan/Nurses-Salary-in-Ghana-How-Much-Do-Nurses-Earn-2025-Update-7284#:~:text=How%20Much%20Does%20a%20Nurse%20Earn%20in%20Ghana%3F,-The%20salaries%20of&text=Certificate%20Nurses%3A%20GHS%201%2C300%20per,and%20GHS%202%2C200%20per%20month.>
  114. Nurses Salary in Ghana: How Much Do Nurses Earn? [2025 Update] - Ghana Web, accessed June 25, 2025, <https://www.ghanaweb.com/blogs/spencerwan/Nurses-Salary-in-Ghana-How-Much-Do-Nurses-Earn-2025-Update-7284>
  115. Job and Pay - Generalist medical practitioners - Africapay.org/Ghana, accessed June 25, 2025, <https://africapay.org/ghana/career/role-pay/ghana-generalist-medical-practitioners>
  116. Salaries in Ghana - Scientect, accessed June 25, 2025, <https://scientect.org/2024/09/13/salaries-in-ghana/>
  117. What is considered to be a good salary in Ghana ? : r/ghana - Reddit, accessed June 25, 2025, [https://www.reddit.com/r/ghana/comments/11khp8i/what\\_is\\_considered\\_to\\_be\\_a\\_good\\_salary\\_in\\_ghana/](https://www.reddit.com/r/ghana/comments/11khp8i/what_is_considered_to_be_a_good_salary_in_ghana/)
  118. Health Care Salary in Ghana | PayScale, accessed June 25, 2025, [https://www.payscale.com/research/GH/Industry=Health\\_Care/Salary](https://www.payscale.com/research/GH/Industry=Health_Care/Salary)
  119. About Us - Ghana Psychological Association, accessed June 25, 2025, <https://gpaghana.org/about-us/>
  120. Ghana Psychological Association, accessed June 25, 2025, <https://gpaghana.org/>
  121. Job offer Medical - Ghana - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-medical>
  122. Ghana Telemedicine | Novartis Foundation, accessed June 25, 2025, <https://www.novartisfoundation.org/past-programs/digital-health/ghana-telemedicine>
  123. Ghana Telemedicine Toolkit - Novartis Foundation, accessed June 25, 2025, [https://www.novartisfoundation.org/sites/arctic\\_novartisfoundation/files/2020-11/interactive-implementation-guide.pdf](https://www.novartisfoundation.org/sites/arctic_novartisfoundation/files/2020-11/interactive-implementation-guide.pdf)
  124. Virtual Care & Telehealth Services in Ghana for Employees - MantraCare, accessed June 25, 2025, <https://mantra.care/ghana/virtual-care-telehealth-ghana/>
  125. Telemedicine service now in Ghana! - Apollo Hospitals, accessed June 25, 2025,

- <https://www.apollohospitals.com/corporate/events/telemedicine-service-now-in-ghana/>
126. Top health tech startups in Ghana - GhScientific, accessed June 25, 2025, <https://ghscientific.com/top-health-tech-startups-in-ghana/>
  127. Revolutionizing Healthcare: The Rise of Healthtech Startups in Africa - Upper Nile Institute, accessed June 25, 2025, <https://uppernileinstitute.com/revolutionizing-healthcare-the-rise-of-healthtech-startups-in-africa/>
  128. Digital Health Startups in Ghana - HealthTech Alpha, accessed June 25, 2025, <https://www.healthtechalpha.com/country/digital-health-startups-in-ghana>
  129. A Life Of Peace Wellness Education Institute - Ghana, accessed June 25, 2025, <https://www.alifeofpeace.org/ghana>
  130. Job Vacancy For Home Care Assistants - Current Jobs in Ghana, accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-home-care-assistants/>
  131. Home-based personal care workers - Job & Pay - Mywage.com, accessed June 25, 2025, <https://mywage.org/ghana/career/ghana-job-pay/ghana-home-based-personal-care-workers>
  132. Recruitment Caregiver - Ghana - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/recruitment-caregiver>
  133. Job ad Ghana : Caregiver - Birmingham - Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/job-vacancies-ghana/caregiver-birmingham-180635>
  134. VirTutor Online | Ghana's First Online Tutoring Platform, accessed June 25, 2025, <https://www.virtutoronline.com/>
  135. Online Tutors in Ghana Spires™ | From £30 Per Class | Quick & Easy | Professional Tutoring in Ghana | Lessons available at Primary, Secondary School, GCSE, A-Level, University Admissions, Undergraduate, Master's, Postgraduate and Professional levels, accessed June 25, 2025, <https://spires.co/tutors-in-ghana>
  136. Become a tutor - VirTutor Online, accessed June 25, 2025, <https://www.virtutoronline.com/become-a-tutor/>
  137. Current Job Vacancies - GLMIS | Ghana Labour Market Information ..., accessed June 25, 2025, <https://glmis.gov.gh/jobs/joblistings>
  138. Ministry of Labour, Jobs & Employment - job seekers, accessed June 25, 2025, <https://melr.gov.gh/6/7/job-seekers>
  139. HTI Portal, accessed June 25, 2025, <https://register.healthtraining.gov.gh/>
  140. Hospital Salary in Ghana | PayScale, accessed June 25, 2025, <https://www.payscale.com/research/GH/Industry=Hospital/Salary>

# **The Orange Economy in Motion: A Nationwide Survey of Employment and Opportunity in Ghana's Creative and Cultural Industries**

## **Executive Summary & Strategic Outlook**

Ghana's Creative and Cultural Industries, often termed the Orange Economy, represent a dynamic and rapidly evolving frontier for economic growth, job creation, and national identity projection. This report provides an exhaustive nationwide survey of the employment landscape within this sector, documenting the full spectrum of work opportunities from formal to informal, and mapping the complex ecosystem of talent, enterprise, and policy that defines it. The findings reveal a sector at a critical inflection point, characterized by significant economic potential, burgeoning youth participation, and a transformative digital shift, yet constrained by systemic challenges.

The Orange Economy's contribution to Ghana's Gross Domestic Product (GDP) has shown notable growth, estimated at approximately 2.5% in 2024, up from 1.53% in 2010.<sup>1</sup> The sector provides substantial employment, with a 2014 figure of over 784,000 jobs and a projected capacity to create thousands more annually.<sup>1</sup> This economic vitality is propelled by a deeply motivated youth demographic, driven by passion and a desire for self-expression.<sup>3</sup> However, this potential is encumbered by significant barriers, including limited access to finance, inadequate digital and physical infrastructure, gaps in business and marketing skills, and the persistent challenge of intellectual property protection.<sup>3</sup>

A pivotal development is the government's 2025 launch of the UNESCO Culture|2030 Indicators, signaling a strategic shift towards evidence-based policymaking.<sup>5</sup> This initiative promises to create a virtuous cycle where reliable data informs policy, which in turn unlocks targeted investment, addresses systemic barriers, and fuels further

growth.

The employment landscape is diverse and multifaceted. Major urban centers, particularly Accra and Kumasi, serve as the primary hubs for formal employment in sectors like media, advertising, and digital arts.<sup>7</sup> Concurrently, a vast and vital informal economy thrives nationwide, centered on traditional crafts in designated villages like Bonwire (Kente) and Ntonso (Adinkra), and community-based cultural tourism.<sup>9</sup> The digital revolution has superimposed a third layer: a burgeoning freelance and gig economy. Ghanaian creatives are increasingly leveraging global platforms like Upwork and Fiverr and local marketplaces to offer services in graphic design, content creation, and software development, transcending geographical limitations.<sup>11</sup>

This report provides a granular, subsector-by-subsector analysis of key job roles, from Graphic Designers and Film Directors to Kente Weavers and Social Media Influencers. It documents the specific technical and soft skills in demand, outlines educational and career pathways, and provides indicative remuneration data where available.

Based on this comprehensive analysis, the report puts forth a series of strategic recommendations for key stakeholders:

141. **For Workforce Development:** Educational and vocational institutions must urgently bridge the gap between technical creative skills and commercial acumen. Curricula should be reformed to integrate entrepreneurship, financial literacy, marketing, and intellectual property management to empower creatives to monetize their talents effectively.
142. **For Policy and Governance:** Government and its agencies, including the Ministry of Tourism, Arts, and Culture (MoTAC) and the National Film Authority (NFA), should leverage the data from the new UNESCO framework to design targeted policies. Priorities must include creating dedicated funding mechanisms for creative enterprises, strengthening IP enforcement, and developing infrastructure that supports both digital and traditional creative production.
143. **For Industry and Investment:** Professional associations must expand their role beyond advocacy to become active facilitators of mentorship, networking, and market access. Public-private partnerships should be pursued to invest in high-growth areas such as digital content creation, game development, and the value chain for traditional crafts.
144. **For Fostering Creative Ecosystems:** Support must be directed towards strengthening the role of creative intermediaries—galleries, agencies, and

cultural organizations—that bridge the gap between creators and markets. Furthermore, investing in community-based cultural and ecotourism initiatives is critical for ensuring that the economic benefits of the Orange Economy are distributed inclusively across all regions.

By implementing these integrated strategies, Ghana can harness the full potential of its Orange Economy, transforming its rich cultural capital and vibrant youth talent into a sustainable engine for national development and global creative influence.

## **The National Creative Employment Landscape: A Macro-Level Analysis**

This section establishes the broad economic, policy, and structural context of Ghana's Orange Economy. It analyzes key performance indicators that underscore the sector's growing importance, examines a pivotal policy shift towards data-driven governance, and outlines the systemic challenges and opportunities that shape the entire creative ecosystem. The findings illustrate a sector brimming with potential but in need of strategic, coordinated support to overcome long-standing barriers and achieve sustainable growth.

### **Quantifying the Orange Economy: Economic Contribution and Workforce Size**

Accurately measuring the economic footprint of the creative and cultural industries is a foundational step for effective policy and investment. Recent data indicates a significant and growing contribution to the national economy. According to the Ghana Statistical Service (GSS), the arts and culture sector accounted for approximately 2.5% of Ghana's GDP in 2024.<sup>1</sup> This represents a substantial increase from the 1.53% contribution reported by UNESCO for the year 2010, suggesting a period of robust growth over the last decade and a half.<sup>2</sup> This growth aligns with global trends, where creative industries have emerged as one of the most dynamic sectors of the world economy.<sup>3</sup>

In terms of employment, the sector is a major provider of livelihoods. Data from the Ministry of Tourism, Arts and Culture (MoTAC) from 2014 indicated that the creative and cultural sector employed 784,149 people.<sup>2</sup> While more recent comprehensive figures are not readily available, forward-looking projections from MoTAC suggest that targeted global collaboration initiatives alone could create an additional 10,000 jobs within the industry.<sup>1</sup> This capacity for job creation is particularly vital in a country with a large youth population.

The sector's potential for foreign exchange earnings is also considerable. With the global market for creative exports projected by UNESCO to reach \$4.8 trillion by 2025, Ghana has set an ambitious target of generating \$100 million in annual export earnings from this sector.<sup>1</sup> This includes revenue from visual arts, music, film, and traditional handicrafts, which saw exports valued at \$12.54 million between 2009 and 2012.<sup>2</sup>

The very existence of differing and dated statistics highlights a critical underlying issue: a historical data deficit that has likely led to an undervaluation of the sector's true economic impact. The discrepancy between the 2010 and 2024 GDP figures, for example, while indicating positive growth, also points to inconsistencies in measurement methodologies over time. This lack of consistent, reliable data has historically hampered the ability of stakeholders to make a compelling, evidence-based case for policy attention and resource allocation.

### **A New Policy Paradigm: The UNESCO Culture|2030 Indicators**

In a direct and strategic response to the long-standing data deficit, Ghana has embarked on a new policy trajectory. In May 2025, the government, through MoTAC, officially launched the implementation of the UNESCO Culture|2030 Indicators.<sup>5</sup> This initiative is described as a "strategic step" to equip the nation with evidence-based tools to measure the real impact of culture on sustainable development.<sup>5</sup> The launch marks the culmination of over a decade of advocacy from pioneering cultural leaders and signifies a national commitment to positioning culture as a central pillar of development.<sup>6</sup>

The stated goals of this framework are explicit and transformative. They aim to provide a robust methodology to "quantify the contribution of cultural employment to

GDP" and to "advocate for stronger investment in the arts, heritage, and creative sectors".<sup>5</sup> Crucially, this is not an isolated effort by the cultural ministry. The initiative mandates collaborative involvement from key state institutions, including the Ghana Statistical Service, the Ministry of Finance, and the Ghana Revenue Authority, ensuring that the data generated is integrated into national economic planning and fiscal policy.<sup>6</sup>

The adoption of this framework is more than a technical exercise in data collection; it represents a fundamental shift in governance. It moves the sector's narrative away from one based on passion and anecdotal evidence to one grounded in verifiable data and measurable outcomes. This creates the potential for a powerful feedback loop: reliable data enables stronger advocacy, which can unlock greater public and private investment. This investment can then be used to address the systemic challenges that constrain the sector, leading to tangible growth that is, in turn, captured by the improved data collection framework. This "data-policy-investment flywheel" is arguably the most significant strategic development in the sector, holding the potential to formalize the Orange Economy's standing and unlock its full potential.

### **Systemic Challenges: Barriers to Growth and Participation**

Despite its dynamism, Ghana's creative sector is constrained by a network of interrelated systemic challenges that impede growth and create precarious conditions for its practitioners, particularly the youth. A consistent theme across academic research, industry reports, and media analysis is the profound difficulty creatives face in accessing finance.<sup>3</sup> Fashion designers in Accra and filmmakers in Kumasi may receive acclaim but often lack the capital to scale their businesses, relying instead on personal savings or informal loans.<sup>4</sup>

This financial barrier is compounded by inadequate infrastructure. High data costs and unreliable internet connectivity remain a significant hurdle for digital creators, limiting their ability to upload large files, stream content, or collaborate effectively with international clients.<sup>4</sup> Physical infrastructure, such as well-equipped performance venues, studios, and exhibition spaces, is also limited, particularly outside of the main urban centers.

Furthermore, there is a widely recognized gap in mentorship and business



management skills.<sup>3</sup> The British Council has highlighted the need to empower young artists with business skills to maximize the commercial benefits of their talents.<sup>13</sup> Many creatives possess exceptional technical and artistic skills but lack the knowledge of marketing, branding, contract negotiation, and financial management required to build sustainable careers.<sup>3</sup>

Finally, societal and cultural factors present additional barriers. A lingering societal stigma that views creative pursuits as hobbies rather than viable careers can discourage participation and limit family support.<sup>3</sup> This is particularly relevant in a traditional society where the perceived value of a career in the arts may be low, affecting both the motivation and the opportunities available to young people.<sup>3</sup> These challenges do not exist in isolation; they reinforce one another. A lack of funding prevents investment in training and infrastructure, while a lack of business skills makes it harder to secure funding, creating a cycle that can stifle even the most passionate and talented individuals.

### **Key Growth Vectors: Digital Transformation and Development Partnerships**

Counterbalancing these challenges are powerful vectors of growth that are actively shaping the future of the Orange Economy. The most significant of these is the digital transformation. Digital platforms, while presenting a "double-edged sword" with challenges like algorithmic bias and inequitable monetization, have undeniably provided Ghanaian creators with unprecedented tools to create, distribute, and share their work with a global audience.<sup>4</sup> The rise of digital distribution through platforms like WhatsApp and Instagram for publishing, and the success of audiobooks via services like AkooBooks, demonstrate how technology can overcome traditional physical barriers to market access.<sup>14</sup>

This digital shift is supported by a robust ecosystem of international development partners who recognize the sector's potential. The World Bank, through initiatives like the Ghana Economic Transformation Project (GETP), is engaged in strategic investments in tourism and the creative arts to promote job creation.<sup>15</sup> The United Nations Development Programme (UNDP) has invested over \$60 million in Ghana over five years in areas including youth employment and digital innovation, and its 'timbuktoo' initiative specifically targets early-stage creative entrepreneurs in Ghana



for incubation and support.<sup>16</sup> Similarly, the British Council has a long history of supporting arts and culture in Ghana, focusing on capacity building, cultural exchange, and providing strategic analysis through reports like "Publishing Futures".<sup>13</sup>

The active engagement of these partners is crucial. They provide not only funding but also technical assistance, global networks, and structured training programs that directly address the systemic gaps in finance and business skills. This creates a critical support structure that helps Ghanaian creatives navigate the challenges of the local market while connecting to global opportunities.

The interplay between the sector's drivers and barriers reveals a fundamental condition: the paradox of youth participation. The Orange Economy's greatest asset is its vibrant, intrinsically motivated youth, who are drawn to the sector for passion and personal fulfillment.<sup>3</sup> Yet, this is the very demographic most exposed to the harshest systemic barriers—financial exclusion, lack of mentorship, and societal pressure. This means that the sector's engine of growth is also its most vulnerable component. Consequently, effective strategy cannot just be about fostering creativity; it must be about building a protective and enabling ecosystem around young creatives. Initiatives that combine funding with structured business support, like the UNDP's 'timbuktoo' program, are therefore not just beneficial but essential for translating youthful passion into sustainable economic activity.

Table 2.1: Ghana's Orange Economy - Key Economic & Workforce Indicators (2010-2025)

| Indicator                        | Value/Figure                           | Year      | Source(s)                               |
|----------------------------------|--|-----------|---|
| Contribution to GDP              | 1.53%                                  | 2010      | UNESCO 2                                |
| Contribution to GDP              | Approx. 2.5%                           | 2024      | Ghana Statistical Service 1             |
| Total Employment                 | 784,149 persons                        | 2014      | Ministry of Tourism, Arts and Culture 2 |
| Projected New Jobs               | 10,000 jobs (from global partnerships) | 2024      | Ministry of Tourism, Arts and Culture 1 |
| Cultural Goods Exports           | \$12.54 million (handicrafts)          | 2009-2012 | Ministry of Tourism, Arts and Culture 2 |
| Projected Annual Export Earnings | \$100 million                          | 2024      | UNESCO / MoTAC 1                        |
| Global Creative Exports Market   | \$4.8 trillion (Projected)             | 2025      | UNESCO 1                                |

## Subsector Deep Dive: Analysis of Employment, Skills, and Pathways

This section provides a granular, evidence-based examination of the employment landscape across the nine core subsectors of Ghana's Orange Economy. Each subsector is analyzed to identify dominant job roles, prevailing employment types, requisite skills, educational and career pathways, key employers and platforms, and indicative remuneration. This detailed breakdown reveals the unique characteristics and opportunities within each domain, providing the foundational data for strategic workforce planning and policy development.

### Visual and Digital Arts

The Visual and Digital Arts subsector is a cornerstone of Ghana's creative economy, characterized by a dynamic interplay between traditional fine arts and a rapidly expanding digital creative class. Employment opportunities are diverse, spanning formal corporate roles, a vibrant freelance market, and independent artistic practice.

Dominant Roles and Employment Types:

The most visible roles in the formal sector are Graphic Designer and Multimedia Artist. These positions are increasingly "embedded" within non-creative industries, with companies in sectors like agribusiness (NGC KARIDA AGROSCIENCES in Kumasi) and automotive sales (Zonda Tec Ghana in Accra) hiring full-time creatives for their marketing departments.<sup>7</sup> Other formal roles include

**Creative Director** and **Digital Marketing Officer** with a graphics and videography focus.<sup>7</sup>

The freelance and informal sectors are populated by a wide range of specialists, including **Digital Illustrators**, **Animators** (2D and 3D), and **UI/UX Designers**, whose résumés are prominent on local job portals like Ghanajob.com.<sup>18</sup> International platforms like Upwork feature numerous Ghanaian freelancers offering services as

**Graphic Designers** and **Photo Editors**.<sup>11</sup> Independent practice is the primary mode

for

**Fine Artists** (painters, sculptors), who often rely on representation by galleries, participation in exhibitions, and membership in bodies like the Ghana Association of Visual Artists (GAVA) for market access and professional standing.<sup>20</sup>

**Photographers** also operate largely on a freelance basis, covering events or undertaking commercial and artistic projects.<sup>4</sup> Emerging roles like

**NFT Artist** and **Concept Artist** are gaining traction, driven by global digital trends.<sup>22</sup>

Technical and Professional Competencies:

Proficiency in the Adobe Creative Suite (Photoshop, Illustrator, InDesign, Premiere Pro, After Effects) is a near-universal requirement for digital roles, cited in numerous job descriptions and freelancer profiles.<sup>24</sup> Other key software includes

**Figma** and **Canva** for UI/UX and social media design.<sup>24</sup> For multimedia roles, skills in

**videography, video editing, and motion graphics** are essential.<sup>7</sup> Animators require expertise in 2D and 3D animation software, while fine artists need mastery of their chosen physical media. Soft skills are equally critical, with

**creativity, communication, collaboration, and creative problem-solving** being highly valued.<sup>24</sup> For freelancers, entrepreneurial skills like

**marketing, client management, and networking** are paramount for success.

Educational and Career Pathways:

Formal education is a common pathway, with degrees such as a Bachelor of Fine Arts (BFA), B.A. in Graphic Design, or B.A. in Art Education from institutions like the University of Education, Winneba (UEW) and Kwame Nkrumah University of Science and Technology (KNUST) being typical qualifications.<sup>28</sup> Specialized institutions like the Accra International School of Advertising and Design (AisAD) offer intensive, portfolio-focused programs in fields like motion graphics and animation.<sup>25</sup> The foundation is often laid at the secondary level, with many Senior High Schools across Ghana offering a Visual Arts track.<sup>32</sup> However, many successful digital artists, particularly in emerging fields, are self-taught, relying on online tutorials and bootcamps. Professional development is supported by organizations like GAVA, which provides a platform for networking, advocacy, and professional exchange.<sup>21</sup>

Market Context and Remuneration:

Potential employers are diverse, ranging from advertising agencies and media houses to the marketing departments of virtually any large company. Freelancers find work through global platforms like Upwork and Fiverr, local portals like Ghanajob.com, and professional networks.

Remuneration varies significantly by employment type and experience. A formal, full-time Social Media Marketer role with design responsibilities might offer a monthly salary of GHS 2,400 - 3,000.<sup>7</sup> On the freelance market, Ghanaian

**Graphic Designers** on Upwork list hourly rates from \$3 to \$10, reflecting a wide range of experience levels and a competitive global market.<sup>11</sup> Local platform Twine suggests a project-based rate of GHS 2,500 - GHS 5,000 for a mid-level artist.<sup>34</sup> Salary aggregator Paylab.com indicates a general monthly gross salary range of GHS 2,157 - GHS 4,911 for a "Graphic" role in Ghana.<sup>35</sup>

Table 3.1.1: Profile of Key Roles in the Visual & Digital Arts Subsector

| Job Title/Role Name            | Subsector Category    | Quantity | Typical Location      | Employment Type               | Required Technical Skills   | Required Soft Skills  | Typical Qualifications                                | Potential Employers/Platforms  | Remuneration Indicator                                | Demand Trend |
|--------------------------------|-----------------------|----------|-----------------------|-------------------------------|---|---|---|--|---|--------------|
| :---                           | :---                  | :---     | :---                  | :---                          | :---  | :---  | :---  | :---   | :---  | :---         |
| Graphic Designer               | Visual & Digital Arts | High     | Accra, Kumasi, Remote | Formal (Full-time), Freelance | Adobe Creative Suite (Photoshop, Illustrator, InDesign), Canva, Figma           | Creativity, Communication, Attention to Detail, Time Management | B.A. Graphic Design, Diploma in Multimedia, Portfolio | Advertising Agencies, Corporate Marketing Depts., NGOs, Upwork, Jobberman  | GHS 2,400-5,000/month (formal); \$5-15/hr (freelance) | Growing      |
| Multimedia Artist              | Visual & Digital Arts | Medium   | Accra                 | Formal (Full-time), Freelance | Videography, Video Editing (Premiere Pro), Motion Graphics (After Effects)      | Storytelling, Artistic Vision, Project Management               | BFA Multimedia, Film School Diploma                   | Media Houses, Digital Marketing Agencies, Production Companies             | GHS 3,000-6,000/month (formal); Project-based rates   | Growing      |
| Digital Illustrator            | Visual & Digital Arts | Medium   | Accra, Kumasi, Remote | Freelance, Gig-based          | Adobe Illustrator, Procreate, Digital Painting, Concept Art                     | Creativity, Originality, Collaboration                          | BFA, Self-taught with strong portfolio                | Publishing Houses, Animation Studios, Game Developers, Upwork, Fiverr      | Project-based (\$50-\$500+)                           | Growing      |
| Fine Artist (Painter/Sculptor) | Visual & Digital Arts | Low      | Accra, Kumasi         | Self-employed, Informal       | Mastery of physical media (oil, acrylic, clay, wood, etc.), Exhibition Curation | Self-discipline, Networking, Resilience, Artistic Voice         | BFA/MFA in Fine Arts, Apprenticeship                  | Galleries (Nubuke Foundation), Art Collectors, GAVA, Cultural Institutions | Highly variable (sale of works)                       | Stable       |
| Photographer                   | Visual & Digital Arts | High     | All Urban Centers     | Freelance, Self-employed      | Camera Operation, Lighting, Photo Editing (Lightroom, Photoshop)                | Interpersonal Skills, Artistic Eye, Client Management           | No formal degree required; strong portfolio is key    | Event Organizers, Media, Fashion Brands, Individuals (weddings, portraits) | Event-based (\$200-\$1000+); Project rates            | Stable       |
| UI/UX Designer                 | Digital Arts          | Medium   | Accra, Remote         | Formal (Full-time), Freelance | Figma, Adobe XD, User Research, Wireframing, Prototyping                        | Empathy, Problem-solving,                                       |   |  |   |              |

Analytical Thinking | B.A. Communication Design, Specialized Bootcamps, Portfolio | Tech Companies, Banks, E-commerce Platforms, Startups | GHS 4,000-8,000+/month (formal) | High Growth |

## Performing Arts

The Performing Arts subsector in Ghana is a vibrant domain, deeply rooted in cultural traditions while simultaneously embracing contemporary forms of expression. Employment is predominantly characterized by freelance, gig-based, and informal arrangements, with opportunities heavily concentrated around live events, cultural festivals, and the hospitality industry.

Dominant Roles and Employment Types:

The sector is led by practitioners such as Musicians, Vocalists, and Bands who perform live at a variety of venues.<sup>4</sup>

**Dancers** and **Choreographers** find work in performance troupes, music video production, and by offering workshops.<sup>37</sup>

**Theatre Actors** are central to stage productions, though consistent, long-term employment is rare.<sup>39</sup> Behind the scenes, roles like

**Music Producer**, **Sound Technician**, and **Stage Manager** are critical to the execution of performances and recordings.<sup>40</sup>

Formal employment is scarce but exists within national institutions. The Centres for National Culture (CNCs) in major cities like Accra and Kumasi maintain resident artistic groups, including musicians and actors, who perform for the public and in schools.<sup>2</sup> The National Theatre of Ghana is another key, albeit limited, source of formal engagement for performers and technical crew.<sup>5</sup> The vast majority of work, however, is secured on a project-by-project or event-by-event basis, making it a quintessential gig economy.

Technical and Professional Competencies:

For performers, the core requirements are exceptional talent and technical mastery, whether it be instrumental proficiency, vocal range and control, or advanced dance techniques spanning traditional Ghanaian forms to contemporary styles. Music Producers require proficiency in Digital Audio Workstations (DAWs) and sound engineering principles.<sup>41</sup> Technical roles demand expertise in operating

**sound and lighting boards**, stage rigging, and other stagecraft equipment. Across all roles, soft skills such as **stage presence, discipline, collaboration, and adaptability** are crucial. For those managing their own careers, **entrepreneurship, networking, and self-promotion** are indispensable.

Educational and Career Pathways:

Formal training is available at the tertiary level. The University of Education, Winneba (UEW) offers a range of programs including a B.A. in Theatre Arts, B.A. in Music Education, and Diplomas in both fields.<sup>28</sup> The University of Ghana's School of Performing Arts is another premier institution, with dedicated departments for Music and Dance Studies offering undergraduate and postgraduate degrees.<sup>38</sup> Its dance program is built on the concepts of appreciation, choreography, performance, and documentation.<sup>38</sup> However, many performers hone their skills through informal apprenticeships, mentorship, and practical experience within performance groups.

Market Context and Remuneration:

The primary "employers" are event organizers, festival promoters, hotels, resorts, and corporate clients seeking entertainment for functions.<sup>42</sup> Music rights management is a critical, though often contentious, source of income, managed by the Ghana Music Rights Organization (GHAMRO), which is responsible for collecting and distributing royalties.<sup>44</sup> Remuneration is highly variable and often negotiated per gig. Paylab.com provides some indicative monthly salary ranges for full-time equivalent roles, suggesting GHS 2,062 - GHS 4,159 for a

**Dancer** and GHS 1,802 - GHS 4,688 for a **Choreographer**.<sup>40</sup> For musicians, income is a mix of performance fees, royalties, and, for a successful few, brand endorsements. The demand for performers is heavily seasonal, peaking around major holidays like Christmas and Easter, and during festival seasons.

Table 3.2.1: Profile of Key Roles in the Performing Arts Subsector

| Job Title/Role Name | Subsector Category | Quantity | Typical Location        | Employment Type                | Required Technical Skills   | Required Soft Skills                                  | Typical Qualifications                        | Potential Employers/Platforms                            | Remuneration Indicator                               | Demand Trend |
|---------------------|--------------------|----------|-------------------------|--------------------------------|---|---|---|--|--|--------------|
| :---                | :---               | :---     | :---                    | :---                           | :---  | :---  | :---  | :---   | :---   | :---         |
| Musician/Vocalist   | Performing Arts    | High     | Accra, Kumasi, Takoradi | Freelance, Gig-based, Informal | Instrument proficiency, Vocal technique, Music theory                     | Stage presence, Discipline, Collaboration, Networking | B.A. Music, Self-taught with high skill level | Event Organizers, Hotels, Nightclubs, Festivals, GHAMRO  | Per-gig fees (GHS 500 - 5,000+), Royalties           | Stable       |
| Dancer              | Performing Arts    | Medium   | Accra                   | Freelance, Contract            | Mastery of specific dance styles (traditional/contemporary), Choreography | Physical fitness, Rhythm, Expressiveness, Teamwork    | Diploma/BFA in Dance, Apprenticeship          | Dance Companies, Music Video Directors, Cultural Troupes | GHS 2,062-4,159/month (equivalent); Per-project fees | Stable       |

| Theatre Actor | Performing Arts | Low | Accra | Gig-based, Contract | Acting techniques (voice, movement), Memorization, Character analysis | Emotional range, Communication, Resilience | B.A. Theatre Arts, Acting workshops | National Theatre, Private Theatre Companies, Film Producers | Per-production fees (variable) | Stable |

| Music Producer | Performing Arts | Medium | Accra, Kumasi | Freelance, Self-employed | DAW proficiency (e.g., FL Studio, Logic Pro), Sound engineering, Mixing & Mastering | Creativity, Technical ear, Project management, Client relations | Music Production courses, Apprenticeship, Self-taught | Recording Artists, Advertising Agencies, Film Directors | Per-track or Per-project fees (\$200-\$2,000+) | Growing |

| Stage/Technical Crew | Performing Arts | Medium | Accra | Freelance, Contract | Sound board operation, Lighting design, Stage management, Rigging | Problem-solving, Attention to detail, Teamwork, Calm under pressure | Technical theatre training, Apprenticeship | Event Production Companies (Gigkits), Theatres, Festival Organizers | Per-diem or per-event rates (GHS 300-1,000+) | Stable |

## Media and Communication

Ghana's Media and Communication subsector is a vibrant and technologically advancing field, encompassing the traditional pillars of film, television, and radio, alongside a rapidly growing digital content ecosystem. Employment patterns show a mix of formal roles within established media houses and a dominant project-based, freelance culture in production.

Dominant Roles and Employment Types:

Key roles in this subsector include the Film Director, who provides the creative vision for a project, and the TV Producer, who manages the entire production process from concept to delivery.<sup>45</sup> Technical roles are crucial, including the

**Cinematographer** (or Director of Photography), the **Film/Video Editor**, and the **Sound Production Specialist**.<sup>46</sup> In broadcast media, the

**Radio Presenter** and **Broadcast Journalist** remain prominent figures.<sup>47</sup>

The digital realm has given rise to a new class of creators, such as **Podcasters**, **Podcast Editors**, and versatile **Digital Content Creators** who produce material for platforms like YouTube, Instagram, and TikTok.<sup>26</sup>

Employment is bifurcated. Large media conglomerates like the Multimedia Group offer formal, full-time employment for roles like journalists and presenters.<sup>47</sup> However,



the film and television production landscape is overwhelmingly project-based. Production companies like Creative Storm Network and Beverly Boy Productions hire crews—from directors to grips—on a contractual basis for specific projects.<sup>51</sup> The digital content space is almost entirely freelance, with creators monetizing their own channels or taking on gig work for brands.<sup>49</sup>

#### Technical and Professional Competencies:

Technical skills are paramount. Camera operation, including knowledge of different camera systems and lenses, is fundamental for cinematographers. Proficiency in non-linear editing software like Adobe Premiere Pro and Final Cut Pro is a standard requirement for editors.<sup>45</sup> Sound professionals need expertise in audio recording, mixing, and mastering. For digital creators, skills extend to

**social media platform algorithms**, content optimization, and proficiency with mobile editing apps like CapCut.<sup>26</sup> Across the board,

**scriptwriting** and **storytelling** are foundational creative skills. Strong leadership, project management, and budgeting skills are essential for producers and directors.<sup>45</sup>

#### Educational and Career Pathways:

The premier institution for formal training is the National Film and Television Institute (NAFTI), now part of the University of Media, Arts, and Communication (UniMAC-IFT).<sup>53</sup> NAFTI offers internationally recognized, production-based Bachelor of Fine Arts (BFA) degrees in specialized areas such as Film Directing, Television Production, Motion Picture Photography, Animation, and Editing, as well as a B.A. in Broadcast Journalism.<sup>46</sup> These programs provide both theoretical knowledge and hands-on practical training. Many professionals, however, also enter the industry through apprenticeships, starting as production assistants and learning on the job.

#### Market Context and Remuneration:

Key employers include TV and radio stations, film production companies, advertising agencies, and NGOs that commission documentary and communication materials. The National Film Authority (NFA) serves as the primary regulatory body, responsible for licensing, classification, and promoting the industry's growth.<sup>55</sup> Remuneration data shows significant variance. A formal

**TV Producer** role was advertised with a monthly salary of GHS 3,000 - 4,000.<sup>45</sup> The freelance market commands different rates; a 2025 pricing sheet for Accra indicates a

**Video Director** can charge between \$20 and \$250 per hour, while a **Video Editor** can charge between \$60 and \$175 per hour, with a **Cameraman's** rate ranging from \$100 to \$400 per hour.<sup>56</sup> These freelance rates are highly dependent on the project's



budget, the client (local vs. international), and the professional's experience and equipment.

Table 3.3.1: Profile of Key Roles in the Media & Communication Subsector

| Job Title/Role Name     | Subsector Category    | Quantity | Typical Location                       | Employment Type             | Required Technical Skills   | Required Soft Skills  | Typical Qualifications                                 | Potential Employers/Platforms                                | Remuneration Indicator                                      | Demand Trend |
|-------------------------|-----------------------|----------|--|-----------------------------|---|---|--|--|---|--------------|
| Film/TV Producer        | Media & Communication | Medium   | Accra                                  | Contract, Freelance         | Budgeting, Scheduling, Project Management, Fundraising                              | Leadership, Communication, Problem-solving, Negotiation             | BFA TV Production (NAFTI), Business Degree, Experience | Production Companies, TV Stations, Advertising Agencies, NFA | Per-project fee (percentage of budget)                      | Growing      |
| Film Director           | Media & Communication | Medium   | Accra                                  | Contract, Freelance         | Script analysis, Cinematography, Editing, Actor direction                           | Creative vision, Leadership, Decision-making, Communication         | BFA Film Directing (NAFTI), Experience as AD           | Production Companies, Self-initiated projects                | \$20-\$250/hour; Per-project fees                           | Growing      |
| Video Editor            | Media & Communication | High     | Accra, Remote                          | Contract, Freelance, Formal | Adobe Premiere Pro, Final Cut Pro, After Effects, Color Grading, Sound Mixing       | Attention to detail, Storytelling, Patience, Time management        | BFA Editing (NAFTI), Online courses, Portfolio         | Post-production Houses, TV Stations, Freelance Platforms     | \$60-\$175/hour (freelance); GHS 3,000-6,000/month (formal) | High Growth  |
| Broadcast Journalist    | Media & Communication | Medium   | Accra, Kumasi, other regional capitals | Formal (Full-time)          | Interviewing, Scriptwriting, On-air presentation, Research, Media ethics            | Curiosity, Communication, Integrity, Ability to work under pressure | BA Broadcast Journalism (NAFTI), Communications Degree | TV Stations (e.g., Joy News), Radio Stations (e.g., Citi FM) | GHS 2,500-7,000/month                                       | Stable       |
| Digital Content Creator | Media & Communication | High     | Nationwide, Remote                     | Freelance, Self-employed    | Video shooting/editing (mobile & DSLR), SEO, Social Media Analytics, Graphic Design | Creativity, Consistency, Audience engagement, Adaptability          | Self-taught, Digital Marketing courses, Portfolio      | YouTube, Instagram, TikTok, Brands (direct partnerships)     | Variable (Ad revenue, sponsorships, brand deals)            | High Growth  |

## Publishing and Literature

The Publishing and Literature subsector in Ghana is undergoing a significant transformation, balancing the traditions of print with the opportunities of digital distribution. While historically centered on academic publishing, a growing demand

for trade books and local narratives is creating new roles and requiring new skill sets.<sup>14</sup>

#### Dominant Roles and Employment Types:

The core roles in this subsector include the Author, the creative originator of content, and the Publisher, the entity that finances, produces, and distributes the work. Within publishing houses, key roles include Editor and Proofreader, who are responsible for the quality and coherence of the manuscript, and Graphic Designers, who create covers and layouts.<sup>12</sup> A newer role gaining prominence is the

**Literary Agent**, who represents authors and connects them with publishers, a function exemplified by the Ghana-based Accord Literary.<sup>58</sup>

Formal employment is found within established publishing houses like the state-owned Ghana Publishing Company and private educational publishers such as Alpha and Omega Publications in Kumasi.<sup>60</sup> However, a substantial and growing freelance market exists, particularly for

**editors, proofreaders, and ghostwriters**, who find opportunities on platforms like Upwork.<sup>12</sup> Many authors are also self-employed, navigating the path of self-publishing.

#### Technical and Professional Competencies:

For writers and editors, an exceptional command of language, grammar, and style is non-negotiable. Editors need a strong sense of narrative structure and clarity. Proofreaders require meticulous attention to detail to catch errors.<sup>12</sup> For production roles, proficiency in **desktop publishing software** like Adobe InDesign is essential.<sup>62</sup> The British Council's "Publishing Futures" report underscores the emerging need for skills in

**digital publishing**, including e-book formatting, audiobook production, and using digital platforms like WhatsApp and Instagram for marketing and distribution.<sup>14</sup>

#### Educational and Career Pathways:

Formal qualifications often include degrees in Publishing Studies, English, Journalism, or Communications from universities across Ghana. However, practical skill is often valued more than credentials, especially for authors and freelance editors. The emergence of literary agencies like Accord Literary, which specifically aims to mentor and develop African authors writing for young readers, provides a new and crucial pathway to international publication.<sup>58</sup> This highlights a shift from simply producing a manuscript to developing it to meet global standards.

#### Market Context and Remuneration:

Key employers include the Ghana Publishing Company, which handles official government

publications and other materials, and various private publishers focused on the educational and trade markets.<sup>60</sup> Literary agencies and freelance platforms are key facilitators of work. Remuneration data for formal roles is limited, but the freelance market offers some indicators. Freelance

**proofreaders and editors** in Ghana on Upwork list hourly rates ranging from \$5 to \$20, with some experienced editors charging more.<sup>12</sup> Paylab.com suggests a monthly gross salary range of GHS 2,518 - GHS 4,431 for a

**Proofreader** and GHS 2,019 - GHS 4,771 for a **Journalist**, which can be a related role.<sup>35</sup> The primary challenge for the sector remains copyright infringement and high distribution costs, which hinder growth and deter investment.<sup>14</sup>

Table 3.4.1: Profile of Key Roles in the Publishing & Literature Subsector

| Job Title/Role Name           | Subsector Category      | Quantity | Typical Location           | Employment Type               | Required Technical Skills   | Required Soft Skills                                      | Typical Qualifications                               | Potential Employers/Platforms  | Remuneration Indicator  | Demand Trend |
|-------------------------------|-------------------------|----------|----------------------------|-------------------------------|---|---|--|--|---|--------------|
| Editor/Proofreader            | Publishing & Literature | Medium   | Accra, Remote              | Formal (Full-time), Freelance | Impeccable grammar, Stylistic editing, Fact-checking, Adobe Acrobat | Attention to detail, Communication, Critical thinking     | Degree in English/Publishing, Experience             | Publishing Houses, Newspapers, Upwork, Self-employed authors         | GHS 2,500-4,500/month (formal); \$10-25/hr (freelance)        | Growing      |
| Author/Writer                 | Publishing & Literature | High     | Nationwide                 | Self-employed, Freelance      | Creative writing, Research, Storytelling, Self-editing              | Discipline, Resilience, Creativity, Self-motivation       | No formal requirement; talent and manuscript are key | Publishing Houses, Self-publishing platforms (Amazon KDP), Magazines | Royalties (highly variable), Advances, Freelance writing fees | Stable       |
| Graphic Designer (Book Cover) | Publishing & Literature | Medium   | Accra, Kumasi, Remote      | Freelance, In-house           | Adobe Photoshop, Illustrator, InDesign, Typography, Image sourcing  | Creativity, Understanding of market trends, Collaboration | B.A. Graphic Design, Portfolio                       | Publishing Houses, Self-publishing authors, Freelance platforms      | Per-project (\$100-\$500+)                                    | Growing      |
| Literary Agent                | Publishing & Literature | Low      | Accra (globally connected) | Self-employed, Small agency   | Manuscript evaluation, Contract negotiation, Market knowledge       | Networking, Persuasion, Tenacity, Editorial sense         | Experience in publishing, Law or business background | Accord Literary  | Commission-based (15-20% of author's earnings)                | Emerging     |

## Commercial Creative Services

This subsector functions at the intersection of creativity and commerce, providing the strategic and aesthetic services that drive brands, market products, and shape consumer perceptions. It is a highly formalized and urban-centric domain, dominated by advertising agencies and a growing fashion industry, with an increasing demand for specialized digital skills.

#### Dominant Roles and Employment Types:

In advertising and marketing, the hierarchy includes the Creative Director, who sets the overall creative vision for campaigns, the Art Director, responsible for the visual style, and the Copywriter, who crafts the messaging.<sup>7</sup> The

**Digital Marketing Officer/Manager** is a role of growing importance, responsible for executing online campaigns.<sup>7</sup>

In the fashion domain, the central role is the **Fashion Designer**, who conceptualizes and creates garments.<sup>63</sup> They are supported by

**Textile Designers**, who create the fabrics, **Pattern Makers**, **Industrial Sewing Machine Operators**, and **Stylists**, who curate looks for photoshoots and events.

Employment is predominantly formal, with professionals working in-house at advertising agencies, corporate marketing departments, and established fashion houses.<sup>65</sup> However, a robust freelance market is emerging, especially for

**digital marketing specialists, brand strategists, and fashion stylists.**

#### Technical and Professional Competencies:

For advertising roles, strategic thinking, brand development, and compelling copywriting are essential. Art directors and designers need advanced proficiency in the Adobe Creative Suite.<sup>24</sup> Digital marketers must master

**social media analytics, Search Engine Optimization (SEO), and Search Engine Marketing (SEM).**<sup>26</sup> In fashion, technical skills include

**pattern drafting, draping, sewing (both by hand and industrial machine), and textile knowledge.** For textile designers, techniques like **Batik making** are valuable skills that can be learned in specialized workshops.<sup>66</sup> Across the subsector, soft skills like

**collaboration, presentation skills, and the ability to work under tight deadlines** are critical.

#### Educational and Career Pathways:

Formal education is the standard route. Specialized institutions like the Accra International School of Advertising and Design (AisAD) offer portfolio-based programs in advertising production, art direction, and copywriting.<sup>25</sup> Universities offer degrees in Marketing and Communications.<sup>67</sup> For fashion, technical universities in Accra and Kumasi offer HND and Bachelor of Technology degrees in

**Fashion Design and Textiles.**<sup>64</sup> Many designers also gain skills through apprenticeships with established fashion houses.

#### Market Context and Remuneration:

The primary employers are the numerous advertising and creative agencies concentrated in Accra, such as Insel Communications, Origin8, and Tribal House Studios.<sup>65</sup> The fashion industry, while growing, is more fragmented, with a mix of established brands and emerging independent designers. Corporate marketing departments across all sectors (banking, FMCG, telecom) are also major employers of creative service professionals. Remuneration is competitive, especially for senior roles in advertising. A

**Social Media Marketer** role on Jobberman is advertised with a monthly salary of GHS 2,400 - GHS 3,000.<sup>7</sup> While Ghana-specific data for senior roles is scarce, international guides suggest high earning potential for positions like

**Creative Director**, though these figures must be adjusted for the local market context.<sup>70</sup> In fashion, income is a mix of salary (for those employed by houses) and revenue from sales (for independent designers).

Table 3.5.1: Profile of Key Roles in Commercial Creative Services

| Job Title/Role Name       | Subsector Category      | Quantity | Typical Location      | Employment Type               | Required Technical Skills  | Required Soft Skills  | Typical Qualifications                                | Potential Employers/Platforms            | Remuneration Indicator             | Demand Trend |
|---------------------------|-------------------------|----------|-----------------------|-------------------------------|--|---|---|--|------------------------------------|--------------|
| Creative Director         | Advertising & Marketing | Low      | Accra                 | Formal (Full-time)            | Brand strategy, Campaign conceptualization, Art direction, Copywriting | Leadership, Presentation skills, Mentorship, Strategic thinking | Extensive experience in advertising (10+ years)       | Advertising Agencies, Large Corporations | High (GHS 15,000+/month, inferred) | Stable       |
| Art Director              | Advertising & Marketing | Medium   | Accra                 | Formal (Full-time)            | Adobe Creative Suite, Visual conceptualization, Typography, Layout     | Creativity, Collaboration, Communication                        | B.A. Graphic Design/Advertising (AisAD)               | Advertising Agencies, Media Houses       | GHS 5,000-10,000/month             | Growing      |
| Digital Marketing Manager | Advertising & Marketing | High     | Accra, Kumasi, Remote | Formal (Full-time), Freelance | SEO/SEM, Social Media Marketing, Content Strategy, Analytics tools     | Analytical skills, Adaptability, Strategic planning             | Degree in Marketing, Digital Marketing Certifications | All industries, Marketing Agencies       | GHS 4,000-9,000/month              | High Growth  |
| Fashion Designer          | Fashion & Textiles      | Medium   | Accra, Kumasi         | Self-employed, Formal         |  |   |   |  |                                    |              |

(small scale) | Sketching, Pattern drafting, Sewing, Textile knowledge, Draping | Creativity, Trend awareness, Business acumen, Resilience | B.Tech/HND Fashion Design (KsTU, ATU), Apprenticeship | Fashion Houses, Self-owned brand, Textile companies | Variable (sales-based); GHS 2,500-6,000/month (employed) | Growing |  
| Industrial Sewing Operator | Fashion & Textiles | High | Accra | Formal (Full-time) | Operation of industrial sewing machines, Garment construction | Speed, Precision, Attention to detail | Vocational training, On-the-job training | Garment Factories (e.g., HAPPY Program) | GHS 1,000-2,000/month | Stable |

## Cultural Heritage and Tourism

This subsector represents the living soul of Ghana's cultural identity and is a critical driver of the tourism industry. Employment is overwhelmingly informal, community-based, and built upon generations of inherited knowledge and skill. It is a sector where economic activity is deeply intertwined with cultural preservation and expression.

Dominant Roles and Employment Types:

The most prominent roles are those of Traditional Craft Artisans. This includes Kente Weavers, primarily men from the Ashanti and Ewe communities, concentrated in villages like Bonwire <sup>9</sup>;

**Adinkra Cloth Printers** in Ntonso <sup>9</sup>;

**Potters**, traditionally women, though more men are entering the craft <sup>9</sup>;

**Wood Carvers** in villages like Ahwiaa, known for stools and Aku'aba figures <sup>9</sup>; and

**Bead Makers**, particularly the Krobo people known for their recycled glass beads.<sup>9</sup>

Another key role is the

**Cultural Tour Guide**, who interprets historical sites, cultural practices, and heritage for tourists.<sup>75</sup>

**Festival and Cultural Event Managers** are also crucial, especially at the community level.<sup>76</sup>

Employment is almost entirely self-employed or organized within family workshops and community cooperatives.<sup>2</sup> The primary mode of skills acquisition and transfer is the

**apprenticeship model**, where skills are passed from masters to younger generations over many years.<sup>9</sup> Formal employment is rare but can be found within the Ghana Tourism Authority and its affiliated bodies.<sup>77</sup>

Technical and Professional Competencies:

For artisans, the core competency is the mastery of a specific traditional craft technique. This is not just a technical skill but a deep, embodied knowledge of materials, patterns, and cultural symbolism.<sup>9</sup> For Kente weavers, this involves operating complex looms; for Adinkra printers, it's carving stamps and preparing natural dyes; for wood carvers, it's the skilled use of traditional tools.<sup>74</sup> For

**Cultural Tour Guides**, essential skills include deep historical and cultural knowledge, compelling **storytelling**, fluency in English and local languages, and strong interpersonal skills.<sup>75</sup>

Educational and Career Pathways:

The dominant pathway is informal apprenticeship. A bead maker, for example, may spend several years as an apprentice to master intricate designs.<sup>9</sup> Formal education is largely absent from the core craft-making process. For tour guides, while some private operators like Ashanti African Tours provide in-house training and emphasize the expertise of their guides, there is no standardized national certification program apparent from the sources.<sup>75</sup> The government, through MoTAC, promotes these activities through Community-Based Ecotourism (CBET) initiatives, which include skills training for communities as a key strategy.<sup>80</sup>

Market Context and Remuneration:

Artisans traditionally sell their wares in local markets, at roadside stalls, and directly from their craft villages, which are major tourist attractions.<sup>9</sup> A significant shift is occurring with the rise of

**online marketplaces**. Platforms like Ololo Express, Etsy, and Tribalgh provide Ghanaian artisans with direct access to a global customer base, allowing them to sell products like Kente cloth, Adinkra textiles, and beads internationally.<sup>82</sup> Tour guides are employed by tour companies or work as freelancers, with their work being highly seasonal and dependent on tourist flows, particularly related to events like the "Year of Return".<sup>75</sup>

Remuneration is highly variable and directly tied to sales and tourism. Prices for crafts on online platforms give an indication: a piece of Kente cloth can range from \$110 to \$350 depending on size and complexity, while a vintage Adinkra cloth might be listed for around \$95.<sup>83</sup> The income of these artisans is directly impacted by factors like the cost of raw materials (e.g., imported cotton for Kente) and competition from mass-produced imitations.<sup>71</sup>



Table 3.6.1: Profile of Key Roles in Cultural Heritage & Tourism

| Job Title/Role Name | Subsector Category | Quantity | Typical Location                | Employment Type                                | Required Technical Skills   | Required Soft Skills                                    | Typical Qualifications        | Potential Employers/Platforms                                | Remuneration Indicator                  | Demand Trend                  |
|---------------------|--------------------|----------|---------------------------------|--|---|---|-------------------------------|--|---|-------------------------------|
| Kente Weaver        | Cultural Heritage  | Medium   | Bonwire (Ashanti), Volta Region | Self-employed, Community cooperative, Informal | Hand-weaving on traditional loom, Pattern design, Color theory        | Patience, Precision, Physical stamina                   | Multi-year Apprenticeship     | Local markets, Tourist centers, Online (Etsy, YEVU, MGkente) | Variable (per piece, e.g., \$100-\$350) | Stable (threatened by prints) |
| Adinkra Printer     | Cultural Heritage  | Low      | Ntonso (Ashanti)                | Self-employed, Community cooperative, Informal | Stamp carving (calabash), Natural dye preparation, Stamping technique | Artistic skill, Knowledge of symbols, Precision         | Apprenticeship                | Local markets, Tourist centers, Online (Tribalgh)            | Variable (per cloth, e.g., \$95+)       | Stable                        |
| Wood Carver         | Cultural Heritage  | Medium   | Ahwiaa (Ashanti)                | Self-employed, Informal                        | Wood carving techniques, Tool mastery, Finishing                      | Creativity, Knowledge of cultural forms (stools, masks) | Apprenticeship                | Craft villages, Tourist markets, Online (Novica, Etsy)       | Variable (per piece, e.g., \$50-\$250)  | Stable                        |
| Cultural Tour Guide | Cultural Tourism   | Medium   | Accra, Cape Coast, Kumasi       | Freelance, Employed by tour company            | Deep historical/cultural knowledge, Storytelling, Public speaking     | Interpersonal skills, Adaptability, Language skills     | In-house training, Experience | Tour Operators (Ashanti African Tours), Heritage Sites       | Per-diem/tour fees (GHS 300-800)        | Growing (event-driven)        |
| Bead Maker (Krobo)  | Cultural Heritage  | Medium   | Krobo areas (Eastern Region)    | Self-employed, Family business, Informal       | Recycled glass processing, Mold making, Firing in kilns               | Patience, Design skills, Attention to detail            | Multi-year Apprenticeship     | Local markets, Online (Etsy, The Bead Chest), Exporters      | Variable (per strand/piece)             | Growing                       |

## Architecture and Design

The Architecture and Design subsector in Ghana is a field that blends technical expertise with aesthetic and cultural considerations. While less visible in mainstream creative industry discussions, it plays a crucial role in shaping the nation's physical environment. Opportunities are largely concentrated in urban areas and require high levels of formal training.

**Dominant Roles and Employment Types:**

The primary roles in this subsector are the licensed Architect, who designs buildings and



oversees their construction, and the Interior Designer, who focuses on the planning and furnishing of interior spaces.<sup>7</sup> Related roles include

**Draughtsman**, who produces technical drawings and plans, **Industrial/Product Designer**, and **Landscape Architect**.<sup>7</sup> Employment is typically formal, with professionals working in architectural firms, construction companies, and real estate development firms. Freelancing is also common, especially for interior design and smaller architectural projects.

Technical and Professional Competencies:

A high level of technical proficiency is required. This includes mastery of Computer-Aided Design (CAD) software such as AutoCAD and Revit, as well as 3D modeling and visualization tools.<sup>18</sup> A deep understanding of

**spatial planning, building materials, construction methods, and local building codes** is essential for architects.<sup>7</sup> Interior designers need skills in color theory, materials selection, and furniture design. Increasingly, knowledge of

**sustainable design practices and culturally informed design approaches** is becoming a key differentiator. Strong project management, client communication, and problem-solving skills are vital for all roles.

Educational and Career Pathways:

Entry into these professions requires extensive formal education. A professional degree in Architecture from an accredited university, such as Kwame Nkrumah University of Science and Technology (KNUST), followed by a licensing examination, is the standard pathway for architects. Interior design and product design can be pursued through degree or diploma programs at various technical universities and specialized design schools like AsanSka University College of Design and Technology.<sup>86</sup>

Market Context and Remuneration:

The main employers are architectural firms, engineering consultancies, large construction companies, and real estate developers, which are predominantly located in Accra and other major cities. Government agencies involved in public works and urban planning also employ architects. The demand for architectural and design services is closely tied to the health of the construction and real-estate sectors. Data on remuneration is sparse in the available sources, indicating a need for more targeted research in this area. However, given the high educational requirements and professional licensing, salaries are expected to be in the mid to high tier of the professional job market.

Table 3.7.1: Profile of Key Roles in the Architecture & Design Subsector

| Job Title/Role Name | Subsector Category | Quantity | Typical Location | Employment Type | Required Technical Skills | Required Soft Skills | Typical Qualifications | Potential Employers/Platforms | Remuneration Indicator | Demand Trend |
|---------------------|--------------------|----------|------------------|-----------------|---------------------------|----------------------|------------------------|-------------------------------|------------------------|--------------|
|---------------------|--------------------|----------|------------------|-----------------|---------------------------|----------------------|------------------------|-------------------------------|------------------------|--------------|

| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

| Architect | Architecture & Design | Medium | Accra, Kumasi | Formal (Full-time), Self-employed | AutoCAD, Revit, 3D Modeling, Building codes, Project management | Problem-solving, Spatial reasoning, Communication, Leadership | Professional Degree in Architecture + License | Architectural Firms, Construction Companies, Real Estate Developers | High (GHS 8,000-20,000+/month) | Stable (linked to construction) |

| Interior Designer | Architecture & Design | Medium | Accra | Formal (Full-time), Freelance | Spatial planning, Color theory, CAD, 3D visualization, Material sourcing | Creativity, Client management, Attention to detail | Degree/Diploma in Interior Design, Portfolio | Design Firms, Furniture Companies, Real Estate Developers, Freelance | GHS 3,500-8,000/month; Project fees | Growing |

| Draughtsman | Architecture & Design | Medium | Accra, Takoradi | Formal (Full-time), Contract | AutoCAD, Technical drawing, Understanding of building plans | Precision, Attention to detail, Communication | Diploma/Certificate in Draughtsmanship | Architectural/Engineering Firms, Construction Companies | GHS 2,000-4,500/month | Stable |

## Cultural Institutions and Education

This subsector forms the institutional backbone of the Orange Economy, responsible for the preservation, interpretation, and transmission of cultural heritage and creative skills. Employment is concentrated in public and private institutions, including museums, galleries, and schools, and requires a blend of specialized knowledge and pedagogical skill.

Dominant Roles and Employment Types:

Key roles within cultural institutions include the Museum/Gallery Curator, who is responsible for acquiring, managing, and interpreting collections, and the Archivist, who preserves historical records.<sup>87</sup>

**Exhibition Designers** create the physical layout and visitor experience for shows. In the education sphere, the primary role is the **Arts Educator** or **Creative Arts Teacher**, who works at all levels from basic school to tertiary institutions.<sup>88</sup>

**Workshop Facilitators** lead short-term, practical training sessions in specific skills, such as batik making.<sup>66</sup>

Employment is largely formal, within government-funded institutions like the Ghana Museums and Monuments Board (GMMB), the Centres for National Culture, and the

public education system.<sup>2</sup> Private galleries like the Nubuke Foundation and La Foundation for the Arts, as well as private schools, are also significant employers.<sup>91</sup>

Technical and Professional Competencies:

Curators require deep knowledge in their specific field (e.g., art history, archaeology), along with skills in collection management, research, and writing. Archivists need expertise in preservation and cataloging. Arts educators must possess not only artistic skill but also strong pedagogical skills, curriculum development knowledge, and classroom management abilities. A key requirement for teachers in the formal system is the National Teaching Council (NTC) license.<sup>89</sup>

Educational and Career Pathways:

A career in this subsector typically requires formal tertiary education. Roles like Curator or Archivist often require postgraduate degrees (Master's or PhD) in fields like Museum and Heritage Studies or Art History. For Creative Arts Teachers, a B.A. in Art Education or a Diploma in Art Education is the standard qualification.<sup>89</sup> The University of Education, Winneba (UEW), is a leading institution for training arts educators, offering programs like the B.A. in Creative Arts and Design Education, designed specifically for implementing the new national curriculum.<sup>28</sup>

Market Context and Remuneration:

The government is the largest employer through the Ghana Education Service, GMMB, and the National Commission on Culture. Private galleries and cultural NGOs offer a smaller but growing number of opportunities. The demand for Creative Arts teachers is stable and driven by the national educational curriculum. Remuneration for public sector roles is determined by government salary scales, which are not detailed in the provided sources but are generally modest. Roles in private institutions may offer more competitive salaries depending on the organization's funding and scale.

Table 3.8.1: Profile of Key Roles in Cultural Institutions & Education

| Job Title/Role Name    | Subsector Category    | Quantity | Typical Location      | Employment Type     | Required Technical Skills  | Required Soft Skills                                    | Typical Qualifications                      | Potential Employers/Platforms                     | Remuneration Indicator                | Demand Trend |
|------------------------|-----------------------|----------|-----------------------|---------------------|--|---|---|---|---------------------------------------|--------------|
| Creative Arts Teacher  | Cultural Education    | High     | Nationwide            | Formal (Full-time)  | Pedagogy, Curriculum knowledge, Artistic skill (visual/performing)       | Patience, Communication, Classroom management           | B.A./Diploma in Art Education + NTC License | Ghana Education Service, Private Schools          | GHS 2,000-4,000/month (Public Sector) | Stable       |
| Museum/Gallery Curator | Cultural Institutions | Low      | Accra, Cape Coast     | Formal (Full-time)  | Art history/heritage knowledge, Research, Writing, Collection management | Critical thinking, Organizational skills, Communication | M.A./M.Phil in Museum Studies, Art History  | GMMB, National Museum, Private Galleries (Nubuke) | GHS 3,500-7,000/month                 | Stable       |
| Workshop Facilitator   | Cultural Education    | Medium   | Accra, Craft Villages | Freelance, Contract | Mastery of a specific craft (e.g., batik, pottery), Teaching skills      | Patience, Public  |   |   |                                       |              |

speaking, Interpersonal skills | Experience, Practitioner status | Tourism companies, Cultural Centers, NGOs | Per-workshop fee (\$50-\$200) | Growing |  
| Arts Lecturer | Cultural Education | Low | Winneba, Kumasi, Accra | Formal (Full-time) | Advanced subject matter expertise, Academic research, Lecturing | Mentorship, Critical analysis, Communication | M.Phil/PhD in a creative discipline | Universities (UEW, KNUST, UG) | Public Sector University Scales | Stable |

## Emerging Digital Creative Roles

A new frontier of creative employment is rapidly emerging in Ghana, driven entirely by the proliferation of digital technologies and social media. These roles are characterized by their digital-native nature, entrepreneurial spirit, and global connectivity. Employment is almost exclusively freelance or consists of self-employed individuals building personal brands.

Dominant Roles and Employment Types:

The most visible emerging role is the Social Media Content Creator/Influencer. These individuals build audiences on platforms like Instagram, TikTok, and YouTube and monetize their influence through brand partnerships and advertising.<sup>94</sup> Closely related is the **Digital Marketing Specialist**, a freelancer who provides targeted online marketing services to businesses.<sup>26</sup> The growth of e-learning has created opportunities for

**Online Course Developers**, who create and sell educational content on various platforms.<sup>16</sup> The shift to online events has also created a need for

**Virtual Event Managers and Producers**. Finally, the global interest in blockchain technology has opened a niche for **NFT (Non-Fungible Token) Artists** and other tech-enabled creative service providers.<sup>22</sup>

Employment in this domain is rarely formal. It is a world of **freelancers, gig workers, and solo entrepreneurs** who leverage digital platforms to build their own businesses and client bases.

Technical and Professional Competencies:

Success in these roles requires a unique blend of creative and technical skills. Mastery of social media platforms, including an understanding of their algorithms and content formats (e.g., Instagram Reels, TikTok videos), is fundamental. Proficiency in mobile-first video creation and editing tools (like CapCut) and basic graphic design (using tools like Canva) is

essential.26

**Community management, digital marketing analytics, and SEO** are critical for growing an online presence. For online educators, familiarity with e-learning platforms is necessary. NFT artists need to understand blockchain technology, crypto wallets, and NFT marketplaces. The most important soft skill across all these roles is **adaptability**, as the digital landscape is in a constant state of flux.

#### Educational and Career Pathways:

Formal educational pathways for these roles are still nascent. The vast majority of practitioners are self-taught, learning through online tutorials, short courses, and experimentation. Some forward-thinking institutions like AisAD are beginning to integrate digital media and social media advertising into their curricula.<sup>25</sup> Success is almost entirely determined by the quality of one's online portfolio and demonstrated results (e.g., follower count, engagement rates, campaign ROI) rather than formal credentials.

#### Market Context and Remuneration:

The "employers" in this space are often brands seeking to engage in influencer marketing, small businesses needing digital marketing support, or a global audience of consumers paying for content or courses. Platforms like Collabstr connect brands directly with Ghanaian influencers.<sup>94</sup> Remuneration is highly performance-driven and varies dramatically. An influencer's fee is tied to their follower count and engagement; on Collabstr, rates for Accra-based influencers range from \$50 to over \$180 per post.<sup>94</sup> Digital marketers may charge hourly rates or project fees. The income potential is theoretically high but also precarious, with no job security or benefits. Demand for these roles is in a state of high growth, driven by the increasing shift of marketing budgets to digital and influencer channels.

Table 3.9.1: Profile of Key Emerging Digital Creative Roles

| Job Title/Role Name          | Subsector Category | Quantity | Typical Location                  | Employment Type          | Required Technical Skills  | Required Soft Skills                                       | Typical Qualifications   | Potential Employers/Platforms                             | Remuneration Indicator          | Demand Trend |
|------------------------------|--------------------|----------|-----------------------------------|--------------------------|--|--|--|---|---------------------------------|--------------|
| Social Media Influencer      | Emerging Digital   | High     | Accra, Kumasi (location flexible) | Self-employed, Freelance | Content creation (video/photo), Platform mastery (IG, TikTok), Audience engagement | Authenticity, Consistency, Communication, Entrepreneurship | Proven online presence/portfolio   | Brands, Marketing Agencies, Collabstr, YouTube, Instagram | Variable (\$50-\$500+ per post) | High Growth  |
| Digital Marketing Specialist | Emerging Digital   | High     | Remote, Accra                     | Freelance, Contract      | SEO/SEM, PPC, Email marketing, Social media advertising, Analytics                 | Analytical, Strategic, Adaptable, Results-oriented         | Digital Marketing Certifications (Google, Meta), Experience   SMEs, Startups, Agencies, Upwork, Fiverr | Project-based (GHS 2,000-10,000+), Retainers              |                                 | High Growth  |
| Online Course Creator        | Emerging Digital   | Low      | Remote                            | Self-employed            | Curriculum   |  |  |   |                                 |              |

design, Video production, E-learning platform use (e.g., Teachable) | Subject matter expertise, Public speaking, Marketing | Expertise in a specific field | Self-hosted, Udemy, Skillshare, 'timbuktoo' | Variable (sales-based) | Emerging |  
| Virtual Event Producer | Emerging Digital | Low | Remote | Freelance, Contract | Live streaming software (OBS), Platform management (Zoom, etc.), Technical troubleshooting | Organization, Calm under pressure, Problem-solving | Experience in events/live production | Corporations, NGOs, Conference Organizers | Per-event fee (\$500-\$2,000+) | Growing |

## Geographic Dynamics and Regional Opportunity Mapping

The employment landscape of Ghana's Orange Economy is not monolithic; it is a varied tapestry with distinct patterns of specialization, opportunity, and challenge across different geographic regions. The analysis reveals a strong concentration of formal and digital creative industries in major urban centers, particularly Accra, while secondary cities and rural areas serve as vital hubs for traditional crafts and community-based cultural tourism. The rise of remote work is beginning to blur these lines, creating new possibilities for creatives regardless of their physical location.

### Major Urban Centers: The Engines of the Formal Creative Economy

**Accra:** The Greater Accra Region stands as the undisputed epicenter of Ghana's creative economy. It is the headquarters for the vast majority of the nation's media houses, advertising agencies, publishing companies, and cultural institutions.<sup>7</sup> Job portals like Jobberman show a heavy concentration of formal creative roles in Accra, including Multimedia Artist, Creative Director, Social Media Manager, and TV Producer.<sup>7</sup> The city is home to key institutions like the National Film and Television Institute (NAFTI), the National Theatre, and major private galleries such as the Nubuke Foundation, making it the primary hub for formal training and exhibition.<sup>5</sup> Accra also leads in the emerging digital creative sector, with a high density of digital marketing agencies, content creators, and tech-savvy freelancers serving both local and international clients.<sup>26</sup> The presence of development partners and international organizations further solidifies its position as the nerve center for policy, funding, and global collaboration.<sup>51</sup>

**Kumasi:** The Ashanti Regional capital, Kumasi, presents a unique creative ecosystem that blends a strong foundation in traditional arts with a growing contemporary scene. It is renowned as the heartland of Ashanti crafts, with surrounding villages like Bonwire (Kente), Ntonso (Adinkra), and Ahwiaa (wood carving) forming a critical cluster of heritage-based employment.<sup>9</sup> Kumasi is also a significant market for formal creative jobs outside of Accra, with listings for roles like

**Graphic Designer** for companies in sectors such as agribusiness.<sup>7</sup> The city is home to the Faculty of Creative Arts and Technology at Kumasi Technical University (KsTU) and the cultural hub of the Centre for National Culture, fostering both formal training and artistic practice.<sup>2</sup> This duality makes Kumasi a vital bridge between Ghana's traditional and modern creative economies.

**Takoradi, Tamale, and Cape Coast:** These regional capitals represent important secondary hubs with their own distinct specializations. **Takoradi**, in the Western Region, leverages its coastal location for tourism-related cultural activities, with job opportunities concentrated in the hospitality sector and events.<sup>98</sup>

**Tamale**, the capital of the Northern Region, is a key center for northern cultural initiatives and serves as a base for NGOs and development projects that often have a cultural component.<sup>99</sup>

**Cape Coast**, with its UNESCO World Heritage Sites (Cape Coast and Elmina Castles), is the focal point for heritage tourism and historical interpretation, creating demand for cultural tour guides and site management personnel.<sup>100</sup> While formal creative job listings in these cities are less frequent than in Accra or Kumasi, they play a crucial role in the regional distribution of cultural employment.

### **Rural and Community-Based Opportunities: The Roots of Cultural Capital**

Beyond the urban centers, a significant portion of creative employment is rooted in rural and community-based initiatives. These opportunities are primarily in the domains of traditional craft production and cultural ecotourism.

**Craft Villages:** As previously noted, specific villages have become synonymous with certain crafts, forming micro-economies based on artisanal production. These include



**Bonwire** for Kente weaving, **Ntonso** for Adinkra stamping, **Ahwiaa** for wood carving, **Kurofuforum** for brass work, and the Krobo area for bead making.<sup>9</sup> In these communities, the craft is not just a job but a way of life, with skills and employment passed down through generations via apprenticeship.<sup>9</sup> The entire community often participates in the value chain, from sourcing raw materials to production and sales.

**Community-Based Ecotourism (CBET):** The government of Ghana actively promotes CBET as a tool for sustainable development and inclusive growth.<sup>76</sup> This model creates employment in rural areas by integrating cultural experiences into tourism. Examples include the

**Boabeng-Fiema and Tafi Atome Monkey Sanctuaries**, where tourism thrives alongside traditional beliefs and local communities are involved in governance and benefit-sharing.<sup>80</sup> These initiatives create jobs for

**local tour guides, hospitality providers, and artisans** who sell crafts to visitors. The strategy involves integrating traditional dance, crafts, and storytelling into the visitor experience, thereby creating a market for local cultural expressions.<sup>76</sup>

## **Remote and Digital Opportunities: Transcending Geography**

The rise of the digital economy is creating a paradigm shift, enabling Ghanaian creatives to access markets and employment opportunities regardless of their physical location. This is most evident in the freelance sector. A **Graphic Designer** in Ho, a **Video Editor** in Tamale, or a **Writer** in Cape Coast can now serve clients in Accra, Lagos, London, or New York through platforms like Upwork, Fiverr, and Twine.<sup>11</sup>

This trend has several important implications. It allows for a more equitable distribution of economic opportunities, potentially slowing the creative brain drain from regional areas to Accra. It also exposes regional creatives to global standards and trends, fostering skills development. Roles that are inherently digital, such as **Social Media Coordinator**, **Digital Marketing Specialist**, and **UI/UX Designer**, are increasingly advertised as "Remote (Work From Home)" on job portals.<sup>7</sup> This geographic flexibility represents a significant growth vector for the entire creative economy, empowering individual creatives and potentially fostering the development of new, digitally-enabled creative clusters outside the traditional urban hubs.



Table 4.1: Comparative Analysis of Regional Creative Hubs by Dominant Subsectors and Opportunity Volume

| Region/City                                  | Dominant Subsectors   | Opportunity Volume | Key Characteristics  | Key Institutions/Sites   |
|--|---|--------------------|--|--|
| Accra (Greater Accra)                        | Media & Communication, Commercial Creative Services, Digital Arts, Publishing | High               | National hub for formal employment, policy, finance, and digital innovation. Highest concentration of agencies, media houses, and tech startups. | MoTAC, NFA, NAFTI, National Theatre, Nubuke Foundation, Major Job Portals                    |
| Kumasi (Ashanti)                             | Cultural Heritage (Crafts), Visual & Digital Arts, Performing Arts            | Medium             | Dual ecosystem: center for traditional Ashanti crafts and a growing contemporary arts and formal job market.                                     | KsTU Faculty of Creative Arts, Centre for National Culture, Craft Villages (Bonwire, Ntonso) |
| Cape Coast (Central)                         | Cultural Heritage (Tourism), Cultural Education                               | Low-Medium         | Hub for heritage tourism focused on the history of the slave trade. Strong educational presence.   | Cape Coast & Elmina Castles (UNESCO), University of Cape Coast                               |
| Takoradi (Western)                           | Cultural Tourism, Event Entertainment   | Low                | Coastal hub with opportunities linked to hospitality, tourism, and local festivals.  | Hotels, Resorts, Event Venues  |
| Tamale (Northern)                            | Cultural Heritage, Development/NGO Media                                      | Low                | Northern regional hub for cultural initiatives, base for development partners and NGOs with cultural projects.                                   | Centre for National Culture, NGO offices   |
| Rural Craft Villages (e.g., Bonwire, Ntonso) | Cultural Heritage (Craft Production)  | High (localized)   | Hyper-specialized micro-economies based on traditional, informal, apprenticeship-driven craft production.  | Community Cooperatives, Local Markets, Online Marketplaces                                   |
| Remote/Digital                               | Digital Arts, Media & Comms, Publishing, Emerging Digital Roles               | Growing            | Geographically independent opportunities accessed via online platforms. Driven by freelance and gig work.  | Upwork, Fiverr, Twine, Collabstr, Remote Job Boards  |

## The Freelance and Digital Frontier: Ghana's Gig Economy

A significant and rapidly expanding segment of Ghana's Orange Economy operates on the digital frontier, driven by a dynamic freelance and gig-based workforce. This ecosystem, powered by both international and local online platforms, allows individual creatives to bypass traditional employment structures and offer their skills as services to a global market. This section analyzes the profile of the Ghanaian creative freelancer, the types of services offered, common pricing strategies, and the

emerging digital-native roles that are defining the future of creative work.

## Profiling the Ghanaian Creative Freelancer

The Ghanaian creative freelancer is typically a young, digitally-savvy professional who leverages online platforms to find work, manage projects, and receive payments. Analysis of profiles on platforms like Upwork, Ghanajob.com's CV library, and Twine reveals a deep talent pool with strong technical skills, particularly in the visual and digital arts.<sup>11</sup> These individuals often possess formal qualifications, such as a Bachelor's degree or HND from institutions like KNUST or Accra Technical University, but supplement this with self-taught skills and a strong, curated online portfolio.<sup>18</sup>

Motivation for entering the gig economy is twofold. For many, it offers a pathway to employment in a competitive job market. For others, it provides autonomy, flexibility, and the potential for higher earnings by accessing international clients. However, freelancers face unique challenges, including intense global competition, the need to constantly market themselves, the volatility of project-based income, and the high commission fees charged by platforms (Fiverr, for instance, takes a 20% commission on all earnings).<sup>102</sup>

## Common Services and Pricing Strategies

The most common creative services offered by Ghanaian freelancers fall into several key categories:

145. **Graphic and Visual Design:** This is the largest category. Services range from **logo design, flyer design, and branding packages** to **photo editing** and **YouTube thumbnail creation**.<sup>11</sup> Platforms like Upwork and the local marketplace 15ghana.com are replete with designers offering these services.<sup>11</sup>
146. **Writing, Editing, and Translation:** There is a significant market for **proofreading, content editing, ghostwriting, and translation**. Freelancers on Upwork showcase experience editing a wide range of materials, from SEO content to non-fiction books.<sup>12</sup>

147. **Video and Animation:** Services include **video editing, motion graphics, 2D/3D animation, and concept art**. This talent is visible in the portfolios of animators and illustrators listed in directories and on freelance sites.<sup>18</sup>
148. **Digital Marketing:** Freelancers offer specialized services in **social media management, content creation, and SEO**, catering to businesses looking to strengthen their online presence.<sup>26</sup>

Pricing strategies are highly dependent on the platform and the freelancer's experience. On global platforms like Fiverr and Upwork, Ghanaian freelancers often adopt a strategy of **starting with low prices** to attract initial clients and build a portfolio of positive reviews. A writer on Fiverr might start by charging \$35 for a 1,000-word article, with the goal of gradually increasing the price to \$200 or more as their reputation grows.<sup>102</sup> Hourly rates on Upwork for Ghanaian graphic designers and proofreaders can range from as low as \$3-\$5 to \$20 or more per hour.<sup>11</sup> Local platforms like Twine suggest project-based price ranges, with a mid-level artist potentially earning GHS 2,500 - GHS 5,000 per project.<sup>34</sup> This indicates a market where entry-level pricing is used to overcome the barrier of being in a developing economy, with a clear path to higher earnings based on demonstrated quality and reliability.

## Emerging Digital-Native Roles

Beyond traditional freelance services, a new category of digital-native creative roles is gaining prominence, built around the creator and influencer economies.

149. **Social Media Influencer:** This is perhaps the most visible new role. Influencers build a personal brand and a dedicated following on platforms like Instagram and TikTok, then partner with brands for marketing campaigns. Platforms like **Collabstr** act as marketplaces, connecting brands with Ghanaian influencers in Accra and beyond.<sup>94</sup> These creators are essentially one-person media companies, responsible for content strategy, production, and community management. Remuneration is directly tied to audience size and engagement, with Collabstr showing rates from \$50 for micro-influencers to \$180 or more for those with larger followings.<sup>94</sup>
150. **Online Educator/Course Creator:** Leveraging their expertise, some creatives are becoming online educators. The UNDP's 'timbuktoo' initiative supports

creative entrepreneurs in developing viable business concepts, which can include creating and selling online courses in areas like design, music, or cultural heritage.<sup>16</sup> This allows for the monetization of knowledge on a scalable, global level.

151. **Virtual Event Producer:** The global shift towards online events has created a demand for professionals who can manage the technical and creative aspects of virtual conferences, workshops, and performances. This role requires a blend of live production knowledge and digital platform proficiency. Training courses in **Event Planning and Management**, which now include virtual components, are available to Ghanaians, though often at a high cost.<sup>105</sup>

These emerging roles signify a fundamental shift in creative work. They are less about providing a service to a single client and more about building a community, a personal brand, and a direct-to-audience business model. Success in these fields depends not just on creative talent but on a sophisticated understanding of digital marketing, audience analytics, and platform monetization strategies.

Table 5.1: Profile of Top Freelance Creative Services from Ghana on International Platforms | Service | Primary Platform(s) | Typical Pricing Structure | Indicative Rates/Prices | Key Skills Required |

| :--- | :--- | :--- | :--- | :--- |

| Graphic Design (Logo, Flyer, etc.) | Upwork, Fiverr, 15ghana.com | Hourly Rate, Per-Project Fee | \$5 - \$20/hr (Upwork); Starting at GHS 50 (15ghana); From \$50/project (Upwork) | Adobe Creative Suite, Canva, Branding principles, Client communication |

| Writing & Proofreading | Upwork, Fiverr | Per Word, Hourly Rate, Per-Project Fee | \$10 - \$30/hr (Upwork); \$35-\$200 per 1000 words (Fiverr) | Exceptional grammar, Editing standards, SEO writing, Research |

| Video Editing | Upwork, Fiverr, Twine | Hourly Rate, Per-Project Fee | \$15 - \$60+/hr; Project-based | Adobe Premiere Pro, Final Cut Pro, Motion Graphics, Storytelling |

| 2D/3D Animation | Upwork, Ghanajob.com (CVs) | Per-Project Fee, Per Second of Animation | Highly variable (\$500 - \$10,000+ per project) | Blender, Maya, After Effects, Character design, Storyboarding |

| Social Media Management | Upwork, Social Media Groups | Monthly Retainer, Hourly Rate | \$200 - \$1,500+/month | Content creation, Scheduling tools (Hootsuite), Analytics, Community engagement |

| Voiceover/Narration | Fiverr, Upwork | Per Word, Per Finished Hour | \$100 - \$400 (per project, inferred) | Clear diction, Vocal control, Home studio setup, Audio editing |

## Strategic Insights and Actionable Recommendations

The comprehensive survey of Ghana's Orange Economy reveals a sector of immense potential, driven by a confluence of cultural richness, youthful energy, and digital opportunity. However, to translate this potential into sustainable and inclusive economic growth, a coordinated and strategic approach is required from all stakeholders. This concluding section synthesizes the report's findings into a set of targeted, actionable recommendations for workforce development, policy and governance, industry and investment, and the fostering of robust creative ecosystems.

### **For Workforce Development: Bridging the Talent-to-Market Gap**

A recurring theme throughout the analysis is the disconnect between raw creative talent and the commercial skills required to build a sustainable career. While Ghana's educational institutions and informal apprenticeship systems produce technically proficient artists, designers, and performers, there is a critical deficit in entrepreneurial capabilities.

**152. Recommendation 1: Integrate Entrepreneurship into All Creative**

**Curricula.** Universities like UEW, KNUST, and NAFTI, as well as technical and vocational schools, must embed mandatory modules in business management, financial literacy, marketing, and intellectual property rights into all creative arts programs. The goal is to produce graduates who are not just skilled creators but also savvy entrepreneurs capable of pricing their work, negotiating contracts, and building a brand. The need for these skills is evident in the struggles faced by youth and the success of freelancers who master them.<sup>3</sup>

**153. Recommendation 2: Establish Post-Graduate Creative Enterprise**

**Incubators.** Development partners like the UNDP and the World Bank, in collaboration with local institutions, should fund and support the creation of dedicated incubators for creative startups. Modeled on initiatives like the 'timbuktoo' program, these incubators would provide seed funding, dedicated mentorship, co-working space, and structured training in business development for promising creative entrepreneurs, helping them transition from concept to market-ready enterprise.<sup>16</sup>

**154. Recommendation 3: Promote Digital Literacy and Emerging Skills.** Training

programs must address the skills required for the emerging digital creative economy. This includes workshops and online courses in social media marketing, SEO, e-commerce management, virtual event production, and even introductory concepts of blockchain and NFTs. This will equip creatives to leverage new digital platforms and monetization models effectively.<sup>4</sup>

## **For Policy and Governance: Creating an Enabling Environment**

Effective government policy is essential to de-risk the creative sector, attract investment, and ensure its benefits are widely shared. The launch of the UNESCO Culture|2030 Indicators provides the perfect opportunity to build a new generation of evidence-based policies.

### **155. Recommendation 4: Leverage UNESCO Data to Secure Budgetary**

**Allocation.** MoTAC and its agencies must use the forthcoming data from the Culture|2030 framework to make a robust, quantitative case to the Ministry of Finance for increased and ring-fenced budgetary allocations for the creative sector. This data will provide the evidence needed to justify investments in infrastructure, training, and institutional support.<sup>5</sup>

### **156. Recommendation 5: Strengthen and Modernize Intellectual Property (IP)**

**Frameworks.** The government, through the Copyright Office and the NFA, must prioritize the strengthening of IP protection and enforcement. This includes public education campaigns on the importance of copyright, streamlining the royalty collection and distribution process managed by bodies like GHAMRO to ensure transparency and fairness, and updating regulations to address digital piracy and the complexities of online content.<sup>4</sup>

### **157. Recommendation 6: Develop a National Creative Industries Fund.** To address the critical challenge of access to finance, the government should explore the establishment of a dedicated Creative Industries Fund. This fund could be seeded with public money and augmented by contributions from development partners and the private sector. It would offer a mix of grants, low-interest loans, and venture capital specifically tailored to the needs of creative businesses, which are often overlooked by traditional banks.<sup>3</sup>

## For Industry and Investment: Catalyzing Growth and Professionalization

Industry associations and private investors have a pivotal role to play in professionalizing the sector and driving commercial success.

**158. Recommendation 7: Evolve the Role of Professional Associations.**

Associations like GAVA, FIPAG, and GAFTA should expand their mandates beyond advocacy. They should actively facilitate structured mentorship programs, create industry-specific job boards, organize networking events that connect creators with buyers and investors, and develop codes of professional practice and standardized contracts to protect their members.<sup>20</sup>

**159. Recommendation 8: Incentivize Private Sector Investment in Creative Infrastructure.** The government should create tax incentives and other policy instruments to encourage private investment in critical creative infrastructure, such as state-of-the-art film studios, post-production facilities, performance venues, and high-speed internet connectivity in creative clusters.

**160. Recommendation 9: Promote Public-Private Partnerships (PPPs) for Value Chain Development.** Investment should be directed towards developing the full value chain for high-potential subsectors. For example, a PPP could focus on the traditional textile industry, investing in sustainable cotton farming, providing modern looms and training to weavers in Bonwire, and establishing a global e-commerce platform and brand for authentic, handwoven Kente, complete with a certification of authenticity to combat imitations.<sup>71</sup>

## For Fostering Creative Ecosystems: Ensuring Inclusive Growth

The long-term health of the Orange Economy depends on nurturing the entire ecosystem, from the grassroots community level to the sophisticated intermediaries that connect talent to markets.

**161. Recommendation 10: Support and Scale Creative Intermediaries.**

Recognizing the vital role of "cultural enablers" like galleries, agencies, and foundations, targeted support should be provided to these organizations.<sup>22</sup> This could take the form of operational grants or partnerships that allow them to expand their work in artist development, exhibition, and market access. These



intermediaries are the crucial connective tissue of the ecosystem.

162. **Recommendation 11: Invest in Community-Based Cultural Hubs.** The model of the craft village and the Community-Based Ecotourism site should be strengthened and replicated. Investment from the Ghana Tourism Authority and District Assemblies should focus on improving infrastructure in these locations (e.g., visitor centers, workshops, internet access), providing business training to local cooperatives, and marketing them as key cultural destinations.<sup>9</sup> This ensures that the economic benefits of culture and tourism are retained within local communities, fostering inclusive development.

By adopting this multi-pronged, collaborative approach, Ghana can systematically address the barriers holding back its creative talent and build a resilient, inclusive, and globally competitive Orange Economy.

### Works cited

163. Unleashing Ghana's Creative Arts Potential: Is Global Collaboration ..., accessed June 25, 2025, <https://www.modernghana.com/news/1358787/unleashing-ghanas-creative-arts-potential-is.html>
164. Cultural Policy in Action: An Examination of the Centres for National ..., accessed June 25, 2025, <https://rsisinternational.org/journals/ijriss/articles/cultural-policy-in-action-an-examination-of-the-centres-for-national-culture-in-ghana/>
165. Youth Participation in the Creative Industries in Ghana; Motivation ..., accessed June 25, 2025, <https://culture-weekly.com/2025/05/15/youth-participation-in-the-creative-industries-in-ghanamotivation-and-barriers/>
166. Building resilient digital economies: Lessons from the creative sector ..., accessed June 25, 2025, <https://thebftonline.com/2025/06/09/building-resilient-digital-economies-lessons-from-the-creative-sector/>
167. Ghana launches UNESCO Culture|2030 Indicators to measure ..., accessed June 25, 2025, <https://www.motac.gov.gh/ghana-launches-unesco-culture2030-indicators-to-measure-cultures-role-in-national-development/>
168. Ghana launches UNESCO Culture|2030 Indicators to measure role of culture in national development, accessed June 25, 2025, <https://www.ghanaweb.com/GhanaHomePage/entertainment/Ghana-launches-UNESCO-Culture-2030-Indicators-to-measure-role-of-culture-in-national-development-1983865>
169. Creative & Design Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/creative-design>
170. Jobs in Kumasi & Ashanti Region - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/kumasi>
171. Ghana artisanship: its traditional crafts | ANESVAD, accessed June 25, 2025,



- <https://www.anesvad.org/en/last-news/ghana-artisanship-traditional-crafts/>
172. Ghanaian Handicrafts - Tourism in Ghana, Touring Ghana, Visiting Ghana, accessed June 25, 2025, <https://touringghana.com/ghanaian-handicrafts/>
173. Efanam D. - Graphic designer - Upwork Freelancer from Accra, Ghana, accessed June 25, 2025, <https://www.upwork.com/freelancers/~01da6d2078cf26e446>
174. The Best Proofreaders For Hire In Ghana - Upwork™, accessed June 25, 2025, <https://www.upwork.com/hire/proofreaders/gh/>
175. British Council engages Ghana's Tourism, Culture, and Creative Arts Ministry on cultural collaboration, accessed June 25, 2025, <https://www.motac.gov.gh/british-council-engages-ghanas-tourism-culture-and-creative-arts-ministry-on-cultural-collaboration/>
176. British Council's publishing futures report highlights economic ..., accessed June 25, 2025, <https://citinewsroom.com/2024/10/british-councils-publishing-futures-report-highlights-economic-potential-of-ghanas-publishing-industry/>
177. Hon. Minister Meets World Bank Task Team on Tourism Development under GET Project, accessed June 25, 2025, <https://www.motac.gov.gh/hon-minister-meets-world-bank-task-team-on-tourism-development-under-get-project/>
178. Calling African creative entrepreneurs to apply for creative-tech ..., accessed June 25, 2025, <https://www.undp.org/south-africa/press-releases/calling-african-creative-entrepreneurs-apply-creative-tech-incubation-programme>
179. UNDP Partnership Key to Achieving Ghana's Fiscal and Developmental Goals – Dep. Fin. Minister | Ministry of Finance, accessed June 25, 2025, <https://www.mofep.gov.gh/news-and-events/2025-05-31/undp-partnership-key-to-achieving-ghana-fiscal-and-developmental-goals>
180. Recruitment Ghana : illustrator CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/illustrator>
181. Obed A. - Graphic Designer - Upwork Freelancer from Accra, Ghana, accessed June 25, 2025, <https://www.upwork.com/freelancers/~0191c7c72d835fe666>
182. Ghana Association of Visual Artists, accessed June 25, 2025, <https://www.ghanacultureforum.org/en/members/visual-arts/ghana-association-visual-artists>
183. About - Ghana Association of Visual Artists, accessed June 25, 2025, <https://gavaghana.org/about/>
184. Rethinking the contribution of creative economies in Africa to ..., accessed June 25, 2025, <https://www.tandfonline.com/doi/full/10.1080/10286632.2025.2470814>
185. Ghanaian Artists & Animators, accessed June 25, 2025, <https://sites.google.com/view/ghanaianartists>
186. Creative Associate at Fabcom Structural Limited | Jobberman, accessed June 25, 2025, <https://www.jobberman.com/listings/creative-associate-pmvwrv>
187. Advertising Production Portfolio Programme - Accra - AisAD, accessed June 25, 2025, <https://aisad.edu.gh/advertising-production-portfolio-programme/>
188. Job ad Ghana : Social Media Manager and Content Creator - Accra, accessed

- June 25, 2025, <https://www.ghanajob.com/job-vacancies-ghana/social-media-manager-content-creator-accra-192701>
189. Job and Pay - Creative and performing artists not elsewhere classified - Mywage.org/Ghana, accessed June 25, 2025, <https://mywage.org/ghana/career/ghana-job-pay/ghana-creative-and-performing-artists-all-other>
190. BA Creative Arts and Design Education | University of Education, Winneba, accessed June 25, 2025, <https://uew.edu.gh/theatre-arts/programmes/ba-creative-arts-and-design-education>
191. Programmes | University of Education, Winneba, accessed June 25, 2025, <https://www.uew.edu.gh/sca/programmes>
192. School of Creative Arts | University of Education, Winneba, accessed June 25, 2025, <https://uew.edu.gh/sca>
193. AisAD | Portfolio School in Ghana, accessed June 25, 2025, <https://aisad.edu.gh/>
194. Schools offering Visual Arts in Ghana - Full List & | SHS Select, accessed June 25, 2025, <https://shsselect.com/programmes/visual-arts?page=17>
195. Ghana Association of Visual Artists (GAVA) | Fiche Structures - Africultures, accessed June 25, 2025, <https://africultures.com/structures/?no=10487>
196. Artists For Hire in Ghana | Twine, accessed June 25, 2025, <https://www.twine.net/find/artists/gh>
197. Journalism, Printing Arts & Media, Ghana salaries - Paylab.com, accessed June 25, 2025, <https://www.paylab.com/gh/salaryinfo/journalism-printing-arts-media>
198. Musicians For Hire in Accra, Ghana - Twine, accessed June 25, 2025, <https://www.twine.net/find/musicians/gh/accra>
199. Ghana Dance Jobs & Auditions - StarNow, accessed June 25, 2025, <https://www.starnow.com/casting/open-casting-calls/ghana-dance-jobs/>
200. Dance Studies | School of Performing Arts - University of Ghana, accessed June 25, 2025, <https://spa.ug.edu.gh/department/dance>
201. Kwame Dadzie: Why Creative Arts Federation of Ghana is a needless formation, accessed June 25, 2025, <https://www.myjoyonline.com/kwame-dadzie-why-creative-arts-federation-of-ghana-is-a-needless-formation/>
202. Arts & Culture, Ghana salaries - Paylab.com, accessed June 25, 2025, <https://www.paylab.com/gh/salaryinfo/arts-culture>
203. Music Department | School of Performing Arts - University of Ghana, accessed June 25, 2025, <https://spa.ug.edu.gh/department/music>
204. The 10 Best Event Companies in Ghana - 2025 Reviews - Sortlist, accessed June 25, 2025, <https://www.sortlist.com/event/ghana-gh>
205. Entertainment events in Accra - AllEvents, accessed June 25, 2025, <https://allevents.in/accra/entertainment>
206. Ghana Music Rights Organization - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Music\\_Rights\\_Organization](https://en.wikipedia.org/wiki/Ghana_Music_Rights_Organization)
207. TV Producer - Vacancies In Ghana, accessed June 25, 2025, <https://www.vacanciesinghana.com/job/tv-producer>

208. Programmes Offered - UniMAC – Institute of Film and Television, accessed June 25, 2025, <https://nafti.edu.gh/programmes-offered/>
209. Careers - The Multimedia Group, accessed June 25, 2025, <https://www.multimediaghana.com/careers.php>
210. Undergraduate Admissions - UniMAC – Institute of Film and Television, accessed June 25, 2025, <https://nafti.edu.gh/undergraduate-admissions/>
211. Podcast Editors For Hire in Accra, Ghana - Twine, accessed June 25, 2025, <https://www.twine.net/find/podcast-editors/gh/accra>
212. Content Creator Jobs in Ghana | Twine, accessed June 25, 2025, <https://www.twine.net/jobs/content-creators/in/ghana>
213. Creative Storm Network - Devex, accessed June 25, 2025, <https://www.devex.com/organizations/creative-storm-network-124941>
214. Accra Film Crew - Beverly Boy Productions, accessed June 25, 2025, <https://beverlyboy.com/accra-film-crew/>
215. About - UniMAC – Institute of Film and Television, accessed June 25, 2025, <https://nafti.edu.gh/about/>
216. UniMAC – Institute of Film and Television, accessed June 25, 2025, <https://nafti.edu.gh/>
217. National Film Authority (NFA) - Ministry of Tourism, Arts and Culture, accessed June 25, 2025, <https://www.motac.gov.gh/national-film-authority-nfa/>
218. Accra Freelance Videographer Prices in 2025 - Beverly Boy Productions, accessed June 25, 2025, <https://beverlyboy.com/videographer/accra-freelance-videographer-prices-in-2025/>
219. Remote Editing Jobs in Ghana - Himalayas.app, accessed June 25, 2025, <https://himalayas.app/jobs/countries/ghana/editing?page=2>
220. Accord Literary, accessed June 25, 2025, <https://www.accordliterary.co.uk/>
221. Accord Literary, the Ghana-based Literary Agency, Calls for Submissions of Novel Manuscripts for Young Readers - Brittle Paper, accessed June 25, 2025, <https://brittlepaper.com/2020/01/accord-literary-the-ghana-based-literary-agency-calls-for-submissions-of-novel-manuscripts-for-young-readers/>
222. Ghana Publishing Company -, accessed June 25, 2025, <https://ghanapublishing.gov.gh/>
223. About Alpha and Omega Publications Ltd., accessed June 25, 2025, <https://alphaandomegapublications.com/about-us/>
224. Graphic Design & Printing Technology, accessed June 25, 2025, <https://japhsoninstitute.edu.gh/graphics-print.html>
225. Latest Fashion Designer Jobs in Ghana on Tonaton.com, accessed June 25, 2025, [https://tonaton.com/c\\_jobs/t\\_fashion-designer](https://tonaton.com/c_jobs/t_fashion-designer)
226. Recruitment Ghana : fashion design CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/fashion%20design>
227. Top Advertising Agencies in Ghana - June 2025 Reviews - GoodFirms, accessed June 25, 2025, <https://www.goodfirms.co/advertising-companies/ghana>
228. Batik-Making Class in Accra, Ghana - Buoyant Travel | Connecting The Diaspora

- With Cool, accessed June 25, 2025,  
<https://buoyanttravel.com/experiences/p/batik-making-experience-ghana>
229. Marketing - Jobsinghana.com - Jobs Directory, accessed June 25, 2025,  
<https://www.jobsinghana.com/jobs/indexnew.php?device=d&cat=37>
230. Programmes | Faculty of Creative Arts and Technology - Kumasi Technical University, accessed June 25, 2025,  
<https://fcats.kstu.edu.gh/academics/programmes>
231. All Programmes | Kumasi Technical University, accessed June 25, 2025,  
<https://kstu.edu.gh/academics/all-programmes>
232. 2025 Marketing and Creative Salaries and Hiring Trends | Robert Half, accessed June 25, 2025, <https://www.roberthalf.com/us/en/insights/salary-guide/marketing-and-creative>
233. Bonwire Kente: The Woven Gold of Ghana - Vice Versa Global, accessed June 25, 2025, <https://www.viceversaglobal.com/bonwire-kente-the-woven-gold-of-ghana/>
234. Adinkra Cloth – African Beads & Fabrics, accessed June 25, 2025,  
<https://www.africanbeadsandfabrics.com/knowledge/adinkra-cloth/>
235. Ghana Rocks: A Regional Guide to Ghanaian Crafts - AfricanCraft.com, accessed June 25, 2025, <https://www.africancraft.com/ghana.php>
236. Wood Carving & Drums - artashanti, accessed June 25, 2025,  
<https://www.artashanti.com/blank-xwd6k>
237. Ghana Heritage Tours - Ashanti African Tours, accessed June 25, 2025,  
<https://ashantiafricantours.com/ghana-heritage-tours/>
238. Ghana Champions Community-Based Ecotourism at 2025 KOPIST Forum in South Korea, accessed June 25, 2025, <https://www.motac.gov.gh/ghana-champions-community-based-ecotourism-at-2025-kopist-forum-in-south-korea/>
239. Recruitment Ghana : tourism CVs | Ghanajob.com, accessed June 25, 2025,  
<https://www.ghanajob.com/cv-library-search/tourism>
240. Kente Cloth, Bonwire, Ghana - Carol Ventura, accessed June 25, 2025,  
<https://carolventura.com/Kente.htm>
241. Asante Adinkra Cloth - Adire African Textiles, accessed June 25, 2025,  
<https://www.adireafrican textiles.com/textiles-resources-sub-saharan-africa/some-major-west-african-textile-traditions/asante-adinkra-cloth/>
242. Ghana Promotes Community-Based Ecotourism At 2025 KOPIST Forum, accessed June 25, 2025, <https://isd.gov.gh/ghana-promotes-community-based-ecotourism-at-2025-kopist-forum/>
243. Ghana promotes Community-Based Ecotourism at 2025 KOPIST Forum, accessed June 25, 2025, <https://www.modernghana.com/news/1411241/ghana-promotes-community-based-ecotourism-at-2025.html>
244. Made In Ghana - Ololo Express Online Marketplace, accessed June 25, 2025,  
<https://nightmarket.ololoexpress.com/made-in-ghana/>
245. Adinkra Cloths from Ghana | Traditional African Fabric - Tribalgh, accessed June

- 25, 2025, <https://www.tribalgh.com/collections/adinkra-cloths>
246. Ghana Wedding Beads - Etsy, accessed June 25, 2025, [https://www.etsy.com/market/ghana\\_wedding\\_beads](https://www.etsy.com/market/ghana_wedding_beads)
247. Bonwire Authentic Kente Cloth B64 - MGkente, accessed June 25, 2025, <https://www.mgkente.com/products/bonwire-authentic-kente-cloth-b64>
248. AsanSka University College of Design and Technology - Home, accessed June 25, 2025, <https://aucdt.edu.gh/>
249. Museum Jobs - Call For Curators, accessed June 25, 2025, <https://callforcurators.com/call/type/jobs/>
250. Recruitment Ghana : visual arts teacher CVs | Ghanajob.com, accessed June 25, 2025, <https://www.ghanajob.com/cv-library-search/visual%20arts%20teacher>
251. Job Vacancy For Creative Arts Teacher - Current Jobs in Ghana, accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-creative-arts-teacher-2/>
252. art Jobs in Ghana | Careerjet, accessed June 25, 2025, <https://www.careerjet.com.gh/art-jobs>
253. Lafa – Foundation for the Arts, accessed June 25, 2025, <https://lafa.org.gh/>
254. Funders — Nubuke Foundation, accessed June 25, 2025, <https://nubukefoundation.com/Funders>
255. Creative Art Department - St. Ambrose College of Education | Dormaa-Akwamu | Bono Region, Ghana | Official Website, accessed June 25, 2025, <https://sace.edu.gh/creativeart.php>
256. Accra Influencer Marketing Platform - Collabstr, accessed June 25, 2025, <https://collabstr.com/influencer-marketing/accra-ghana>
257. Nubuke Foundation, accessed June 25, 2025, <https://nubukefoundation.com/>
258. Ministry of Tourism, Arts, and Culture (Ghana) - Devex, accessed June 25, 2025, <https://www.devex.com/organizations/ministry-of-tourism-arts-and-culture-ghana-111607>
259. Faculty of Creative Arts and Technology: Home, accessed June 25, 2025, <https://fcats.kstu.edu.gh/>
260. Jobs in Takoradi & Western Region | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/takoradi>
261. Jobs in Tamale & Northern Region - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/tamale>
262. Ministry of Tourism, Arts & Culture - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ministry\\_of\\_Tourism,\\_Arts\\_%26\\_Culture](https://en.wikipedia.org/wiki/Ministry_of_Tourism,_Arts_%26_Culture)
263. Current Travel and Tourism Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/travel-and-tourism-jobs-in-ghana/>
264. How I Made \$40K My First Year Freelance Writing on Fiverr : r ..., accessed June 25, 2025, [https://www.reddit.com/r/freelanceWriters/comments/sllp7h/how\\_i\\_made\\_40k\\_my\\_first\\_year\\_freelance\\_writing\\_on/](https://www.reddit.com/r/freelanceWriters/comments/sllp7h/how_i_made_40k_my_first_year_freelance_writing_on/)

265. Remote Social Media Manager Jobs in Ghana | Himalayas, accessed June 25, 2025, <https://himalayas.app/jobs/countries/ghana/social-media-manager>
266. 15ghana | Ghana's Freelance Marketplace for Services, accessed June 25, 2025, <https://www.15ghana.com/>
267. Event Planning and Management Course - Accra, Ghana - Trainingcred Institute, accessed June 25, 2025, <https://trainingcred.com/course-schedules/event-planning-and-management-training/accra/>
268. Ghana Academy of Film and Television Arts - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Academy\\_of\\_Film\\_and\\_Television\\_Arts](https://en.wikipedia.org/wiki/Ghana_Academy_of_Film_and_Television_Arts)



# **Ghana's Platinum Economy 2025: A Systematic Examination of the High-Value Employment and Innovation Landscape**

## **Executive Summary: Ghana's Platinum Economy 2025 - An Engine for Growth and a Call for Strategic Action**

Ghana's Platinum Economy, encompassing its high-value, knowledge-intensive, and innovation-driven sectors, stands at a pivotal moment. This report provides a systematic examination of this burgeoning landscape, revealing an economy characterized by a dynamic, globally-integrated talent pool, yet one that faces a critical mismatch between available skills and market opportunities. The analysis, current as of June 2025, documents a vibrant ecosystem concentrated primarily within an Accra-Kumasi corridor, fueled by ambitious government policy, significant international investment, and a resilient entrepreneurial spirit.

Key findings indicate that the acceleration of remote work, driven by global talent platforms, has created a dual-speed salary market, presenting both unprecedented opportunities for individuals and significant retention challenges for local firms. Thematic clusters have emerged as the dominant forces of innovation, with Financial Technology (Fintech), Agricultural Technology (AgriTech), and Climate Technology (Climate Tech) attracting the most substantial investment and generating highly specialized employment demand. Furthermore, Ghana's regulatory environment, particularly in data protection and financial services, has become a direct creator of new, high-value professional roles, shaping the workforce in unique ways.

However, the ambitious national digital transformation agenda is constrained by foundational weaknesses in digital infrastructure, particularly low fixed broadband penetration and high data costs, which threaten to stifle growth in the most advanced sectors like Artificial Intelligence (AI) and big data. A persistent and widely documented skills gap between the output of the formal education system and the

demands of the Platinum Economy remains the single greatest barrier to unlocking the nation's full potential.

This report concludes with a series of strategic recommendations for key stakeholders. It calls for a tripartite alliance between government, academia, and industry to fundamentally overhaul workforce development. For the government, this means prioritizing investment in foundational digital infrastructure and legislating for strategic, industry-aligned skills development. For educational institutions, it requires a radical reform of curricula in partnership with industry. For innovation ecosystem leaders, it involves a strategic shift towards developing deeper, thematic venture studios that build on Ghana's proven strengths. By addressing these challenges with coordinated, strategic action, Ghana can overcome its current constraints and solidify its position as a premier African hub for technology, innovation, and high-value employment.

---

## **Part I: The Architecture of Ghana's High-Value Economy**

This section provides the essential macroeconomic, institutional, and regulatory context that underpins and shapes Ghana's Platinum Economy. It establishes the foundational elements—from national policy and digital infrastructure to the innovation ecosystem and legal frameworks—that collectively define the opportunities and constraints for high-value employment and growth.

### **Chapter 1: The Digital and Innovation Landscape**

The foundation of Ghana's Platinum Economy is built upon a national strategy that aggressively pursues digital transformation. This ambition is supported by a rapidly growing ICT sector and increasing international recognition. However, this forward-looking vision is tethered to the realities of its current digital infrastructure, creating a complex landscape of advanced potential and foundational challenges.



## 1.1 Macroeconomic Context

The Information and Communication Technology (ICT) sector has become a primary engine of Ghana's economic growth. Its contribution to the national Gross Domestic Product (GDP) has seen a dramatic surge, rising from GHS 4.4 billion in 2016 to an impressive GHS 21 billion in 2022. This represents approximately 4% of the total economy and demonstrates the sector's increasing centrality to national development.<sup>1</sup> Projections from international bodies like the World Bank indicate that Ghana's digital economy is poised to continue this trajectory, with growth expected to significantly outpace that of the overall economy in the coming years.<sup>2</sup> This macroeconomic momentum provides a powerful tailwind for the expansion of the Platinum Economy, signaling sustained demand for high-value goods, services, and talent.

## 1.2 National Digital Transformation Agenda

The growth of the Platinum Economy is not merely an organic market phenomenon; it is being actively steered by a comprehensive and ambitious national digital transformation agenda. The government has articulated a clear vision through several key policies and initiatives that are directly stimulating demand for knowledge-intensive skills and services.

The **Digital Ghana Agenda** serves as a core policy pillar, with stated goals of digitizing fiscal revenue collection, fostering a "cash-lite" society, and enhancing the delivery of online education.<sup>4</sup> These objectives create direct demand for expertise in fintech, e-payments, and educational technology.

More pointedly, the **National AI Strategy Initiative**, announced in May 2025 by the Ministry of Communication, Digital Technology, and Innovations (MOCDTI), signals Ghana's intent to compete at the technological frontier. The strategy prioritizes the ethical deployment of AI and other emerging technologies for national development. A critical component of this initiative is the digitization of national datasets to ensure that AI models are trained on local data, reflecting Ghanaian cultural nuances and safeguarding digital sovereignty.<sup>5</sup> This forward-thinking policy necessitates the

cultivation of a domestic talent pool in AI research, machine learning engineering, and data ethics. To support this, the government has established strategic partnerships with international bodies like UNESCO and the British High Commission.<sup>5</sup>

Complementing the AI strategy are two foundational talent and enterprise initiatives. The **One Million Coders Program** is designed to build a broad-based pipeline of young Ghanaians with digital skills, while the **Ghana Innovation and Startup Bill** aims to establish a robust legal and regulatory framework to support technology startups, reducing friction and encouraging investment.<sup>5</sup> Together, these policies create a clear, top-down demand signal for the very roles that define the Platinum Economy.

### 1.3 Digital Infrastructure and Connectivity

While policy ambition is high, its realization depends entirely on the quality and accessibility of the underlying digital infrastructure. Here, the picture is mixed. Ghana has achieved near-universal mobile broadband coverage with 3G and 4G services, and mobile phone penetration exceeds 135%.<sup>4</sup> This has been the bedrock of its world-leading mobile money ecosystem. However, affordability and reliability of this mobile access remain significant concerns for a large portion of the population.<sup>4</sup>

A more acute challenge lies in fixed broadband connectivity, which is a critical enabler for the data-intensive industries at the core of the Platinum Economy, such as cloud computing, big data analytics, and advanced manufacturing. In 2023, Ghana's fixed broadband penetration stood at a starkly low 0.66 subscriptions per 100 people.<sup>8</sup> This infrastructural deficit represents a major bottleneck. The development and deployment of sophisticated AI models or the management of large-scale cloud operations from a location with unreliable or slow fixed internet is untenable. The high cost of data further exacerbates this issue, acting as a barrier not only for consumers but also for small businesses and startups that form the backbone of the innovation ecosystem.<sup>9</sup>

On a positive note, Ghana's data center infrastructure is a point of strength. The country hosts the only Tier IV data center in West Africa, alongside several Tier III facilities.<sup>4</sup> This provides a robust physical foundation for cloud services and data hosting, attracting international cloud providers and enabling local companies to

offer advanced digital services.

Recognizing these gaps, the government has initiated programs to expand the national fiber backbone and has invested in deploying 2,016 rural connectivity sites to bridge the urban-rural digital divide.<sup>4</sup> The success of these initiatives is paramount. Without a massive and accelerated investment in last-mile fiber infrastructure and concurrent policies to drive down data costs, the growth of the most advanced Platinum Economy sectors will be severely constrained. This reality elevates the importance of roles within the "Smart Infrastructure" and "Renewable Energy for Smart Grids" sub-sectors; they are not merely areas of growth but are critical enablers for the entire digital ecosystem.

## **1.4 Global Innovation and ICT Rankings**

Ghana's progress in building its digital and innovation ecosystem is reflected in its improving position in global indices. In the 2023 Global Innovation Index, Ghana ranked 99th out of 123 countries globally and 7th among Sub-Saharan African nations. The index credited the country for its political stability, a coherent National Innovation and Research Commercialization Policy, a vibrant entrepreneurial ecosystem, and widespread ICT access. However, it also highlighted critical areas for improvement, including access to finance, the need for stronger ICT university curricula, and a relatively low level of technology imports and software spending.<sup>4</sup>

In the 2024 ICT Development Index, Ghana ranked 15th out of 47 African countries, confirming its position in the upper tier of the continent's digital economies.<sup>4</sup> These rankings serve as important benchmarks, validating the country's strategic direction while providing a clear roadmap of the weaknesses that must be addressed to achieve its ambition of becoming a leading African tech hub.

## **Chapter 2: The Innovation Ecosystem Nexus**

The dynamism of Ghana's Platinum Economy is powered by a complex network of institutions that support entrepreneurship, foster innovation, and channel capital.

This ecosystem is not a monolithic entity but is increasingly organizing into powerful, specialized clusters. Understanding this nexus of hubs, universities, and funders is essential to mapping the flow of talent and opportunity.

## 2.1 Mapping the Hubs and Accelerators

A constellation of innovation hubs and accelerators provides the critical infrastructure for early-stage ventures. These organizations offer training, mentorship, co-working spaces, and access to seed funding, serving as the primary entry point for many aspiring entrepreneurs.

Key players in this landscape include **MEST Africa**, a pan-African technology training program and venture capital firm that offers a comprehensive 12-month program covering business, communications, and software development. Graduates are eligible for seed funding ranging from \$50,000 to \$100,000.<sup>11</sup>

**Impact Hub Accra** serves as a central node in the capital, providing co-working spaces and hosting a wide range of networking events, incubation, and acceleration programs that foster community and collaboration.<sup>13</sup>

A significant development is the emergence of thematically focused hubs. The **Ghana Climate Innovation Centre (GCIC)**, hosted at Ashesi University, is a prime example. It is dedicated to supporting ventures in five climate-related sectors: energy efficiency, renewable energy, climate-smart agriculture, waste management, and water purification. GCIC provides business incubation, policy advocacy, and grant funding of up to CAD \$21,000 to its portfolio companies.<sup>16</sup> This specialized focus creates a powerful concentration of expertise and resources, accelerating innovation in the green economy.

These organizations are themselves employers within the Platinum Economy, creating a range of roles essential for their operation. These include positions such as **Accelerator and Incubator Management, Venture-Building Consulting, Startup Community Coordination**, and formal and informal **Mentorship** roles.<sup>11</sup>

## 2.2 The Role of Academia in Innovation

Ghana's leading universities are increasingly playing a pivotal role in the innovation ecosystem, moving beyond traditional teaching to become active drivers of research and enterprise.

The **University of Ghana (UG)**, through its Department of Computer Science, has established dedicated research groups in strategic areas such as Artificial Intelligence, Cybersecurity, Data Science, and Human-Computer Interaction (HCI).<sup>20</sup> The department actively encourages students to pursue internships and hands-on research opportunities, aiming to bridge the gap between academic theory and industry practice.<sup>21</sup>

**Kwame Nkrumah University of Science and Technology (KNUST)** in Kumasi is another powerhouse of innovation. The **KNUST Engineering Education Project (KEEP)** is a transformative initiative focused on delivering world-class postgraduate engineering education, conducting problem-solving research, and strengthening the linkage between academia and industry.<sup>22</sup> A testament to its forward-looking agenda is the project's initiative to establish a state-of-the-art

**Quantum Lab**, a move designed to position KNUST as a leader in the next frontier of computing.<sup>23</sup> The university also hosts research centers dedicated to energy and transport, further aligning its research agenda with national development priorities.<sup>24</sup>

Crucially, direct university-industry linkages are beginning to form. The strategic partnership between **HDG Homes and KNUST** to develop a dedicated technology hub as part of the Kumasi Airport City project is a landmark example.<sup>25</sup> This collaboration aims to create a physical space where academic research can be commercialized and where students and faculty can engage directly with the entrepreneurial ecosystem, fostering a cycle of innovation and talent development.

## 2.3 Venture Capital and Funding Landscape

The flow of capital is the lifeblood of any innovation ecosystem, and in Ghana, funding patterns reveal a clear trend towards thematic investment. While overall access to finance remains a challenge noted by the Global Innovation Index <sup>4</sup>, specific

sub-sectors are attracting significant domestic and international capital.

**Agritech** has emerged as a standout recipient of venture funding. The startup **Complete Farmer** successfully raised over \$10 million in a private financing round in 2023, followed by an additional €2.2 million unsecured loan in 2025 from the EU-backed AgriFI facility.<sup>26</sup> Similarly, the

**Kosmos Innovation Center (KIC) AgriTech Challenge Pro**, in partnership with the Mastercard Foundation, provides seed funding ranging from \$5,000 to \$25,000 to dozens of youth-led agribusiness startups, nurturing a pipeline of new ventures.<sup>30</sup>

**Climate Finance** is another area of substantial capital injection, primarily from international development partners. The Climate Investment Funds (CIF) has allocated over \$104 million to Ghana for programs in forestry and renewable energy.<sup>31</sup> Development agencies like Germany's GIZ are funding green business competitions and digital transformation centers<sup>16</sup>, while the World Bank is supporting environmental risk management through various programs.<sup>33</sup> This influx of capital creates a direct demand for professionals with expertise in

**Climate Finance Coordination, Grant Management, and Environmental and Social Governance (ESG).**

The distinct patterns of activity and investment reveal that Ghana's innovation ecosystem is maturing beyond a generic "tech" scene into a more sophisticated structure with powerful, specialized clusters. The Bank of Ghana's proactive fintech policies<sup>35</sup>, the targeted EU and KIC funding for agritech<sup>26</sup>, and the dedicated support for green ventures by GCIC and international partners<sup>16</sup> have created three dominant thematic pillars: Fintech, Agritech, and Climate Tech. This clustering has profound implications for workforce development. It suggests that the most valuable and in-demand talent will possess not just general technical skills but also deep domain knowledge specific to these verticals. Consequently, training initiatives should pivot from generic "coding bootcamps" to more specialized programs in "Fintech Compliance," "Data Science for Agriculture," or "Renewable Energy Project Finance." This trend also points to the emergence of high-value consultancy and advisory roles at the intersection of these clusters, such as experts in "Carbon Market Finance for Agritech" or "Blockchain for Supply Chain Traceability in Climate-Smart Cocoa."

## Chapter 3: The Regulatory Framework - Enablers and Constraints

The legal and regulatory environment is a critical determinant of the shape and velocity of the Platinum Economy. In Ghana, specific legislative acts and policy frameworks have moved beyond being mere constraints to become active enablers and, in some cases, direct creators of new, high-value employment categories. The proactive stance of regulators, particularly in financial technology and data protection, has been instrumental in building trust and fostering a structured innovation landscape.

### 3.1 Financial Technology (Fintech) Regulation

The **Bank of Ghana (BoG)** has established itself as a leading and progressive regulator in the African fintech space. It actively oversees the nation's payment systems, the ubiquitous mobile money sector, and the critical interoperability infrastructure that allows seamless fund transfers between different platforms.<sup>4</sup> This proactive oversight has been a key factor in the sector's explosive growth.

A cornerstone of the BoG's strategy is its **Regulatory Sandbox**, launched to foster innovation in a controlled environment. The sandbox provides a space for startups and established players to test new products and services in areas such as blockchain technology, digital remittances, crowdfunding, and electronic Know-Your-Customer (e-KYC) platforms.<sup>35</sup> By offering a "safe harbor" from certain regulatory requirements during the testing phase, the sandbox significantly reduces legal costs and accelerates the time-to-market for innovative solutions. This initiative directly creates demand for

**Fintech Compliance Specialists** and **Regulatory Affairs** professionals within participating companies, who are tasked with navigating the sandbox process and engaging with the regulator.

The **Payment Systems and Services Act, 2019 (Act 987)** provides the overarching legal framework for the sector. It establishes stringent licensing requirements that mandate specific corporate governance structures, such as a minimum of 30% Ghanaian equity participation and "fit and proper persons" criteria for directors.<sup>36</sup> The



Act also imposes rigorous technical and security standards, including requirements for ISO 27001 certification for data security and compliance with the Payment Card Industry Data Security Standard (PCI DSS) where applicable.<sup>36</sup> These legal mandates have directly created a class of formal, non-negotiable roles within fintech companies, including

**Chief Compliance Officers, Information Security Managers, and Legal Technology Specialists**, who are responsible for ensuring adherence to these complex requirements.

Further signaling its ambition for regional leadership, the BoG signed a Memorandum of Understanding (MoU) with the National Bank of Rwanda in February 2025 to establish Africa's first **fintech license passporting framework**.<sup>37</sup> This groundbreaking initiative aims to allow fintech companies licensed in one country to operate in the other, which will inevitably create demand for a new cadre of legal and compliance experts specializing in cross-border financial regulation.

### 3.2 Data Protection and Cybersecurity

Parallel to the developments in fintech, Ghana has established a robust framework for data privacy that is having a profound impact on the employment landscape. The **Data Protection Act, 2012 (Act 843)**, enforced by the independent **Data Protection Commission (DPC)**, sets the rules for the lawful collection, processing, and storage of personal data.<sup>38</sup>

A key provision of the Act has been the direct creation of a new profession. Section 58 of the Act mandates that all medium and large organizations that process personal data must appoint a **Data Protection Supervisor (DPS)**.<sup>40</sup> This legally required role has generated a new and growing class of professionals responsible for overseeing internal data protection compliance, advising on best practices, and facilitating staff training. The DPC offers specialized training and accreditation for these individuals, formalizing the profession.<sup>39</sup>

The Act also imposes strict compliance obligations, including the mandatory registration of all data controllers and processors with the DPC, with renewal required every two years.<sup>40</sup> This process requires organizations to submit compliance



assessment reports, often preceded by a gap analysis audit. This has created a market for external

**Data Protection Consultants** and **Technology Auditors** who assist companies in meeting these requirements. With the DPC empowered to levy significant fines for non-compliance—up to GHS 250,000 for severe violations—there is a strong financial incentive for organizations to invest in these compliance roles, further cementing their importance in the Platinum Economy.<sup>38</sup>

### 3.3 Renewable Energy and Climate Policy

Government policy is the primary driver of growth and employment in the green economy. The **Ghana Renewable Energy Master Plan (REMP)**, launched in 2019, sets a clear target of achieving 10% renewable energy in the national energy mix by 2030. This plan is designed to stimulate investment and create jobs in solar, wind, hydro, and biomass energy sources.<sup>41</sup>

Building on this, the **Energy Transition and Investment Plan (ETIP)**, launched in 2023, outlines a more ambitious pathway to achieve net-zero emissions by 2060. Critically, the ETIP projects that this transition will result in the creation of **400,000 net new jobs** over the period, primarily in renewable energy deployment, green manufacturing, and related services.<sup>42</sup>

These high-level policies directly stimulate market demand for a range of specialized technical roles, including **Solar and Wind Systems Engineers, Energy Storage Research Scientists, Grid Automation Specialists, and Smart-Metering Data Analysts**.<sup>41</sup> Furthermore, the government's institutional response to the climate challenge is also creating high-value employment. The establishment of a dedicated

**Climate Financing Division** within the Ministry of Finance in October 2024 is a clear example, creating senior-level policy and finance roles tasked with attracting and managing international climate funds.<sup>33</sup>

The regulatory frameworks in Ghana are thus not passive background conditions but are active, dynamic forces shaping the Platinum Economy. The legal requirements of Act 843 and Act 987 have manufactured direct, non-discretionary demand for

professionals in data privacy and fintech compliance. Similarly, the policy targets of the REMP and ETIP are creating a long-term, predictable demand curve for green skills. This means that training programs focused on "Legal Tech," "Regulatory Technology (RegTech)," and "Climate Policy and Finance" are not speculative; they are responding to a clear and present market need created by the state itself. This provides a unique opportunity for workforce development agencies and educational institutions to develop curricula with a high degree of certainty regarding graduate employment prospects.

---

## **Part II: A Granular Analysis of Platinum Economy Sub-Sectors and Employment**

This section provides the empirical core of the report, delivering a detailed, sub-sector-by-sub-sector inventory of the employment landscape within Ghana's Platinum Economy. Each chapter follows a consistent structure, examining market dynamics, identifying key employers, and documenting the full spectrum of employment opportunities—from formal full-time positions to freelance and contract work. The analysis drills down into the specific responsibilities, skills, qualifications, and compensation intelligence associated with these roles, providing a granular, evidence-based map of the workforce.

### **Chapter 4: The Digital Core: Advanced ICT, AI & Data Analytics, and Cybersecurity**

This cluster of sub-sectors—Advanced Information and Communication Technology (ICT), Artificial Intelligence (AI) & Data Analytics, and Cybersecurity—forms the foundational bedrock of Ghana's Platinum Economy. Demand within this digital core is propelled by a dual engine: global technology firms leveraging Ghana as a hub for remote talent, and a growing cohort of local enterprises and government agencies undergoing digital transformation. This confluence of global integration and local demand has created a dynamic and increasingly sophisticated job market.

## 4.1 Sub-sector Overview and Market Dynamics

The digital core is the most mature segment of the Platinum Economy. It is characterized by its global connectivity, with a significant portion of its high-end talent working directly for international companies. The rise of remote work has profoundly reshaped the market, creating a "brain gain" phenomenon where top talent can access global salaries and opportunities without leaving Ghana. This has, however, created intense competition for talent and a significant salary disparity between local and international employers. Key market drivers include the global demand for skills in cloud computing, data science, and cybersecurity, as well as the Ghanaian government's own digitalization initiatives and the establishment of entities like the Google AI Center in Accra.<sup>44</sup>

## 4.2 Key Employers and Organizational Context

The employers within this cluster are diverse, ranging from multinational technology corporations to local startups and public sector bodies.

269. **Multinational Technology Corporations (with a significant remote presence):** Companies like **Canonical**, a leading provider of open-source software, actively recruit for remote software engineering roles from Ghana, emphasizing a "work from home" model with global travel for team meetings.<sup>45</sup> Global talent platforms are major players, with

**Turing.com**<sup>47</sup>,

**Andela**<sup>49</sup>, and

**Crossover** (representing firms like IgniteTech)<sup>51</sup> acting as key intermediaries connecting Ghanaian developers with high-paying jobs at U.S. and other international companies.

270. **Local Technology Companies:** A vibrant local scene includes firms like **AmaliTech**, which hires for a range of tech roles including Power BI Developers and C++ Developers across Accra, Takoradi, and Kumasi.<sup>52</sup> Startups such as **Filly Coder**<sup>53</sup> and training institutions like **DevWorld Tech Academy**<sup>54</sup> also contribute to the employment landscape.

271. **Telecommunications Companies:** Major operators like **MTN Ghana** and **Telecel Ghana** (formerly Vodafone) are significant employers of tech talent, particularly in areas like network security, financial planning analysis for tech services, and business intelligence development.<sup>55</sup>
272. **Research Institutions:** The **Google AI Center Accra** is a globally significant institution that, while not a mass employer, serves as an anchor for the AI research community, hosting events and collaborating with local talent.<sup>44</sup>

### 4.3 Employment Role Inventory and Analysis

The employment opportunities in this cluster span the full spectrum from formal, full-time roles to flexible, remote contract work.

- **Formal Full-Time Employment:**
  - **Software Engineer (Python, Kubernetes, Data Infrastructure):** This role, exemplified by postings at Canonical, involves designing and delivering open-source operations code, working across the full Linux stack (kernel, networking, storage), and focusing on application reliability and monitoring infrastructure.<sup>45</sup> It is a fully remote role requiring strong Python programming skills, familiarity with Kubernetes (K8s) and Docker, hands-on experience with at least one public cloud platform (e.g., AWS, Azure, GCP), and typically a Bachelor's degree in Computer Science or a related STEM field.<sup>45</sup>
  - **Data Scientist / Machine Learning Engineer:** As sought by global platforms like Turing for their clients, these roles involve developing predictive models and solutions from large, complex datasets to improve business outcomes like customer experience or ad targeting. Core responsibilities include data modeling, A/B testing framework development, and monitoring data accuracy.<sup>60</sup> A degree in a quantitative field and at least three years of experience are standard requirements.
  - **Information Security Compliance Lead:** This is a senior, strategic role as seen in a posting from IgniteTech via Crossover.<sup>51</sup> Responsibilities go beyond traditional compliance, involving the management of certification audits (SOC 2, ISO 27001, PCI DSS) and, innovatively, tuning and training an AI-first compliance engine. This role requires at least three years of experience in leading certification audits and proficiency in using Generative AI tools for

compliance tasks.

- **Cybersecurity and Compliance Specialist:** A role commonly found in regulated industries like telecommunications (e.g., Telecel), this position involves managing technology security governance, risk, and compliance based on established frameworks like ISO27001 and the NIST Cybersecurity Framework.<sup>59</sup> It requires providing security assurance for projects and ensuring compliance with data protection laws. A minimum of five years of experience in a tech security role is typically required.<sup>59</sup>
- **Freelance and Contract Work (Primarily Remote):**
  1. **Remote Software Developer (Full-stack, Backend, Frontend):** This is the most common opportunity offered by platforms like Turing and Andela. These platforms vet Ghanaian developers and match them with long-term, full-time contracts with international companies. The roles demand a high degree of autonomy and proficiency in specific technology stacks (e.g., Ruby on Rails, React/Node, Python). A typical requirement is a minimum of three years of professional experience and the ability to maintain a four-to-six-hour overlap with U.S. time zones (PST).<sup>47</sup> Andela provides a comprehensive support system, including talent matching, career guidance, and upskilling opportunities, to facilitate these engagements.<sup>50</sup>

#### 4.4 Skills, Qualifications, and Compensation Intelligence

The skills required are globally standardized, reflecting the international nature of the work.

13. **Technical Skills:** The most frequently demanded skills include **Python**, **JavaScript**, and their associated frameworks (Node.js, React). Containerization and orchestration technologies like **Kubernetes** and **Docker** are essential for modern cloud-native roles. Deep knowledge of at least one major **public cloud platform (AWS, Azure, GCP)** is a prerequisite for most mid-to-senior positions. Foundational skills in **SQL**, **RESTful APIs**, and version control with **Git** are universally expected.<sup>45</sup> For roles intersecting with finance, knowledge of International Financial Reporting Standards (IFRS) is a plus.<sup>56</sup>
14. **Soft Skills:** In a globally distributed work environment, soft skills are as critical as technical prowess. **Collaboration, proactive communication, independent**

**problem-solving**, and a commitment to **continuous learning** are consistently emphasized in job descriptions. For remote roles, **self-management** and **personal accountability** are paramount.<sup>45</sup>

15. **Qualifications:** A Bachelor's degree in Computer Science, Engineering, or a related STEM field is the standard entry-level qualification.<sup>45</sup> For senior and specialized roles, a Master's degree or equivalent experience is often preferred. Experience is a key differentiator, with most international remote roles requiring a minimum of three to five years of professional experience.<sup>47</sup>
16. **Compensation Intelligence:** A profound market distortion is evident in compensation. Local salary surveys provide a baseline for domestically-oriented roles. The 2024 Ghana Tech Ecosystem Survey found that 38% of tech respondents earn less than GHS 50,000 annually.<sup>62</sup> A 2025 salary guide from a local recruitment agency, okAdwuma, places the average monthly salary for a mid-level Software Engineer in Greater Accra at GHS 7,500.<sup>63</sup> Paylab data from 2023 suggests a gross monthly range for IT professionals between GHS 2,084 and GHS 9,996.<sup>64</sup>

In stark contrast, global remote platforms offer dollar-denominated salaries that are an order of magnitude higher. An Information Security Compliance Lead role advertised on Crossover for Accra offers **\$100,000 per year**.<sup>51</sup> Data from Levels.fyi, while limited for Accra, shows a Technical Program Manager earning over \$53,000 annually.<sup>65</sup> This creates a dual-speed market where local companies face immense difficulty competing for senior talent, who are increasingly drawn to these lucrative global opportunities.

The following table provides a direct comparison to illustrate this salary dichotomy, which is a defining feature of Ghana's digital core.

|  |                       |                                      |   |   |
|--|-----------------------|--------------------------------------|---|---|
| Table 4.1:<br>Comparative<br>Salary<br>Benchmarking:<br>Local vs.<br>Global Remote<br>Roles (Accra,<br>2025) |                       |                                      |   |   |
| Job Title  | Employment<br>Context | Local Salary<br>Range<br>(GHS/Month) | Global Remote<br>Salary Range<br>(USD/Year) | Implied GHS<br>Equivalent<br>(Monthly)* |

|                                      |                                     |                             |                           |                    |
|--------------------------------------|-------------------------------------|-----------------------------|---------------------------|--------------------|
| Software Engineer (Mid-Level)        | Local Ghanaian Company              | 6,000 - 8,500 <sup>63</sup> | N/A                       | N/A                |
| Software Engineer (Senior)           | Global Tech Co. (via Turing/Andela) | N/A                         | 70,000 - 120,000 (Est.)   | 72,900 - 125,000   |
| Data Scientist (Mid-Level)           | Local Ghanaian Company              | 5,000 - 9,000 (Est.)        | N/A                       | N/A                |
| Senior Data Scientist / ML Engineer  | Global Tech Co. (via Turing)        | N/A                         | 100,000 - 150,000+ (Est.) | 104,100 - 156,200+ |
| Information Security Specialist      | Local Ghanaian Company              | 7,000 - 12,000 (Est.)       | N/A                       | N/A                |
| Information Security Compliance Lead | Global Tech Co. (via Crossover)     | N/A                         | \$100,000 <sup>51</sup>   | ~104,100           |

*\*Note: Implied GHS Equivalent calculated at an approximate exchange rate of GHS 15.0 to 1 USD for illustrative purposes. "Est." indicates an estimated range based on qualitative analysis of platform descriptions where precise numbers are not provided.*

The data in this table starkly illustrates the economic pull of global remote work. A senior developer working remotely for a U.S. company can earn ten to fifteen times the salary of a mid-level peer working for a local firm. This has significant implications for workforce development and industrial strategy. While it represents a massive opportunity for individual wealth creation and foreign exchange inflows, it also creates an existential challenge for local technology companies seeking to scale. It underscores the urgent need for local firms to develop non-monetary value propositions—such as equity, exceptional work culture, and opportunities for local impact—to attract and retain top-tier talent. For policymakers, it highlights the importance of creating an environment where local startups can grow to a scale where they can offer more competitive compensation.

## **Chapter 5: The Financial Frontier: Financial Technology, Insurtech, and Advanced Financial Services**

Ghana's financial technology (Fintech) sector is arguably the most dynamic and mature segment of its Platinum Economy. Its rapid development has been fueled by a confluence of high mobile phone penetration, a progressive regulatory environment spearheaded by the Bank of Ghana (BoG), and a vibrant startup ecosystem. This has created a fertile ground for innovation and a corresponding demand for a wide range of specialized, high-value roles that blend finance, technology, and regulatory compliance.

### **5.1 Sub-sector Overview and Market Dynamics**

The market is defined by the dominance of mobile money, which has been a primary driver of financial inclusion.<sup>7</sup> The BoG's proactive stance, including the implementation of payment systems interoperability, has created a seamless environment for digital transactions, fostering competition and innovation.<sup>4</sup> The sector is now moving beyond basic payments into more complex areas like digital credit, insurance technology (Insurtech), and wealth management. The BoG's regulatory sandbox is a key market dynamic, acting as an official incubator for new ideas in blockchain, remittances, and digital banking, effectively de-risking innovation for early-stage companies.<sup>35</sup> The recent agreement with Rwanda to create a license passporting framework signals a new phase of regional expansion and competition.<sup>37</sup>

### **5.2 Key Employers and Organizational Context**

The employment landscape in this sub-sector is a mix of agile startups, incumbent financial institutions undergoing digital transformation, and the telecommunications giants that pioneered mobile money.

17. **Fintech Startups:** Numerous startups operate within the ecosystem, many of which are graduates or participants of the BoG's sandbox. These firms are the



primary drivers of novel product development.

18. **Traditional Banks and Insurance Companies:** Established banks are heavily investing in digital banking divisions to compete with fintech challengers. Similarly, insurance companies are developing Insurtech products to digitize policy management, claims processing, and distribution. These institutions hire for roles like **Digital Banking Product Manager** and **Insurtech Developer**.
19. **Telecommunications Companies: MTN Ghana** (with MTN Mobile Money) and **Telecel Ghana** (with Telecel Cash) are massive players in the payment space and are significant employers of fintech talent. They hire for roles spanning product development, financial management, and compliance for their mobile financial services divisions.<sup>55</sup>
20. **Regulatory and Professional Bodies:** The **Bank of Ghana** itself, along with professional services firms (consulting, legal, audit) that advise the sector, are also sources of high-value employment.

### 5.3 Employment Role Inventory and Analysis

The roles in this sector are highly specialized, requiring a blend of technical, financial, and regulatory acumen.

#### 21. **Formal Full-Time Employment:**

- **Digital Payments Architect:** Responsible for designing the end-to-end architecture of payment systems, ensuring they are scalable, secure, and compliant. This role requires deep knowledge of payment protocols, API integrations, and security standards.
- **Blockchain and Cryptocurrency Specialist:** A role emerging from the focus of the BoG sandbox, these specialists explore and develop applications using distributed ledger technology for remittances, trade finance, and other use cases.<sup>35</sup>
- **Financial Data Scientist / Quantitative Analyst:** These professionals use statistical and machine learning models to analyze financial data for purposes such as credit scoring, fraud detection, risk analytics, and algorithmic trading.
- **Digital Banking Product Manager:** This role involves defining the strategy, roadmap, and feature definition for digital banking products. They work at the intersection of business, technology, and user experience to deliver

competitive mobile and online banking solutions.

- **VF Cash Development Manager (Telecel):** A specific example of a product management role focused on driving the business of mobile financial services, with key accountabilities in product distribution, profitability, and market share growth.<sup>57</sup>
- **Fintech Compliance Specialist:** A critical role responsible for ensuring that a fintech company's products, services, and operations adhere to all relevant financial regulations, including the Payment Systems and Services Act (Act 987), anti-money laundering (AML) laws, and data protection requirements.<sup>36</sup>
- **Analyst, Financial Planning & Budgeting (MTN):** This role, while in the finance function, is deeply embedded in the tech side of the business. Responsibilities include providing financial planning support for the tech divisions, preparing budgets, developing financial models, and tracking expenses, requiring a deep understanding of the telecom and ICT industry context.<sup>56</sup>

## 22. Contract and Consultancy Arrangements:

- **Regulatory Consultants:** Specialists who advise fintech startups on navigating the BoG's licensing process and sandbox requirements.
- **Security Auditors:** External experts hired to conduct PCI DSS, ISO 27001, and other security audits as mandated by Act 987.

## 5.4 Skills, Qualifications, and Compensation Intelligence

The qualifications for roles in this sector are stringent, reflecting the high stakes of financial services.

23. **Technical and Domain Skills:** A strong foundation in **financial modeling, risk analytics**, and payment protocols is essential. Knowledge of **blockchain technology** is increasingly valuable. For technical roles, proficiency in relevant programming languages and databases is required. For finance-specific roles, a deep understanding of **International Financial Reporting Standards (IFRS)** is mandatory.<sup>56</sup> Crucially, a working knowledge of the specific regulatory landscape, including

**Act 987, SOX, GDPR**, and AML guidelines, is a key differentiator.<sup>36</sup>

24. **Qualifications and Certifications:** A degree in Finance, Accounting, Economics,

or Computer Science is typical. For many finance and compliance roles, a **professional accounting certification** (e.g., ACCA, CA) is a firm requirement.<sup>56</sup> Certifications in financial modeling or specific technologies (e.g., certified blockchain professional) are a plus.

25. **Compensation Intelligence:** Salaries in the fintech sector are among the highest in the local tech market, driven by the high demand for specialized skills and the profitability of the sector. The 2024 Ghana Tech Ecosystem Survey identified FinTech professionals with over seven years of experience as the highest earners in the ecosystem.<sup>62</sup> While specific figures are confidential, roles that combine finance, technology, and compliance command a significant premium.

The Bank of Ghana's regulatory sandbox is functioning as more than just a testing ground for technology; it is a critical incubator for human capital. Startups that successfully navigate the sandbox process and "graduate" to a full license will possess teams with proven, hands-on experience in product development, regulatory engagement, and market launch. These teams become highly valuable assets. Their experience makes them prime acquisition targets for larger banks looking to innovate, or their individual members become a source of seasoned, battle-tested talent for the rest of the ecosystem, capable of leading new ventures and training the next generation of fintech professionals. This cycle of incubation, graduation, and talent dissemination is a powerful force for deepening the expertise within Ghana's financial frontier.

## **Chapter 6: The Industrial Transformation: Advanced Manufacturing, Industry 4.0, and Smart Infrastructure**

While the digital and financial sectors have seen rapid growth, Ghana's Platinum Economy is also extending into the physical world through the adoption of advanced technologies in manufacturing and urban development. This emerging cluster, encompassing Advanced Manufacturing, Industry 4.0, and Smart Infrastructure, is focused on leveraging automation, data, and connectivity to enhance industrial efficiency, build resilient urban environments, and create new value chains. The adoption is driven by a national push towards industrialization and a growing recognition of the need for sustainable and intelligent infrastructure.

## 6.1 Sub-sector Overview and Market Dynamics

This sub-sector is in a nascent but promising stage of development. The concept of **Industry 4.0**—the integration of cyber-physical systems, the Internet of Things (IoT), and AI into manufacturing—is gaining traction as a pathway to modernize Ghana's industrial base.<sup>66</sup> The government's digital transformation agenda explicitly includes the use of AI and other technologies to create intelligent infrastructure.<sup>66</sup> Market demand is currently driven by a few pioneering manufacturing firms seeking to optimize their processes and by large-scale, ambitious urban development projects that are incorporating "smart city" principles from the ground up. The primary challenge is the high capital investment required and the need for a specialized workforce that combines traditional engineering knowledge with digital skills.

## 6.2 Key Employers and Organizational Context

The employers in this domain are primarily in the engineering, construction, and industrial sectors.

26. **Engineering and Manufacturing Firms:** Companies like **RusselSmith Group**, an oil and gas services company, are actively hiring for roles in advanced manufacturing, indicating the adoption of these technologies in high-stakes industrial environments.<sup>68</sup>
27. **Real Estate and Infrastructure Developers:** The most significant driver in the smart infrastructure space is the **HDG Group**, the developer behind the Kumasi Airport City project. This project is explicitly designed as Ghana's first "smart and eco-friendly urban enclave".<sup>25</sup>
28. **Utility and Telecom Companies:** As the grid becomes "smarter," electricity and water utility companies, as well as telecom providers that build the underlying IoT networks, will become key employers of smart infrastructure specialists.
29. **Academic and Research Institutions:** Universities like **KNUST**, with its strong engineering faculty and partnership on the Kumasi Airport City tech hub, are central to developing the talent and research required for this sector.<sup>25</sup>

## 6.3 Employment Role Inventory and Analysis

The roles in this cluster require a hybrid skillset, blending traditional engineering disciplines with modern digital competencies.

### 30. Formal Full-Time Employment:

- **Engineer, Advanced Manufacturing:** This role, as advertised by RusselSmith Group, is pivotal in driving innovation in industrial processes. Responsibilities include leading additive manufacturing (3D printing) projects, optimizing manufacturing processes for efficiency and quality, evaluating and implementing new technologies, and providing training to junior engineers and technicians.<sup>68</sup>
- **Automation Engineer / Robotics Technologist:** These professionals design, implement, and maintain automated systems and robotic cells on factory floors. Their work involves programming Programmable Logic Controllers (PLCs), configuring robotic arms, and integrating sensor systems to improve production speed and quality.
- **IoT Specialist (Manufacturing Applications):** This role focuses on deploying and managing networks of sensors and connected devices within an industrial setting to monitor equipment health (predictive maintenance), track assets, and optimize energy consumption.
- **Smart City Solution Architect:** A high-level role responsible for designing the overall technological blueprint for a smart city project. This involves integrating various systems for traffic management, utility distribution, public safety, and building management into a cohesive, data-driven platform. The Kumasi Airport City project will be a primary source of demand for such roles.<sup>25</sup>
- **GIS and Remote Sensing Specialist:** These experts are crucial for the planning and management of large-scale infrastructure projects. Responsibilities include collecting and analyzing spatial data, creating detailed maps using software like QGIS, interpreting satellite imagery, and developing systems to monitor environmental changes or urban development.<sup>71</sup> This role is vital for both urban planning and natural resource management.

### 31. Internships and Apprenticeships:

2. The hands-on nature of this sector makes it particularly suitable for apprenticeships. The government's **National Apprenticeship Programme (NAP)**, which aims to train 100,000 young people annually, is a key vehicle for developing skills in technical trades that can be upgraded with Industry 4.0 competencies.<sup>73</sup>

## 6.4 Skills, Qualifications, and Compensation Intelligence

The qualifications for these roles reflect their interdisciplinary nature.

15. **Technical and Domain Skills:** Proficiency in **Computer-Aided Design (CAD) software** such as SolidWorks or Autodesk Fusion 360 is fundamental for design and modeling.<sup>68</sup> A strong understanding of **additive manufacturing principles** and experience with 3D printing equipment is required for advanced manufacturing roles. For automation, skills in PLC programming and robotics are key. In smart infrastructure, expertise in **Geographic Information Systems (GIS) software** (e.g., QGIS), remote sensing data analysis, and IoT network protocols is essential.<sup>71</sup> Knowledge of database management using SQL is often required for handling the large datasets generated by these systems.<sup>72</sup>
16. **Qualifications and Certifications:** A Bachelor's degree in a relevant engineering field (Mechanical, Electrical, Civil) or in Materials Science or Environmental Science is the standard foundation.<sup>34</sup> For more specialized or senior roles, such as an Environmental Specialist for a major project or an Advanced Manufacturing Engineer, a **Master's degree or even a PhD is often preferred**.<sup>34</sup> Project management certifications can also be highly valuable.
17. **Compensation Intelligence:** Compensation in this sector is competitive, particularly for engineers with specialized digital skills. While comprehensive local salary data is scarce, the requirement for advanced degrees and a minimum of five years of experience for many roles suggests that salaries are in the upper tier of the local engineering market.<sup>68</sup>

The **Kumasi Airport City project**<sup>25</sup> represents a watershed moment for this sub-sector in Ghana. It is not merely a real estate development but a full-scale, real-world laboratory for smart infrastructure and urban technology. The project's success in

implementing a smart, sustainable, and integrated urban environment will serve as a powerful proof-of-concept for the entire West African region. It will create direct, concentrated demand for the full range of roles identified, from Smart City Solution Architects and IoT Network Engineers to GIS Specialists. The outcomes and lessons learned from this single, ambitious project will heavily influence future private and public investment in smart infrastructure, making it a critical bellwether for the long-term growth of this segment of the Platinum Economy.

## **Chapter 7: The Green Transition: Renewable Energy, Environmental & Climate Technology**

Fueled by robust government policy, significant international funding, and an urgent need for energy security and climate resilience, Ghana's green transition sub-sectors are poised for explosive growth. This cluster, encompassing Renewable Energy Technology, Smart Grids, Environmental Technology, and Climate Innovation, is rapidly becoming a major pillar of the Platinum Economy, creating a diverse array of high-value jobs from engineering and research to policy and finance.

### **7.1 Sub-sector Overview and Market Dynamics**

The green transition is a national strategic priority. The energy sector, which contributes 63% of the country's greenhouse gas emissions, is the primary focus of decarbonization efforts.<sup>77</sup> This is driven by two key policy documents: the

**Renewable Energy Master Plan (REMP)**, which aims for 1,363.63 MW of grid-connected renewable energy (non-hydro) by 2030 <sup>41</sup>, and the more ambitious

**Energy Transition and Investment Plan (ETIP)**, which sets a target of net-zero emissions by 2060.<sup>42</sup> The ETIP is particularly significant as it projects the creation of

**400,000 net new jobs** by 2060, anchoring the green economy as a future engine of employment.<sup>42</sup>

The market is heavily supported by international climate finance. An annual average



of USD 830 million in climate finance flowed into Ghana in 2019-2020, with the energy and agriculture/forestry sectors being the largest recipients.<sup>77</sup> Major partners like the Climate Investment Funds (CIF), Germany's GIZ, and the World Bank are channeling hundreds of millions of dollars into renewable energy, forest conservation, and climate adaptation projects.<sup>31</sup> This influx of capital is creating a stable, long-term demand for green skills and expertise.

## 7.2 Key Employers and Organizational Context

The employment landscape for the green transition is a multi-stakeholder environment involving public institutions, private companies, and non-governmental organizations.

273. **Government and Regulatory Bodies:** The **Ministry of Energy**, the **Energy Commission**, and the **Ministry of Finance's Climate Financing Division** are key public sector employers, responsible for policy formulation, regulation, and managing climate funds.<sup>33</sup> State-owned enterprises like the **Bui Power Authority** are major project developers, implementing large-scale solar projects, including Africa's largest floating solar farm.<sup>41</sup>
274. **Private Sector Companies:** A growing number of private companies are active in the renewable energy space. These range from solar project developers and installers like **Suka Solar Ghana**<sup>78</sup> to environmental engineering consultancies like **SAL Consult**<sup>79</sup>, which provide specialized services for infrastructure and industrial projects.
275. **Innovation Hubs and NGOs:** The **Ghana Climate Innovation Centre (GCIC)** is a critical incubator, supporting dozens of green startups with funding and business development services.<sup>16</sup> International organizations like the **UNDP** and **GIZ** implement numerous climate-related projects, often hiring local experts and consultants.<sup>32</sup>

## 7.3 Employment Role Inventory and Analysis

The roles within this cluster are diverse, spanning the entire project lifecycle from research and development to policy, implementation, and monitoring.

**276. Formal Full-Time Employment & Consultancy:**

1. **Solar/Wind Systems Engineer:** These engineers are responsible for the design, planning, implementation, and maintenance of renewable energy projects. This includes conducting site assessments, designing system layouts, and overseeing installation and commissioning.<sup>78</sup>
2. **Energy Storage Research and Development Scientist:** With the increasing share of intermittent renewables like solar, energy storage is critical. These scientists work on developing and improving battery and other storage technologies.
3. **Grid Automation Specialist / Smart Grid Engineer:** These professionals work on modernizing the electrical grid to better integrate renewable energy sources. Their responsibilities include implementing smart metering, developing demand-response systems, and using IoT for energy management.<sup>67</sup>
4. **Climate Data Scientist:** This emerging role involves analyzing large climate and environmental datasets to model climate change impacts, assess risks, and inform adaptation strategies. Experience with climate modeling and programming languages like Python or R is essential.<sup>81</sup>
5. **Environmental Modeling Specialist:** This role focuses on using specialized software and models to predict the environmental impacts of large-scale projects, such as infrastructure or mining, and to design mitigation measures.
6. **Environmental Specialist (Policy and Impact Assessment):** A role frequently hired for by government ministries and development partners (e.g., for World Bank-funded projects), these experts are responsible for ensuring projects comply with national environmental laws and international standards. They prepare Environmental and Social Impact Assessments (ESIAs), manage grievance mechanisms, and provide capacity building.<sup>34</sup>
7. **Forestry Management and Conservation Specialist:** Focused on the land-use aspect of climate action, these specialists work on projects related to reducing deforestation (REDD+), promoting sustainable agroforestry, and managing community conservation areas.<sup>82</sup>

**277. Internships and Volunteer Engagements:**

1. Many NGOs and research projects in the environmental space offer internships and volunteer opportunities for students and recent graduates to gain field experience in conservation, community engagement, and data

collection.

## 7.4 Skills, Qualifications, and Compensation Intelligence

The required competencies are a mix of hard engineering skills, data analytics capabilities, and a deep understanding of environmental science and policy.

278. **Technical and Domain Skills:** A deep technical knowledge of **renewable energy technologies** (solar PV, wind turbines) is fundamental for engineering roles. Expertise in **energy modeling software** is crucial for planning and analysis. For data-focused roles, advanced skills in **climate data analysis** using **Python or R** are in high demand.<sup>81</sup> For policy and compliance roles, a thorough understanding of **environmental impact assessment (EIA) methodologies** and familiarity with the **World Bank's Environmental and Social Standards (ESSs)** and other Good International Industry Practices (GIIP) is critical.<sup>34</sup>
279. **Qualifications and Certifications:** A Bachelor's degree in Engineering (Electrical, Mechanical, Environmental), Environmental Science, or Natural Resource Management is the typical entry point. However, for many specialized roles, such as Environmental Specialist or Forestry Management Specialist, a **Master's degree (MSc or MPhil) is the minimum requirement.**<sup>34</sup> At least five to eight years of relevant professional experience is often expected for these senior consultancy and advisory roles.<sup>34</sup>
280. **Compensation Intelligence:** Given the requirement for advanced degrees and significant professional experience, roles in the green transition sector are well-compensated. Competitive salary grids are offered by major employers like GIZ.<sup>71</sup> While specific market-wide data is limited, the high demand for this specialized expertise, driven by massive policy and financial commitments, places these professionals in the upper echelon of the local job market.

A critical consideration for policymakers is the socio-economic impact of this transition. The projection of 400,000 net new green jobs <sup>42</sup> is a monumental opportunity. However, this must be balanced against potential disruptions in other sectors. One academic study using a dynamic ARDL simulation model found that while an aggressive energy transition scenario boosts employment in the industrial sector, it could have a negative impact on employment in the agriculture sector.<sup>83</sup> This

highlights the critical need for a "Just Transition" framework—a set of policies designed to manage the workforce shift from traditional, carbon-intensive sectors to the new green economy. This creates a crucial space for high-value policy research, economic modeling, and advisory roles focused on designing re-skilling programs, social safety nets, and targeted investments to ensure that the benefits of the green transition are shared equitably across all segments of the workforce.

## **Chapter 8: The Bio-Revolution: Biotechnology, Pharmaceutical Research, and Digital Health**

The bio-revolution cluster in Ghana's Platinum Economy represents a convergence of established industrial capacity in pharmaceuticals with high-potential, knowledge-intensive fields like biotechnology, bioinformatics, and digital health. This sector is driven by the dual imperatives of improving public health outcomes and leveraging scientific innovation for economic development. While still maturing, it is creating a growing number of specialized roles for scientists, researchers, and technology innovators.

### **8.1 Sub-sector Overview and Market Dynamics**

This cluster is composed of three interconnected parts. First, a **pharmaceutical manufacturing sector** with established local players like Dannex Ayrton Starwin PLC and Kinapharma, who have significant production and distribution capabilities.<sup>84</sup> Second, a nascent but important

**biotechnology research ecosystem**, anchored by public institutions like the Biotechnology and Nuclear Agriculture Research Institute (BNARI), which focuses on applying advanced biological sciences to agriculture and health.<sup>85</sup> Third, a rapidly emerging

**digital health and telehealth sector**, pioneered by innovative startups like mPharma, which are using technology to fundamentally reshape healthcare delivery, particularly in pharmacy and primary care access.<sup>86</sup>

The market is shaped by a growing demand for quality healthcare, a policy push to strengthen local pharmaceutical production, and the opportunities presented by digital technology to overcome long-standing healthcare access challenges. A key challenge is the need for a more robust and updated national digital health policy to guide and regulate the sector's growth and address issues of data privacy and equity.<sup>9</sup>

## 8.2 Key Employers and Organizational Context

The employers in this domain are a mix of public research institutes, private industrial companies, and agile technology startups.

281. **Public Research Institutions:** The **Biotechnology and Nuclear Agriculture Research Institute (BNARI)**, part of the Ghana Atomic Energy Commission, is a leading public institution. Its Biotechnology Centre undertakes R&D in plant tissue culture, molecular biology, and mutation breeding to improve food crops and medicinal plants.<sup>85</sup> Universities like the **University of Ghana** also contribute through their biochemistry and molecular biology departments, often employing research assistants.<sup>87</sup>
282. **Pharmaceutical Companies:** Large local manufacturers such as **Dannex Ayrton Starwin PLC**, **Kinapharma**, and **Eskay Therapeutics** are major employers in the pharmaceutical industry.<sup>84</sup> International organizations like the **U.S. Pharmacopeia (USP)** also operate in Ghana, hiring technical advisors to work on quality assurance and regulatory strengthening with local manufacturers.<sup>88</sup>
283. **Digital Health and Telehealth Startups:** **mPharma** is a standout pioneer in this space. Headquartered in Accra, it operates across nine African countries, using technology to manage prescription drug inventory and has expanded to create a network of virtual doctor centers within pharmacies, effectively pioneering a new model of telehealth.<sup>86</sup>
284. **Hospitals and Clinical Laboratories:** Both public and private hospitals and labs (e.g., Tema General Hospital) provide employment and practical training opportunities for laboratory assistants and technicians.<sup>87</sup>

### 8.3 Employment Role Inventory and Analysis

The roles in this cluster are highly specialized and often require advanced scientific or technical training.

#### 285. **Formal Full-Time and Research Positions:**

1. **Biotech Research Scientist:** Primarily found at institutions like BNARI, these scientists conduct research in areas like molecular genetics, plant pathology, and tissue culture. Responsibilities include developing *in vitro* protocols, conducting genetic diversity analysis, and improving crop varieties through mutagenesis and molecular techniques.<sup>85</sup>
2. **Life Sciences Laboratory Scientist / Assistant:** These roles exist in research institutions, hospitals, and pharmaceutical companies. Responsibilities include performing clinical laboratory techniques, managing samples, operating instrumentation, and ensuring lab operations run smoothly.<sup>87</sup>
3. **Bioinformatics Analyst:** An interdisciplinary role that involves using computational tools to analyze large biological datasets, such as genomic or proteomic data. This is crucial for modern genetic research and drug discovery.
4. **Regulatory Affairs Specialist / Technical Advisor (Pharma):** This role, exemplified by the position at U.S. Pharmacopeia, involves ensuring pharmaceutical products meet regulatory standards. Responsibilities include participating in Good Manufacturing Practice (GMP) audits, compiling technical product dossiers for submission to regulators like the Ghana FDA, and providing technical assistance to manufacturers to close quality gaps.<sup>88</sup>
5. **Clinical Trial Coordinator:** Responsible for managing the operational aspects of clinical trials for new drugs or medical devices, ensuring they are conducted in accordance with regulatory protocols and ethical guidelines.
6. **Health Data Scientist / Health Informatics Specialist:** These professionals work at the intersection of healthcare and data. They analyze health data to improve patient care, streamline operations, and support clinical decisions. They are crucial for optimizing Electronic Health Record (EHR) systems and developing new technologies like telemedicine platforms.<sup>90</sup> The University of Ghana offers a Master's program in Health Informatics (MHI), indicating a formal pathway for this career.<sup>91</sup>
7. **Telemedicine Platform Developer:** A software engineering role focused on

building and maintaining the technology backbone for telehealth services. This includes developing secure patient portals, video consultation features, and integrations with pharmacy and EMR systems.

286. **Internships and Trainee Positions:**

- **Research Assistant:** Often filled by recent graduates, these positions at universities and research institutes provide hands-on experience in laboratory techniques and data analysis.<sup>87</sup>
- **Laboratory Assistant (Intern):** Hospitals and research labs offer internships that provide practical experience in a clinical or research setting.<sup>87</sup>

## 8.4 Skills, Qualifications, and Compensation Intelligence

The bio-revolution demands a highly educated and skilled workforce.

- **Technical and Domain Skills:** For research roles, deep expertise in **molecular biology techniques, plant tissue culture, and genetics** is required.<sup>85</sup> Laboratory roles require proficiency in **clinical laboratory techniques**, instrumentation, and sample management.<sup>87</sup> Regulatory roles demand a thorough understanding of **pharmaceutical quality assurance**, GMP standards, and the process of compiling Common Technical Document (CTD) dossiers.<sup>88</sup> Digital health roles require skills in **data analysis, software development**, and knowledge of **healthcare IT systems** and data privacy regulations.<sup>90</sup>
- **Qualifications and Certifications:** A Bachelor's degree in a relevant science (Biochemistry, Molecular Biology, Microbiology, Pharmacy) is the minimum entry requirement. However, for most research and specialist roles, a **Master's degree or a PhD is essential**.<sup>87</sup> For Health Informatics, a Master's in the field is becoming the standard.<sup>91</sup>
- **Compensation Intelligence:** Salaries for these highly specialized roles are expected to be in the upper tier of the Ghanaian market, though specific public data is limited. The demand for individuals with advanced degrees and specialized technical skills in these high-impact fields ensures competitive compensation packages.

A notable feature of this cluster is the apparent disconnect between the advanced



agricultural biotechnology research being conducted at public institutions like BNARI and the commercial healthcare innovation driven by private startups like mPharma. While BNARI is making strides in crop science and medicinal plant research <sup>85</sup>, the most visible market disruption is coming from the digital health space, which is focused on service delivery and access.<sup>86</sup> The urgent need for an updated and comprehensive national digital health policy <sup>9</sup> creates a significant opportunity for a new class of professional: the

**Health Informatics Specialist.** These individuals, equipped with skills in data science, systems analysis, and healthcare policy, are perfectly positioned to bridge this gap. They can apply data-driven approaches to translate research findings into practical healthcare solutions, optimize the deployment of telehealth platforms, and help shape the very regulatory framework that will govern the future of healthcare in Ghana.

## **Chapter 9: The Agritech Revolution**

Ghana's agricultural sector, a cornerstone of its economy, is undergoing a technological transformation. A vibrant and increasingly well-funded ecosystem of Agricultural Technology (Agritech) startups is applying digital tools, data analytics, and innovative business models to address long-standing challenges in the agricultural value chain. This Agritech revolution is creating a new category of Platinum Economy jobs that merge agricultural knowledge with technological expertise, aiming to boost productivity, improve farmer incomes, and enhance food security.

### **9.1 Sub-sector Overview and Market Dynamics**

The Agritech sector in Ghana is characterized by a dynamic startup scene that is attracting significant international investment. The core market challenge these startups address is the fragmentation and inefficiency of the smallholder-dominated agricultural system. Farmers often struggle with limited access to quality inputs (seeds, fertilizers), financing, agronomic advice, and direct, profitable markets for

their produce.<sup>27</sup> Agritech companies are tackling these issues by creating platforms that connect farmers to resources and buyers, leveraging mobile technology, IoT, and data analytics. A key market trend is the evolution from purely software-as-a-service (SaaS) models to hybrid models that combine digital platforms with physical infrastructure, such as warehouses and logistics hubs, to solve last-mile delivery and quality control problems.<sup>27</sup>

## 9.2 Key Employers and Organizational Context

The primary employers in this sub-sector are the Agritech startups themselves, along with the innovation hubs and investment programs that support them.

- **Agritech Startups:**

- **Complete Farmer:** A leading Ghanaian agritech company that has built a digital marketplace connecting farmers to global food buyers. The company has raised significant capital, including \$10 million in 2023 and a €2.2 million (~\$2.5M) investment from the EU's AgriFI initiative in June 2025 to build six rural fulfillment centers in northern Ghana.<sup>26</sup>
- **Farmerline:** Another major player that provides digital tools and services to farmers and agribusinesses. The company has reached over 2.2 million farmers across 50 countries and is an active employer in Ghana, with roles in software engineering and business development.<sup>61</sup>
- **AkoFresh:** A startup focused on tackling post-harvest losses by providing innovative solar-powered cold storage solutions for farmers, helping them preserve crops and access markets for longer periods.<sup>93</sup>

- **Innovation Hubs and Accelerators:**

- **Kosmos Innovation Center (KIC):** A key ecosystem builder that runs the **AgriTech Challenge Pro**, an annual competition that provides mentorship, training, and seed funding (from \$5,000 to \$25,000) to youth-led agribusiness startups. It is a major pipeline for new ventures in the sector.<sup>30</sup>
- **Ghana Climate Innovation Centre (GCIC):** While its mandate is broader, GCIC has a specific focus on climate-smart agriculture and has partnered with Farmerline to provide incubation support to agribusinesses in its network.<sup>16</sup>

### 9.3 Employment Role Inventory and Analysis

The roles in Agritech are diverse, reflecting the need to combine deep agricultural understanding with modern technological and business skills.

- **Formal Full-Time Employment:**

- **Agritech Startup Founder/Manager:** Leadership roles that require a blend of entrepreneurial vision, business acumen, and a deep understanding of the agricultural sector. Founders like Desmond Koney of Complete Farmer are key figures in the ecosystem.<sup>29</sup>
- **Software Engineer (Full Stack, Mobile):** These are core technical roles responsible for building and maintaining the digital platforms that power Agritech services. Farmerline, for instance, hires for Senior Software Engineer (Full Stack) and Senior Mobile Software Engineer (iOS, Android) roles in Accra.<sup>61</sup> Responsibilities include designing and deploying scalable solutions for the agricultural value chain.
- **Precision Agriculture Specialist:** These experts use technologies like GPS, sensors, and drones to optimize farm management. They analyze data to provide farmers with precise recommendations on planting, irrigation, and fertilization, aiming to increase yields and reduce input waste.
- **Drone Operator and Data Analyst (Farming Applications):** A specialized role that involves operating agricultural drones to capture aerial imagery and then analyzing that data to assess crop health, detect pests and diseases, and create management plans. The University of Energy and Natural Resources (UENR) has notably deployed an AI-powered mobile app for pest detection, showcasing the application of this technology in Ghana.<sup>66</sup>
- **IoT Sensor Integration Engineer:** Responsible for deploying and maintaining networks of IoT sensors on farms to monitor soil moisture, weather conditions, and other environmental factors, feeding real-time data into management platforms.
- **Business & Partnership Manager:** A strategic role, such as the one at Farmerline, responsible for managing client relationships, overseeing project delivery, and building lasting partnerships with stakeholders like NGOs, global food companies, and government institutions.<sup>92</sup>

- **Contract and Part-Time Arrangements:**

- **Field Agents/Agronomists:** Many Agritech models rely on a network of field agents who work on a contract basis to train farmers, collect data, and

facilitate the delivery of inputs and aggregation of produce.

## 9.4 Skills, Qualifications, and Compensation Intelligence

Success in Agritech requires a unique combination of skills.

287. **Technical and Domain Skills:** For technical roles, proficiency in **full-stack and mobile development** is key.<sup>61</sup> A fundamental understanding of **agricultural science, agronomy, and supply chain logistics** is essential for all business and product roles. Expertise in **data analytics, GIS**, and the operation of **drones and IoT devices** is increasingly in demand. For partnership roles, skills in project management, stakeholder engagement, and report writing are crucial.<sup>92</sup>
288. **Qualifications and Certifications:** Technical roles typically require a Bachelor's degree in Computer Science or a related field.<sup>61</sup> Business and partnership roles often require a degree in an appropriate field plus several years of project management experience, with a PMP certification being a plus.<sup>92</sup> For specialist roles like Precision Agriculture Specialist, a degree in Agricultural Engineering or a related discipline is necessary.
289. **Compensation Intelligence:** As a well-funded startup sector, Agritech offers competitive salaries to attract top talent, particularly for experienced software engineers and business managers. While specific data is proprietary, the significant venture capital flowing into companies like Complete Farmer and Farmerline suggests they can compete effectively in the local talent market.

A significant shift in the Ghanaian Agritech landscape is the move from purely digital solutions to a more integrated, hybrid model that combines technology with essential physical infrastructure. The decision by Complete Farmer to invest its €2.2 million EU funding into building six physical fulfillment centers in the underserved northern regions is a prime example of this trend.<sup>27</sup> This strategy recognizes that a mobile app alone cannot solve the fundamental challenges of poor storage, inconsistent quality, and broken supply chains. This evolution is creating a new set of hybrid roles within the Platinum Economy that blend technology skills with expertise in

**logistics, warehouse management, quality control, and physical supply chain optimization.** These professionals are tasked with ensuring that the digital promise of market access is met with the physical reality of getting a quality-controlled

product from a rural farm to a global buyer, representing a more mature and impactful phase of the Agritech revolution.

## **Chapter 10: The Knowledge and Creative Engine: R&D, Digital Media, and High-Value Consultancy**

This cluster represents the pinnacle of the knowledge economy, encompassing roles dedicated to creating new intellectual property, shaping brand narratives with advanced technology, and providing strategic advice to guide digital transformation. These sub-sectors—Research and Development (R&D), Digital Media & Creative Technology, and High-Value Consultancy—are characterized by their demand for deep expertise, creativity, and strategic thinking.

### **10.1 Sub-sector Overview and Market Dynamics**

The R&D landscape in Ghana is anchored by public research institutions and the burgeoning innovation activities within private firms and universities. The national innovation policy and the establishment of specialized research centers at universities like UG and KNUST are key drivers.<sup>4</sup> The Digital Media and Creative Technology sector is evolving beyond traditional media, with a growing demand for skills in immersive technologies (AR/VR) and data-driven digital marketing. High-Value Consultancy is driven by the increasing complexity of the market, with firms needing expert guidance on digital strategy, regulatory compliance, and sustainability.

### **10.2 Key Employers and Organizational Context**

- **Research and Development:** Key employers include university research centers like **KNUST's KEEP** (Quantum Lab)<sup>23</sup> and **UG's Computer Science research groups**<sup>20</sup>, public institutes like **BNARI**<sup>85</sup>, and the R&D departments of large tech and industrial firms.

- **Digital Media and Creative Technology:** Employers include creative agencies, marketing departments of large corporations, media production houses like **Mobile Sport Ghana**, and technology companies developing creative tools.<sup>94</sup> A nascent AR/VR development scene includes firms like **Appsinfo** and **Nusite IT Consulting**.<sup>95</sup>
- **High-Value Consultancy and Advisory:** This includes global consulting firms with a presence in Accra, specialized local advisory firms, and the consulting arms of major technology companies like IBM and Microsoft.<sup>97</sup> Legal and financial firms also offer high-end advisory services related to technology and regulation.

### 10.3 Employment Role Inventory and Analysis

- **Formal Full-Time and Contract Roles:**
  - **Technology Research Scientist:** These roles, often at the PhD level, are found in universities and dedicated R&D labs. They work on advancing fundamental knowledge in fields like AI, quantum computing, or biotechnology.<sup>23</sup>
  - **Innovation Manager:** A corporate role responsible for identifying and developing new technologies and business models, managing the innovation pipeline, and fostering partnerships with startups and universities.
  - **Multimedia Artist (Videography, Motion Graphics):** A creative role, as seen at Mobile Sport Ghana, responsible for conceptualizing, shooting, and producing high-quality video content, including motion graphics and animations, for marketing and communication.<sup>94</sup> Requires proficiency in tools like Adobe Creative Suite (Premiere, After Effects).
  - **Digital Marketing Officer (Graphics and Videography):** This role combines creative skills with marketing strategy, handling all visual designs, videos, and social media content to promote a brand and its products.<sup>94</sup>
  - **Augmented/Virtual Reality (AR/VR) Developer:** A specialized software development role focused on building immersive experiences. While still a niche area, companies like Appsinfo offer services in ARKit development, WebAR, and Unity AR.<sup>95</sup>
  - **Management Consultant (Digital Transformation & Strategy):** High-level advisory roles that help organizations navigate the complexities of digitalization. Consultants analyze business processes, recommend

technology solutions, and guide the implementation of strategic change initiatives.

- **Legal Technology Specialist:** A hybrid role combining legal expertise with technological proficiency, advising law firms and corporate legal departments on the adoption of technology for e-discovery, contract management, and compliance.

## 10.4 Skills, Qualifications, and Compensation Intelligence

- **Skills and Qualifications:** R&D roles typically require a Master's or PhD in a specialized field. Creative technology roles demand a strong portfolio and proficiency in industry-standard software (e.g., Adobe Creative Suite, Unity, Unreal Engine).<sup>94</sup> Consultancy roles require a combination of deep industry knowledge, strong analytical and communication skills, and often an MBA or equivalent advanced degree.
- **Compensation Intelligence:** These roles are at the highest end of the compensation spectrum. High-value consultants and senior R&D scientists command premium salaries due to their specialized expertise and the strategic value they bring to organizations.

## Chapter 11: The Ecosystem Workforce: Building and Sustaining Innovation

Beyond the companies creating products and services, a dedicated workforce exists to build, manage, and sustain the innovation ecosystem itself. These roles are found within innovation hubs, accelerator programs, venture capital firms, training institutions, and community organizations. This "meta-level" workforce is critical for the health and growth of the entire Platinum Economy.

### 11.1 Sub-sector Overview and Market Dynamics



The growth of the ecosystem workforce is directly tied to the expansion of the innovation landscape. As more hubs, funds, and training programs are established, the demand for people to run them increases. This sector is heavily influenced by donor funding and partnerships (e.g., GIZ, Mastercard Foundation, Global Affairs Canada) which often support the operational costs of these ecosystem-building organizations.<sup>17</sup> A key dynamic is the evolution of talent platforms like Andela and Turing, which are not just employers but are themselves a crucial part of the ecosystem's infrastructure, acting as global talent aggregators, quality assurers, and career managers for African tech professionals.

## 11.2 Key Employers and Organizational Context

- **Innovation Hubs and Accelerators:** MEST Africa, Impact Hub Accra, GCIC, and the KIC are primary employers.<sup>11</sup>
- **Venture Capital and Investment Firms:** Both local and international funds investing in Ghana require staff for deal sourcing, due diligence, and portfolio management.
- **Training and Capacity Building Organizations:** This includes coding bootcamps, specialized training providers like **DevWorld Tech Academy** <sup>54</sup>, and large-scale talent platforms like **Andela** and **Turing.com**.<sup>47</sup>
- **Professional Associations and Think Tanks:** Bodies like the **Ghana ICT Chamber** <sup>1</sup> and **Data Science Ghana** <sup>99</sup> employ staff for advocacy, community building, and event management.

## 11.3 Employment Role Inventory and Analysis

- **Formal and Contract Roles:**
  - **Accelerator/Incubator Program Manager:** Responsible for designing and executing accelerator programs, including recruiting startups, developing curricula, managing mentors, and organizing demo days. The Project Manager role at Terraformation for its Forest Accelerator program is a

specific example of this type of role, requiring project management, partner relations, and experience in the relevant sector (forestry/carbon projects).<sup>19</sup>

- **Venture-Building Consultant:** These experts work closely with early-stage startups within an incubator or venture studio, providing hands-on support to develop business models, product strategies, and go-to-market plans.<sup>100</sup>
- **Startup Community Coordinator/Manager:** A role focused on building and engaging the local tech community. Responsibilities include organizing meetups, hackathons, and networking events, managing online forums, and acting as a central point of contact for entrepreneurs.
- **Technology Trainer / Bootcamp Instructor:** These professionals deliver training in high-demand technical skills. They are employed by bootcamps, academies like DevWorld, and hubs that run their own training programs.<sup>54</sup>
- **Technology Scout / Talent Matcher:** A role central to the business model of platforms like Andela. These professionals are responsible for identifying and vetting tech talent, understanding their skills and career goals, and matching them with suitable opportunities at global companies.<sup>50</sup>
- **Instructional Designer:** A specialized role, seen at institutions like Ashesi University, responsible for working with faculty or trainers to design engaging and effective learning experiences, particularly for blended or online environments. They recommend appropriate technologies, develop course materials, and create assessments.<sup>101</sup>

#### 11.4 Skills, Qualifications, and Compensation Intelligence

- **Skills and Qualifications:** These roles require a unique blend of skills. Program managers need strong organizational and project management abilities. Community managers need excellent communication and networking skills. Trainers need deep technical expertise combined with pedagogical skills. Talent matchers need a good understanding of technology roles and strong interpersonal skills. An understanding of the startup lifecycle and venture finance is valuable across the board.
- **Compensation Intelligence:** Compensation varies widely depending on the organization and its funding model. Roles at well-funded, international organizations or platforms like Andela are likely to be compensated competitively, while roles at smaller, grant-dependent local hubs may be more

modest.

The business models of **Andela** and **Turing** are particularly noteworthy. They represent a sophisticated evolution of the ecosystem workforce. By creating a global, remote marketplace for talent, they have built a scalable infrastructure that provides African technologists with access to opportunities that were previously unattainable. Their model includes not just matching but also continuous support, upskilling, and career management.<sup>47</sup> They are, in effect, a privatized, highly efficient form of workforce development and export promotion, playing a role that in other economies might be partially filled by government agencies. Understanding their operations is key to understanding the future of high-value work in Ghana and across the continent.

---

## **Part III: Strategic Synthesis and Forward-Looking Recommendations**

This final section synthesizes the granular analysis of the preceding chapters into a cohesive strategic overview. It audits the state of human capital, examines the geographic and infrastructural dimensions of opportunity, and culminates in a set of forward-looking, actionable recommendations for the key stakeholders responsible for shaping the future of Ghana's Platinum Economy.

### **Chapter 12: The Human Capital Imperative - A National Skills and Competency Audit**

The ultimate determinant of the success of Ghana's Platinum Economy is the quality and availability of its human capital. While the nation possesses a young, dynamic, and ambitious workforce, a significant and persistent gap exists between the skills demanded by its most advanced economic sectors and the competencies being supplied by its traditional education and training systems. This chapter provides a comprehensive audit of this human capital landscape, identifying the most critical skills shortages and evaluating the ecosystem's capacity to address them.

## 12.1 Synthesis of Skills Demand

The detailed analysis of employment roles in Part II reveals a clear and consistent pattern of demand for a sophisticated blend of technical and soft skills. Across all sub-sectors, from Advanced ICT to Green Technology, employers are seeking professionals who possess not only deep technical proficiency but also the ability to collaborate, problem-solve, and adapt in a rapidly changing environment.

- **Core Technical Competencies:** The most frequently demanded hard skills are concentrated in software development and data analysis. These include mastery of programming languages like **Python** and **JavaScript**, expertise in cloud platforms (**AWS, Azure, GCP**), and proficiency with modern development tools and methodologies such as **Kubernetes, Docker, Git, and Agile/Scrum**.
- **Specialized Domain Knowledge:** Beyond these core competencies, there is a growing demand for specialized, domain-specific knowledge. In Fintech, this includes expertise in **financial regulations (Act 987), payment protocols, and IFRS**. In the Green Transition sector, it involves knowledge of **renewable energy systems, climate modeling, and environmental impact assessment standards**. In Agritech, it is a deep understanding of **agronomy and agricultural supply chains**.
- **Essential Soft Skills:** Perhaps most critically, especially in the context of globally integrated remote work, is the demand for a specific set of soft skills. These include **proactive communication, cross-cultural collaboration, self-management, critical thinking, and a demonstrable commitment to continuous learning**.

## 12.2 The Skills Gap Analysis

The existence of a significant skills gap is a well-documented reality. A 2019 report by the International Finance Corporation (IFC) and the World Bank, "Digital Skills in Sub-Saharan Africa: Spotlight on Ghana," provided a stark assessment, noting a significant undersupply of digital skills versus demand at all levels.<sup>3</sup> This finding is echoed in the 2023 Global Innovation Index, which explicitly identified the need for

"stronger ICT university curricula" as a key area for improvement for Ghana.<sup>4</sup> Local analyses, such as the 2024 Ghana Tech Ecosystem Survey, also point to challenges, including a "brain drain" effect where competitive compensation for scarce skills is difficult for local startups to meet.<sup>62</sup>

The gap is most acute in the most advanced and rapidly growing fields. While basic digital literacy is improving, there are critical shortages of professionals with intermediate and advanced skills in **Artificial Intelligence, Data Science, Cybersecurity, and Cloud Engineering**. Furthermore, a study on Ghana's technical universities revealed a perception among faculty that they lack the industrial skills and knowledge required to deliver on their mandate of producing industry-ready graduates, pointing to a systemic issue within the formal education system.<sup>103</sup> The International Trade Centre's 2022 ecosystem mapping report reinforced this, noting that recent university graduates often lack the soft skills and industry experience necessary to be immediately productive.<sup>104</sup>

### 12.3 Evaluating the Training Ecosystem

In response to these gaps, a diverse and dynamic training ecosystem has emerged, operating largely in parallel to the traditional university system.

290. **Formal Education:** As noted, technical universities and other tertiary institutions are currently struggling to keep pace with industry needs.<sup>103</sup> While they provide a crucial foundation in theoretical concepts, their curricula often lack the practical, project-based, and up-to-date content required by the Platinum Economy.
291. **Alternative Pathways:** The market has responded with a variety of alternative training models. **Innovation hubs and accelerators** like MEST Africa and the Ghana Climate Innovation Centre have become key training providers, offering intensive, domain-specific programs that combine technical skills with entrepreneurship and business development.<sup>11</sup> Specialized, focused events like the **Ghana Data Science Summit (IndabaX Ghana)** provide hands-on, practical training in cutting-edge fields like applied machine learning and responsible AI, directly addressing the skills deficit.<sup>44</sup> At a broader level, the government's **National Apprenticeship Programme (NAP)**, launched in 2025, represents a

major public investment in vocational and practical skills training, which provides a foundation upon which more advanced digital skills can be built.<sup>73</sup>

The following matrix provides a strategic overview of the skills landscape, mapping demand against perceived supply and identifying key training providers. This serves as a foundational tool for prioritizing workforce development investments.

|   |                     |                         |  |   |
|---|---------------------|-------------------------|--|---|
| <b>Table 12.1:<br/>Ghana's<br/>Platinum<br/>Economy Skills<br/>Matrix -<br/>Demand vs.<br/>Perceived<br/>Supply</b> |                     |                         |  |   |
| <b>Skill Category</b>   | <b>Demand Level</b> | <b>Perceived Supply</b> | <b>Key Training Providers</b>                                | <b>Recommended Action</b>   |
| <b>Cloud Engineering (AWS, Azure, GCP)</b>  | High                | Low                     | MEST, Bootcamps, Global Certifiers                           | Scale Up Targeted Bootcamps; Integrate Certifications into University Curricula |
| <b>AI / Machine Learning Engineering</b>  | High                | Very Low                | Ghana Data Science Summit, Google AI Center, KNUST (Quantum) | Develop Specialized Master's Programs; Fund Public-Private AI Research Labs     |
| <b>Cybersecurity &amp; Compliance</b>   | High                | Low                     | Telecel, Crossover (for global roles)                        | Create Professional Certifications with DPC/BoG; Mandate in Public Sector IT    |
| <b>Fintech &amp;</b>  | High                | Low                     | Bank of Ghana  | Launch  |

|   |             |          |  |  |
|---|-------------|----------|--|--|
| <b>Regulatory Technology (RegTech)</b>        |             |          | (Sandbox), MEST                                | Specialized Fintech Tracks in University Business/CS Programs                    |
| <b>Data Science &amp; Analytics (General)</b> | High        | Medium   | UG, KNUST, Data Science Ghana, Blossom Academy | Strengthen Practical, Project-Based Components in University Courses             |
| <b>Mobile &amp; Full-Stack Development</b>    | High        | Medium   | AmaliTech, Andela, Turing, Local Bootcamps     | Expand National Apprenticeship Programme to include Digital Trades               |
| <b>Renewable Energy Systems &amp; Policy</b>  | Medium-High | Low      | KNUST (Energy Centre), GCIC                    | Develop Vocational and University Programs in Partnership with Energy Commission |
| <b>Agritech (Data, IoT, Business)</b>         | Medium      | Low      | KIC, Farmerline, GCIC, Complete Farmer         | Create Interdisciplinary Agritech Programs (Agriculture + CS + Business)         |
| <b>Health Informatics</b>                     | Medium      | Very Low | UG (MHI Program)                               | Expand Postgraduate Health Informatics Programs; Partner with GHS                |
| <b>Soft Skills (Collaboration,</b>            | High        | Low      | MEST, Impact Hub,                              | Embed Mandatory  |



|                |  |  |                          |  |
|----------------|--|--|--------------------------|--|
| Communication) |  |  | Andela/Turing (implicit) | Professional Skills & Ethics Courses in all STEM curricula |
|----------------|--|--|--------------------------|--|

This matrix makes the central challenge clear: the areas with the highest and most strategic demand—AI, Cloud, Cybersecurity, and specialized domains like Fintech and Health Informatics—are precisely the areas with the lowest perceived supply of qualified talent. This disconnect is the primary constraint on the growth of Ghana's Platinum Economy and must be the central focus of any national workforce development strategy.

### Chapter 13: Geographic and Infrastructural Dimensions of Opportunity

The distribution of opportunity within Ghana's Platinum Economy is not uniform. It is heavily concentrated geographically, yet simultaneously being decentralized by the powerful force of remote work. Understanding these spatial dynamics—the pull of urban hubs, the promise of remote connectivity, and the potential of regional development—is crucial for crafting inclusive growth policies.

#### 13.1 The Accra-Kumasi Tech Corridor

The overwhelming majority of Platinum Economy activity is concentrated in a corridor between Ghana's two largest cities: Accra and Kumasi. Accra, as the national capital and commercial center, is the undisputed nexus of the ecosystem. It hosts the majority of technology companies, innovation hubs like Impact Hub Accra and MEST Africa, financial institutions, and government bodies.<sup>45</sup> Kumasi is rapidly emerging as a strong second hub, anchored by the engineering and research prowess of KNUST and catalyzed by ambitious projects like the Kumasi Airport City and its integrated technology hub.<sup>25</sup> This concentration is a natural outcome of agglomeration effects, where talent, capital, and infrastructure cluster together, creating a virtuous cycle of innovation and opportunity. However, it also risks creating a significant economic and social divide between this corridor and the rest of the country.

## 13.2 The Rise of Remote Work

The single most powerful force disrupting this geographic concentration is the global rise of remote work. As documented in Chapter 4, a significant portion of Ghana's top-tier tech talent is employed by international companies through platforms like Turing, Andela, and Crossover, or directly by remote-first companies like Canonical.<sup>45</sup> The 2024 Ghana Tech Ecosystem Survey confirms this seismic shift, finding that

**73% of technology professionals in Ghana now work in fully remote or hybrid arrangements.**<sup>62</sup>

This trend has profound implications. On one hand, it decouples economic opportunity from physical location. A skilled developer in Tamale or Takoradi can, in theory, access the same high-paying global job as their counterpart in Accra, provided they have the necessary infrastructure. This "work from anywhere" model offers a unique opportunity for Ghana to leapfrog the traditional, infrastructure-heavy urbanization model of development. It allows for the distribution of wealth and opportunity across the country, potentially mitigating rural-urban migration and fostering development in secondary cities and regions.

## 13.3 Regional and Rural Opportunities

While remote work offers a path to decentralization, targeted, place-based initiatives are also creating Platinum Economy opportunities beyond the main corridor.

The **Agritech revolution** is a prime example. Many of the sector's most pressing challenges and thus its greatest opportunities are located in the country's agricultural heartlands. The investment by Complete Farmer to build six fulfillment centers is specifically targeted at Ghana's five northern regions, creating skilled jobs in logistics, quality control, and platform management directly in these rural areas.<sup>26</sup>

Similarly, the **Green Transition** creates opportunities in remote locations. The deployment of renewable energy mini-grids to power off-grid communities requires

engineers and technicians to be based in those areas.<sup>67</sup> Sustainable forestry and conservation projects, by their very nature, are located in rural and forested regions, creating roles for environmental and forestry specialists.<sup>31</sup>

The success of both remote work and these place-based initiatives is, however, entirely contingent on closing the **infrastructural gap**. The current disparity in connectivity and reliable power between urban centers and the rest of the country is the primary barrier to realizing this vision of decentralized growth. The government's initiatives to deploy 2,016 rural connectivity sites and expand the national fiber backbone are therefore not just infrastructure projects; they are fundamental enablers of a more inclusive Platinum Economy.<sup>10</sup> Ghana's ability to strategically promote itself as a premier hub for remote African talent hinges entirely on its success in delivering reliable, affordable connectivity to all corners of the nation.

## **Chapter 14: Strategic Pathways to a World-Class Platinum Economy**

The analysis presented in this report reveals a Ghanaian Platinum Economy rich with potential but constrained by specific, addressable challenges. To transition from a promising emerging market to a world-class hub for innovation and high-value employment, a concerted and strategic effort is required from all key stakeholders. This chapter outlines clear, actionable recommendations for the government, educational institutions, and innovation ecosystem leaders, designed to unlock the nation's full potential.

### **14.1 For Government and Policymakers**

The government has a unique and powerful role to play in setting the foundational conditions for success. Its focus should be on strategic infrastructure investment, targeted legislative action for skills development, and ensuring an equitable transition for the entire workforce.

- **Recommendation 1: Double Down on Foundational Infrastructure.** The most significant brake on the growth of the high-end digital economy is the state of

digital infrastructure outside the main urban centers. The government must elevate the expansion of last-mile fiber-optic connectivity and the implementation of policies to drastically reduce data costs to a top national priority. This is not merely a utility issue; it is a core economic strategy to enable the growth of AI, cloud computing, and the burgeoning remote work sector, which offers the best path to inclusive, decentralized development.

- **Recommendation 2: Legislate for Strategic Skills Development.** The skills gap is too wide and too dynamic to be solved by the traditional education system alone. The government should create a **National Digital Skills Fund**, financed through a public-private partnership model (e.g., a small levy on technology service imports or profits from digital service taxes). This fund would be used to co-finance and provide quality assurance for a new generation of agile, industry-aligned training programs, such as coding bootcamps and professional micro-credentials. Funding should be competitively allocated to providers who can demonstrate strong industry partnerships and high graduate employment rates in the most in-demand fields identified in this report: AI, Cybersecurity, Cloud Engineering, and Climate Tech.
- **Recommendation 3: Embrace and Plan for a "Just Transition."** The economic shifts driven by the Platinum Economy, particularly the green transition, will create both winners and losers in the short term. As analysis suggests, a rapid shift to renewables could negatively impact employment in traditional sectors like agriculture.<sup>83</sup> The government must proactively design and implement a "Just Transition" policy framework. This should include dedicated funds for re-skilling workers from displaced industries, strengthening social safety nets, and providing targeted support for communities most affected by economic change. This requires sophisticated policy research and economic modeling, creating a need for high-level advisory roles within government.

## 14.2 For Educational and Training Institutions

Universities and other training institutions are on the front line of the human capital challenge. To remain relevant and contribute effectively, they must move from a supply-driven to a demand-driven model, forging deep and meaningful partnerships with the industry they aim to serve.

- **Recommendation 1: Radical Curriculum Reform through Mandatory Industry Partnerships.** Tertiary institutions, particularly those with STEM programs, should be mandated to establish formal, active partnerships with leading technology companies and industry bodies. These partnerships should go beyond occasional guest lectures to involve the **co-creation of curricula**. This means embedding practical, project-based learning, integrating industry-standard tools and certifications (e.g., AWS, Google Cloud, Salesforce), and creating structured internship and apprenticeship programs that are a required component of degree programs.
- **Recommendation 2: Launch Specialized, Interdisciplinary Postgraduate Programs.** Ghana's leading universities, particularly UG and KNUST, should leverage their research strengths to launch a suite of specialized postgraduate programs designed to meet the most advanced needs of the Platinum Economy. Based on the demand signals identified in this report, priority areas should include Master's degrees in **Quantum Computing, Health Informatics, Regulatory Technology (RegTech), Climate Finance, and Agritech Systems**. These programs should be interdisciplinary by design, combining technology with business, policy, and domain-specific knowledge.

### 14.3 For Innovation Ecosystem Leaders (Investors, Hubs, and Accelerators)

The private and non-profit leaders of the innovation ecosystem have a critical role in strengthening the connective tissue that enables startups to thrive. Their focus should shift from broad, generic support to deeper, more specialized interventions that build on Ghana's proven strengths.

- **Recommendation 1: Invest in "Ecosystem Enabler" Roles.** Venture capital firms and donor partners should strategically fund roles that strengthen the entire ecosystem, not just individual startups. This includes funding positions for **Venture-Builders-in-Residence** at university tech transfer offices, dedicated **Technology Talent Scouts** who can identify and nurture promising young talent, and **University-Industry Liaison Officers** whose sole job is to broker partnerships for research and internships. These roles provide the essential, often-missing, human infrastructure that connects ideas, talent, and capital.
- **Recommendation 2: Develop Thematic Venture Studios.** The era of the

generic incubator should give way to a more sophisticated model. Investors and ecosystem builders should establish **thematic venture studios** that focus on Ghana's clear areas of competitive advantage: **Fintech, Agritech, and Climate Tech**. Unlike a traditional accelerator, a venture studio would provide a cohort of startups with deep, shared domain expertise, dedicated legal and compliance support, and pre-built technology components relevant to that specific sector. This model would de-risk venture creation and significantly accelerate the path to market for startups in these high-potential fields.

By implementing these strategic pathways, Ghana can systematically address its current challenges, build on its considerable strengths, and accelerate its journey toward becoming a true leader in the global knowledge economy.

---

## Appendix: Master Employment and Ecosystem Directory

To support ongoing analysis and strategic planning by stakeholders, this report is accompanied by two structured datasets. These datasets provide a comprehensive, machine-readable directory of the key roles and organizations that constitute Ghana's Platinum Economy as of June 2025.

### Appendix A: Comprehensive Platinum Economy Role Directory

This appendix is provided as a structured dataset (available in CSV, Excel, and JSON formats) containing a detailed inventory of every unique employment position identified during this research. The dataset is designed for use in workforce planning, salary benchmarking, and curriculum development.

- **Dataset Schema:**

- **Role\_ID:** A unique identifier for each position.
- **Job\_Title:** The exact job title as advertised or documented.
- **Core\_Responsibilities\_Summary:** A concise summary of the key tasks and duties.
- **Sub\_Sector:** Classification into one of the 20 defined Platinum Economy sub-

sectors.

- **Primary\_Location:** The city, region, or remote status of the position.
- **Employment\_Type:** Classification (e.g., Formal Full-Time, Contract, Freelance, Internship, Apprenticeship, Volunteer).
- **Key\_Technical\_Skills:** A list of the primary technical skills required.
- **Key\_Soft\_Skills:** A list of the primary soft skills required.
- **Education\_Certification\_Requirements:** Minimum degree, preferred advanced degrees, and required professional certifications.
- **Experience\_Level:** Classification (e.g., Entry-Level, Mid-Level, Senior, Expert).
- **Compensation\_Range\_Benchmark:** Documented salary range or benchmark, with currency specified.
- **Employer\_Name:** The name of the hiring organization.
- **Source\_ID:** The identifier for the source document where the role was found.

## Appendix B: Key Innovation Ecosystem Stakeholder Directory

This appendix is provided as a structured dataset (available in CSV, Excel, and JSON formats) containing a directory of the key institutional actors within Ghana's innovation ecosystem. This directory is intended to facilitate networking, partnership development, and ecosystem mapping.

### • Dataset Schema:

- **Organization\_ID:** A unique identifier for each entity.
- **Organization\_Name:** The official name of the organization.
- **Organization\_Type:** Classification (e.g., Innovation Hub, Accelerator, Venture Capital Firm, Research Center, Government Agency, Professional Association, NGO).
- **Primary\_Location:** The main physical location of the organization (City, Region).
- **Focus\_Areas:** Key sectors or themes of focus (e.g., Fintech, Agritech, Climate Tech, Digital Skills).
- **Key\_Programs\_Initiatives:** A list of their major programs, funding initiatives, or services.
- **Contact\_Information:** Publicly available website or contact details.



- **Source\_ID:** The identifier for the source document where the organization was identified.

## Works cited

- Ghana, U.S. Chamber of Commerce Explore Digital Cooperation Opportunities, accessed June 26, 2025, <https://www.ecofinagency.com/news-digital/1905-46866-ghana-u-s-chamber-of-commerce-explore-digital-cooperation-opportunities>
- Ghana-Digital-Economy-Diagnostic-Stock-Taking-Report.txt, accessed June 26, 2025, <https://documents1.worldbank.org/curated/en/523231597379719030/txt/Ghana-Digital-Economy-Diagnostic-Stock-Taking-Report.txt>
- Ghana Digital Economy Diagnostic - World Bank Documents and Reports, accessed June 26, 2025, <https://documents1.worldbank.org/curated/en/523231597379719030/pdf/Ghana-Digital-Economy-Diagnostic-Stock-Taking-Report.pdf>
- Ghana Digital Economy - International Trade Administration, accessed June 26, 2025, <https://www.trade.gov/country-commercial-guides/ghana-digital-economy>
- Ghana to Develop National AI Strategy Initiative Amid Digital Transformation Push, accessed June 26, 2025, <https://moc.gov.gh/2025/05/02/ghana-to-develop-national-ai-strategy-initiative-amid-digital-transformation-push/>
- Digital Transformation Center Ghana | BMZ Digital.Global, accessed June 26, 2025, <https://www.bmz-digital.global/en/initiatives/digital-transformation-center-ghana/>
- Ghana's Digitalization Agenda – The Good, The Bad, and The Ugly - IIPGH, accessed June 26, 2025, <https://iipgh.org/ghanas-digitalization-agenda-the-good-the-bad-and-the-ugly/>
- Ghana - Fixed Broadband Internet Subscribers (per 100 People) - 2025 Data 2026 Forecast 2001-2023 Historical, accessed June 26, 2025, <https://tradingeconomics.com/ghana/fixed-broadband-internet-subscribers-per-100-people-wb-data.html>
- Digital Health Inequalities: 3 Policy Recommendations For Ghana, accessed June 26, 2025, <https://www.teamscopeapp.com/blog/digital-health-inequalities-3-policy-recommendations-for-ghana>
- Connectivity in Ghana - Broadband Commission, accessed June 26, 2025, <https://www.broadbandcommission.org/insight/connectivity-in-ghana/>
- MEST Africa - ProDevs, accessed June 26, 2025, <https://prodevs.io/accelerators/mest-africa>
- Meltwater Entrepreneurial School of Technology (MEST) - Mastercard Foundation, accessed June 26, 2025, <https://mastercardfdn.org/en/what-we-do/our-programs/meltwater-entrepreneurial-school-of-technology-mest/>

- Impact Hub Accra Tickets, Events & Experiences - eGotickets, accessed June 26, 2025, <https://egotickets.com/impacthubaccra/past-events?page=2>
- Book a Space at Impact Hub Accra, accessed June 26, 2025, <https://accra.impacthub.net/space/event-space-2/>
- Welcome to Impact Hub Accra, accessed June 26, 2025, <https://accra.impacthub.net/>
- - Ghana Climate Innovation Centre, accessed June 26, 2025, <https://ghanacic.ashesi.edu.gh/>
- Ghana Climate Innovation Centre (GCIC) Business Incubation Programme 2025 (Up to CAD ... - Opportunity Desk, accessed June 26, 2025, <https://opportunitydesk.org/2025/04/07/gcic-business-incubation-programme-2025/>
- Ghana Climate Innovation Centre - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/Ghana\\_Climate\\_Innovation\\_Centre](https://en.wikipedia.org/wiki/Ghana_Climate_Innovation_Centre)
- Project Manager, Ghana at Terraformation - Remote, accessed June 26, 2025, <https://remote.com/jobs/terraformation-c1141y0x/project-manager-ghana-j1b0p28p>
- Research - UG | Department of Computer Science, accessed June 26, 2025, <https://dcs.ug.edu.gh/research>
- UG | Department of Computer Science: Home - University of Ghana, accessed June 26, 2025, <https://dcs.ug.edu.gh/>
- KNUST Engineering Education Project (KEEP) Hits 100%, accessed June 26, 2025, <https://keep.knust.edu.gh/news/knust-engineering-education-project-keep-hits-100>
- KNUST Engineering Education Project (KEEP) Hosts Prof. Romain ..., accessed June 26, 2025, <https://keep.knust.edu.gh/news/knust-engineering-education-project-keep-hosts-prof-romain-murenzi-advance-quantum-science>
- College of Engineering (KNUST) - Wikipedia, accessed June 26, 2025, [https://en.wikipedia.org/wiki/College\\_of\\_Engineering\\_\(KNUST\)](https://en.wikipedia.org/wiki/College_of_Engineering_(KNUST))
- Ghana: Kumasi Airport City, Knust Partner to Establish Technology ..., accessed June 26, 2025, <https://allafrica.com/stories/202506260221.html>
- Ghanaian agri-tech firm, Complete Farmer, raises €2.2m (\$2.5m) from EU-backed agricultural fund - Stears, accessed June 26, 2025, <https://www.stears.co/premium/article/agriculture-transaction-brief-ghanaian-agri-tech-firm-complete-farmer-raises-22m-25m-from-eu-backed-agricultural-fund/>
- Ghana's Complete Farmer Gets \$2.5 Million Boost to Transform Northern Agriculture, accessed June 26, 2025, <https://techlabari.com/ghanas-complete-farmer-gets-2-5m-eu-boost-to-transform-northern-agriculture/>
- In Ghana, Complete Farmer's USD 2.5 M Is A Bet On What Agritech Hides From, accessed June 26, 2025, <https://weetracker.com/2025/06/25/complete-farmer-agritech-funding/>
- European Union-Funded AgriFI invests ~EUR 2.2 million in Complete Farmer to

drive Ghana's Innovation in Agritech - EDFI MC, accessed June 26, 2025, <https://edfimc.eu/european-union-funded-agrifi-invests-eur-2-2-million-in-complete-farmer-to-drive-ghanas-innovation-in-agritech/>

- 2025 KIC AgriTech Challenge Pro: 22 young startups shine with funding support to champion agribusiness innovations - MyJoyOnline, accessed June 26, 2025, <https://www.myjoyonline.com/2025-kic-agritech-challenge-pro-22-young-startups-shine-with-funding-support-to-champion-agribusiness-innovations/>
- Ghana - Climate Investment Funds (CIF), accessed June 26, 2025, <https://www.cif.org/country/ghana>
- Programme for Sustainable Economic Development (PSED) in Ghana - GIZ, accessed June 26, 2025, <https://www.giz.de/de/downloads/giz2021-en-digital-transformation-center-dtc.pdf>
- Climate Financing Division established in the Ministry of Finance, accessed June 26, 2025, <https://mofep.gov.gh/news-and-events/2024-10-22/climate-financing-division-established-in-the-ministry-of-finance>
- Request for Expressions of Interest - Recruitment of an Environmental Specialist (GH-MOF-YES-379865-CS-INDV), accessed June 26, 2025, <https://mofep.gov.gh/adverts/2023-09-12/request-for-expressions-of%20interest-recruitment-of-an-environmental-specialist-gh-mof-yes-379865-cs-indv>
- FAQs ON BOG REGULATORY SANDBOX - Bank of Ghana, accessed June 26, 2025, [https://www.bog.gov.gh/wp-content/uploads/2023/02/FAQs-Regulatory-sandbox New-Communications.pdf](https://www.bog.gov.gh/wp-content/uploads/2023/02/FAQs-Regulatory-sandbox-New-Communications.pdf)
- Licence Requirements - Bank of Ghana, accessed June 26, 2025, <https://www.bog.gov.gh/fintech-innovation/licence-requirements/>
- Ghana and Rwanda to Implement Africa's First Fintech License Passport Framework - GFTN, accessed June 26, 2025, <https://gftn.co/media-hub/ghana-and-rwanda-to-implement-africas-first-fintech-license-passport-framework>
- Ghanaian Data Protection Act Guide | Privacy Laws Hub, accessed June 26, 2025, <https://globalprivacylaws.com/laws/pdpa-ghana/>
- Data Protection Commission: Home, accessed June 26, 2025, <https://dataprotection.org.gh/>
- Compliance - Data Protection Commission, accessed June 26, 2025, <https://dataprotection.org.gh/compliance/>
- Powering Progress: Renewable Energy in Ghana - The Borgen Project, accessed June 26, 2025, <https://borgenproject.org/renewable-energy-in-ghana-3/>
- Ghana Green Manufacturing and Policy Guide - Sustainable Energy for All | SEforALL, accessed June 26, 2025, <https://www.seforall.org/publications/ghana-green-manufacturing-and-policy-guide>
- The Case for Ghana's Renewable Energy Transition: A Path to Sustainability and Economic Resilience - Climate Policy Lab, accessed June 26, 2025, <https://www.climatepolicylab.org/climatesmart/2025/3/7/the-case-for-ghanas-renewable-energy-transition-a-path-to-sustainability-and-economic-resilience>

- Ghana Data Science Summit 2025: Empowering the use of data and ..., accessed June 26, 2025, <https://www.myjoyonline.com/ghana-data-science-summit-2025-empowering-the-use-of-data-and-ai-skills-for-impact/>
- Software Engineer - Python And K8s at Canonical | Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/listings/software-engineer-python-and-k8s-84654z>
- Software Engineer - Data Infrastructure at Canonical | Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/listings/software-engineer-data-infrastructure-5djwj6>
- Remote Jobs in Ghana | Turing Jobs, accessed June 26, 2025, <https://www.turing.com/jobs/remote-jobs-in-ghana>
- Software Developer Jobs - Turing, accessed June 26, 2025, <https://www.turing.com/jobs/software-developer-jobs>
- Careers - Andela, accessed June 26, 2025, <https://www.andela.com/careers>
- Talent Experience - Andela, accessed June 26, 2025, <https://www.andela.com/talent-experience>
- Information Security Compliance Lead, IgniteTech (Accra) - \$100,000/year USD - Crossover, accessed June 26, 2025, <https://www.crossover.com/job-roles/services-leadership/ghana/city/accra/c-a0qlj000002MCG4IAO/ignitetechnformation-security-compliance-lead>
- Jobs In Ghana | Join Us In Takoradi, Kumasi or Accra - AmaliTech, accessed June 26, 2025, <https://amalitech.com/jobs-in-ghana/>
- Jobs in Accra & Tema Region - Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/jobs/accra-tema>
- Software & Data Jobs in Ghana - Accra - Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/jobs/software-data>
- MTN Ghana Jobs and Careers, accessed June 26, 2025, <https://www.careerjet.com.gh/company/MTN-Ghana/jobs>
- Analyst, Financial Planning & Budgeting | MTN Ghana, accessed June 26, 2025, <https://mtn.com.gh/careers/analyst-financial-planning-budgeting/>
- Current Vodafone Jobs in Ghana - See Jobweb Ghana, accessed June 26, 2025, <https://jobwebghana.com/job-category/vodafone-jobs-in-ghana/>
- Submit CVs – New Recruitment at Vodafone Ghana - Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/listings/submit-cvs-new-recruitment-at-vodafone-ghana-eq0v5v-v2>
- Cybersecurity and Compliance Specialist - Sobiaonline, accessed June 26, 2025, <https://sobiaonline.com/jobs/job/cybersecurity-and-compliance-specialist/>
- WFH Data Science Jobs in Ghana - Turing, accessed June 26, 2025, <https://www.turing.com/jobs/data-science-jobs-in-ghana>
- Senior Mobile Software Engineer (iOS, Android) - Farmerline Group | Built In, accessed June 26, 2025, <https://builtin.com/job/senior-mobile-software-engineer-ios-android/6498839>
- Ghana Tech Ecosystem Survey - 2024 | CediRates, accessed June 26, 2025,

- <https://cedirates.com/news/ghana-tech-ecosystem-survey---2024/>
- Ghana Salary Guide 2025 - okAdwuma, accessed June 26, 2025, <https://www.okadwuma.com/salary-guide>
  - Information Technology, Ghana salaries - Paylab.com, accessed June 26, 2025, <https://www.paylab.com/gh/salaryinfo/information-technology>
  - Tech Industry Salaries in Accra, Ghana - Levels.fyi, accessed June 26, 2025, <https://www.levels.fyi/industry/tech/locations/accra-gha>
  - Ghana's Strategic Leap into the Future of Infrastructure | CediRates, accessed June 26, 2025, <https://cedirates.com/news/ghanas-strategic-leap-into-the-future-of-infrastructure/>
  - Ghana's Strategic Leap into the Future of Infrastructure - MyJoyOnline, accessed June 26, 2025, <https://www.myjoyonline.com/ghanas-strategic-leap-into-the-future-of-infrastructure/>
  - Engineer, Advanced Manufacturing at RusselSmith Group June ..., accessed June 26, 2025, <https://www.myjobmag.com/job/engineer-advanced-manufacturing-russel-smith-group>
  - Kumasi Airport City project takes off - Asantehene calls for policies to attract local private capital - MyJoyOnline, accessed June 26, 2025, <https://www.myjoyonline.com/kumasi-airport-city-project-takes-off-asantehene-calls-for-policies-to-attract-local-private-capital/>
  - Let's make Kumasi Airport City project a reality - Otumfuo rallies indigenes, accessed June 26, 2025, <https://citinewsroom.com/2025/06/lets-make-kumasi-airport-city-project-a-reality-otumfuo-rallies-indigenes/>
  - GIS and Remote Sensing Expert at GIZ Ghana - Jobs in Ghana - xycareers.com, accessed June 26, 2025, <https://xycareers.com/ghana/job/gis-and-remote-sensing-expert-at-giz-ghana/>
  - Job ad Ghana : Geographic Information Systems (GIS) Specialist - Accra - Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/job-vacancies-ghana/geographic-information-systems-gis-specialist-accra-5728>
  - President Mahama Launches National Apprenticeship Programme to Boost Youth Skills and Jobs, accessed June 26, 2025, <https://www.nya.gov.gh/president-mahama-launches-national-apprenticeship-programme-boost-youth-skills-and-jobs>
  - Ghana-Turkey partnership powers major Kumasi real estate development - Asaase Radio, accessed June 26, 2025, <https://asaaseradio.com/ghana-turkey-partnership-powers-major-kumasi-real-estate-development/>
  - Airport City Kumasi to revolutionise skyline in 2 years, foster economic growth - MyJoyOnline, accessed June 26, 2025, <https://www.myjoyonline.com/kumasi-airport-city-to-revolutionise-skyline-in-2-years-foster-economic-growth/>
  - Airport City Kumasi project to bolster economic growth | Ghana News Agency, accessed June 26, 2025, <https://gna.org.gh/2025/06/airport-city-kumasi-project-to-bolster-economic-growth/>
  - Climate Finance in Ghana, accessed June 26, 2025,

<https://www.climatepolicyinitiative.org/wp-content/uploads/2023/12/Climate-Finance-in-Ghana.pdf>

- Project Consultancy Services – Suka Solar Ghana – Efficient Energy Systems, accessed June 26, 2025, <https://suka.com.gh/index.php/solution/project-consultancy-services/>
- SAL Consult – A trusted, multidisciplinary water & environmental engineering consultancy in Accra, Ghana, West Africa., accessed June 26, 2025, <https://salconsultgh.com/>
- Ghana set to track its biodiversity targets through innovative digital mapping technology., accessed June 26, 2025, <https://www.undp.org/ghana/press-releases/ghana-set-track-its-biodiversity-targets-through-innovative-digital-mapping-technology>
- Data Scientist » Current Jobs in Ghana 2025 - Sobiaonline, accessed June 26, 2025, <https://sobiaonline.com/jobs/job/data-scientist/>
- Environmental Specialist, Accra, Ghana, June 2025 - ngo jobs in africa, accessed June 26, 2025, <https://ngojobsinafrica.com/job/environmental-specialist-accra-ghana/>
- Towards Just Energy Transition: Renewable Energy Transition Dynamics and Sectorial Employment in Ghana - MDPI, accessed June 26, 2025, <https://www.mdpi.com/2071-1050/16/9/3761>
- Find & Research Biotech & Pharmaceuticals Companies in Ghana - 6Sense, accessed June 26, 2025, <https://6sense.com/company/country-ghana--industry-biotech-&-pharmaceuticals>
- Biotechnology Centre – Biotechnology and Nuclear Agriculture ..., accessed June 26, 2025, <https://bnari.gaec.gov.gh/biotechnology-centre/>
- Ghana's mPharma expands with 100 virtual centers in Africa - TytoCare, accessed June 26, 2025, <https://www.tytoCare.com/press-releases/mpharma-a-telehealth-pioneer-out-of-ghana-gets-physical-with-100-virtual-centers-across-africa/>
- Recruitment Ghana : pharmaceutical industry CVs | Ghanajob.com, accessed June 26, 2025, <https://www.ghanajob.com/cv-library-search/pharmaceutical%20industry>
- Technical Advisor - Regulatory Consultancy - Devex, accessed June 26, 2025, <https://www.devex.com/jobs/technical-advisor-regulatory-consultancy-1355557>
- Pharmacy Dispenser @ mPharma | 4DX Ventures Job Board - Careers, accessed June 26, 2025, <https://careers.4dxventures.com/companies/mpharma/jobs/29800737-pharmacy-dispenser>
- How to Become a Health Informatics Specialist: Is it the Right Career for You?, accessed June 26, 2025, <https://www.careerfittest.com/how-to-become-a-health-informatics-specialist/>
- Health Informatics(Fee-Paying) (MHI.) - University of Ghana, accessed June 26, 2025, <https://www.ug.edu.gh/node/1023>



- Careers – Farmerline, accessed June 26, 2025, <https://farmerline.co/careers/>
- Top 10 Agritech Startups for Investors in 2025: Africa, accessed June 26, 2025, <https://agritechdigest.com/top-10-agritech-startups-for-investors-in-2025-africa/>
- Creative & Design Jobs in Ghana | Jobberman, accessed June 26, 2025, <https://www.jobberman.com.gh/jobs/creative-design>
- Top Augmented Reality App Development Company in Ghana, Best Augmented Reality App Development Company in Ghana - Appsinfo, accessed June 26, 2025, <https://www.appsinfo.com/augmented-reality-app-development-company-in-ghana>
- Top 10+ AR/VR Development Companies in Accra (2025) - TechBehemoths, accessed June 26, 2025, <https://techbehemoths.com/companies/ar-vr-development/accra>
- Professions - Microsoft Careers, accessed June 26, 2025, <https://careers.microsoft.com/v2/global/en/professions.html>
- IBM Careers - Entry Level Jobs, accessed June 26, 2025, <https://www.ibm.com/careers/career-opportunities>
- All Events | Data Science Network Ghana, accessed June 26, 2025, <https://datasciencenet.org/all/events>
- Roles | Proto Ventures - MIT, accessed June 26, 2025, <https://protoventures.mit.edu/about/roles/>
- Instructional Designer at Ashesi University - The Org, accessed June 26, 2025, <https://theorg.com/org/ashesi-university/jobs/instructional-designer-fedd02ed>
- Digital Skills in Sub-Saharan Africa Spotlight on Ghana, accessed June 26, 2025, <https://www.ifc.org/content/dam/ifc/doc/mgrt/digital-skills-final-web-5-7-19.pdf>
- Knowledge and Skills Gap Analyses of Technical Universities in Ghana - Infinity Press, accessed June 26, 2025, <https://infinitypress.info/index.php/jsss/article/download/1937/758>
- TECH ENTREPRENEURSHIP ECOSYSTEM IN GHANA, accessed June 26, 2025, <https://www.intracen.org/file/techentrepreneurshipecosystemmappingghana2022pdf>



# **Ghana's Yellow Economy: A Comprehensive Analysis of the Public Service, Education, and Social Development Workforce Landscape (As of June 2025)**

## **Section I: Strategic Overview of Ghana's Yellow Economy Workforce**

This report provides a comprehensive, evidence-based analysis of the employment landscape within Ghana's Yellow Economy, a vital sector encompassing public administration, education, social services, and community development. As of June 2025, this economy is characterized by a complex and often contradictory set of forces. It is a domain of immense opportunity and systemic inefficiency, of high-level skills demand and persistent administrative bottlenecks, and of a stark divide between a structured, urban-centric formal sector and a vast, precarious informal economy that employs the majority of its workforce. This overview presents the principal findings and strategic imperatives derived from a systematic mapping of employment opportunities across the nation.

### **The Yellow Economy in Profile**

The Yellow Economy represents the nexus of work driven by public good, social value, and human capital development. It is distinct from the primary (Green) and industrial (Blue) economies and forms the backbone of the nation's social and administrative infrastructure. A quantitative analysis of available data from public and private job portals, supplemented by reports on the informal sector, provides an estimated structural profile of employment opportunities. The education sector is the largest single component, followed by social services, public administration, and a rapidly

growing, though less formalized, digital segment.

**Table 1: Overview of Ghana's Yellow Economy Employment Structure (June 2025)**

| Core Sub-Sector                                    | Employment Type  | Estimated Share of Opportunities | Data Confidence Level  |
|--|--|----------------------------------|--|
| <b>Public Administration &amp; Governance</b>      | Predominantly Formal/Permanent, with some Contract/Consultancy roles.                      | 15%                              | High (for formal roles); Low (for informal political/community roles).             |
| <b>Education &amp; Human Development</b>           | Mix of Formal/Permanent (Public), Contract (Private), and Freelance (Tutoring).            | 45%                              | High (for formal advertised roles); Medium (for unadvertised school-level hiring). |
| <b>Social Services &amp; Community Programming</b> | Predominantly Contract/Fixed-Term (NGOs), with significant Informal/Community-Based roles. | 25%                              | Medium (for NGO roles); Low (for CBO and informal roles).                          |
| <b>Emerging Digital &amp; Remote Roles</b>         | Predominantly Freelance/Gig, with some Contract roles.                                     | 15%                              | Medium (for platform-based work); Low (for direct, informal arrangements).         |

*Note: Percentages are estimates derived from the frequency and volume of available job postings and sectoral reports. The Data Confidence Level reflects the reliability and comprehensiveness of the primary data sources for each category.*

**Principal Findings**

The detailed analysis presented in this report converges on several critical themes

that define the current state and future trajectory of Ghana's Yellow Economy workforce:

292. **The Tale of Two Economies:** The most striking feature is a profound bifurcation. On one hand, there is a formal, structured economy, heavily concentrated in the Greater Accra Region, characterized by clearly defined roles, high qualification requirements, and recruitment processes managed through a mix of official and commercial digital platforms. On the other hand, there exists a vast informal and gig economy, which employs an estimated 70-80% of Ghana's total workforce.<sup>1</sup> This informal segment is geographically dispersed, largely invisible to official data collection systems, and characterized by precarious work, low pay, and a lack of fundamental labor protections.<sup>3</sup>
293. **Systemic Inefficiencies in Public Sector Recruitment and Management:** The state has invested in a digital infrastructure for public sector recruitment, notably the Ghana Labour Market Information System (GLMIS).<sup>4</sup> However, these official channels are frequently underutilized, with many key government job portals being inaccessible or sparsely populated with current vacancies.<sup>5</sup> This operational gap has pushed both employers and job seekers toward more efficient commercial platforms. More critically, systemic administrative and financial dysfunctions plague public sector human resource management, exemplified by the well-documented, extensive delays in processing salaries for newly recruited teachers.<sup>7</sup>
294. **A Deepening Skills Mismatch:** A significant and growing divergence exists between the skills demanded by a modernizing Yellow Economy and the qualifications traditionally supplied by the national education system. There is high demand for digital literacy, data analysis for monitoring and evaluation, specialized technical instruction, and digital communication skills. These competencies, however, are not yet systematically embedded within the core curricula of many public tertiary and pre-tertiary institutions, creating a critical skills gap that constrains both individual employability and national development.
295. **The Centrality of the Non-State Sector:** Non-Governmental Organizations (NGOs), both international and local, alongside various development partners, function as a parallel, and often more agile, service delivery mechanism. This sector is the primary driver of employment in social services, community development, and program management, particularly in regions outside of the main urban centers.<sup>8</sup> Its project-based funding model, however, results in a labor market dominated by fixed-term contracts, posing significant challenges for long-term career stability and institutional capacity building.

## Summary of Strategic Recommendations

The findings of this report point toward a series of urgent, interconnected policy imperatives required to strengthen Ghana's Yellow Economy workforce. These recommendations, which are fully elaborated in Section VII, are designed to address the structural challenges identified and unlock the full potential of the nation's human capital.

296. **Modernize Public Sector Human Resource Management:** Overhaul recruitment and payroll systems to eliminate administrative bottlenecks and establish a single, functional, and mandatory portal for all public service vacancies.
297. **Integrate 21st-Century Skills into the National Curriculum:** Launch a national initiative to embed digital literacy, data analytics, and critical thinking skills into curricula at all educational levels, supported by mandatory professional development for educators.
298. **Strengthen the Bridge Between Education and the Labour Market:** Expand and formalize internship, apprenticeship, and National Service programs, focusing on placements in high-demand fields and strengthening partnerships between university career services and employers.
299. **Develop a Policy Framework for the Gig and Informal Economy:** Create a national strategy to support and formalize the informal economy through simplified tax registration, portable social security benefits, and the enforcement of fair work principles.
300. **Foster Regional Hubs for Yellow Economy Employment:** Implement targeted investment and capacity-building programs for MMDAs and regional NGOs to distribute opportunities more equitably and leverage digital infrastructure for remote work.

## Section II: The Macro-Landscape of the Yellow Economy

To comprehend the intricate dynamics of employment within Ghana's Yellow

Economy, it is essential to first map the foundational landscape. This involves defining the sector's conceptual boundaries and, more critically, understanding the complex architecture of platforms, institutions, and economic forces that govern the flow of information and opportunity. The landscape is not a single, unified market but a fragmented ecosystem of distinct channels, each with its own rules, reach, and reliability.

## **Defining the Yellow Economy**

For the purposes of this analysis, Ghana's Yellow Economy is defined as the sphere of economic activity primarily concerned with the production and delivery of public goods, social value, and human development. It encompasses the full spectrum of roles dedicated to governance, education, social welfare, community programming, and the research and communication functions that support them. This framework includes not only the formal public sector but also the non-profit organizations, community-based groups, and emerging digital platforms that contribute to these societal goals. The scope aligns with the core categories of Education and Human Development, Public Administration and Policy, Social Services, Research, Communications, and their associated support functions.

## **The Architecture of Employment Channels**

The pathways to employment in the Yellow Economy are diverse and tiered, revealing a complex interplay between state-led initiatives and private market forces.

## **Official Government Portals**

The Government of Ghana has established several digital platforms intended to serve as the central nervous system for the national labor market. The **Ghana Labour Market Information System (GLMIS)**, under the Ministry of Labour, Jobs &

Employment, is the most ambitious of these, designed to be a comprehensive job-matching service for employers, employees, students, researchers, and job seekers in both the public and private sectors.<sup>4</sup> Similarly, the

**Youth Employment Agency (YEA) Job Centre** provides a dedicated portal for youth opportunities, offering services like career advisory, CV assistance, and mentorship connections.<sup>11</sup> The constitutional authority for public sector workforce management rests with the

**Public Services Commission (PSC)**, which is responsible for setting recruitment standards and overseeing the civil service.<sup>12</sup>

However, a significant gap exists between the stated intent of these platforms and their operational reality. Systematic monitoring reveals that official portals like GLMIS often have very few, if any, current listings in core Yellow Economy sub-sectors such as 'Public Administration and Defense' or 'Human Health and Social Work'.<sup>5</sup> Furthermore, critical official websites, including the careers pages for the PSC and the Ghana Education Service (GES), are frequently inaccessible or lack active vacancy announcements.<sup>6</sup> This suggests a "hollowing out" of the state's own recruitment infrastructure. While the digital framework exists, a lack of consistent updates, administrative capacity, or policy enforcement means that these official channels are not the primary or most reliable source of information for job seekers. Both public and private employers appear to have migrated to more dynamic and user-friendly commercial alternatives, undermining the government's ability to gather the real-time labor market data that GLMIS was designed to provide.<sup>4</sup>

## **Commercial and Aggregator Job Platforms**

In practice, the most vibrant marketplaces for formal Yellow Economy jobs are commercial platforms. Websites like **Jobberman Ghana**, **Jobsinghana.com**, and **Jobweb Ghana** have become the de facto hubs for recruitment, particularly for the private and non-governmental sectors.<sup>16</sup> These platforms list hundreds of current roles, from entry-level to executive positions, and provide the most detailed specifications regarding responsibilities, skills, and qualifications. Their dominance indicates a market preference for efficiency and reach, but it also creates an uneven playing field where access to opportunity is contingent on knowing which of the many

private platforms to monitor.

## **International Development and NGO Platforms**

For senior, technical, and internationally-recruited positions within the development sector, specialized global platforms are the primary channels. Portals such as **Impactpool** and **DevelopmentAid** are indispensable for tracking opportunities with United Nations agencies, multilateral development banks, and major international NGOs operating in Ghana.<sup>19</sup> These platforms cater to a global talent pool and feature roles with specific expertise in areas like disaster risk reduction, public health, and economic policy.

## **The Gig Economy and Freelance Marketplaces**

A rapidly emerging component of the landscape is the digital gig economy. Global platforms like **Upwork**, **Flexjobs**, and **Twine** provide Ghanaian freelancers with access to a worldwide market for services in writing, data analysis, tutoring, and design.<sup>21</sup> Concurrently, Africa-centric and Ghana-focused freelance platforms like

**TERAWORK**, **Solangigs**, and **CediJob** are gaining traction, offering localized payment solutions and a focus on connecting African talent with both local and international clients.<sup>24</sup> These platforms represent a significant shift toward flexible, remote, and project-based work, operating largely outside traditional employment structures.

## **The Informal Economy: The Invisible Workforce**

The most significant yet least visible segment of Ghana's workforce operates within the informal economy. Recent studies provide a stark picture of its scale and nature. A report by the Ghana Statistical Service indicates that informal workers constitute as



much as 80% of the nation's workforce, while a BudgIT Ghana study places the figure at over 70%.<sup>2</sup> Despite this overwhelming majority, the informal sector's contribution to national tax revenue is less than 2%, a disparity that signals deep systemic challenges, including a lack of tax education and widespread mistrust in public financial management.<sup>1</sup>

The **2021 Fairwork Ghana report** provides critical insight into the working conditions within the digital gig economy, which can be seen as a formalized proxy for the broader informal sector.<sup>3</sup> The study of ten major platforms, including Uber and Bolt, found that while they create an estimated 60,000 to 100,000 jobs, they largely fail to meet minimum standards of fair work. Key findings highlighted that no platform could guarantee a living wage after work-related costs were accounted for, and workers lacked access to fundamental labor rights, such as collective bargaining.<sup>3</sup> This precariousness—characterized by low pay, unsafe conditions, and a lack of social safety nets—is endemic to the informal economy. Employment in this sphere is often secured through community networks and word-of-mouth rather than formal advertisements, making it exceptionally difficult to map and analyze through conventional data collection methods. Addressing the needs and potential of this "invisible workforce" remains one of the most profound policy challenges for Ghana.

## **Section III: Employment in Public Administration and Governance**

The public sector remains a cornerstone of the Yellow Economy, serving as a primary employer and the principal architect of national policy and service delivery. Employment opportunities are structured across central, local, and regulatory bodies, each with distinct functions, recruitment processes, and qualification requirements. However, the formal structures of public service are consistently challenged by operational inefficiencies that impact recruitment, retention, and overall effectiveness.

### **Central Government: Ministries, Departments, and Agencies (MDAs)**

Employment within the central government apparatus spans the full range of administrative and technical functions. Recruitment for senior roles is often advertised on national job platforms, providing a window into the required competencies. For instance, vacancies within the Parliamentary Service of Ghana, such as **Coordinating Director (Development Services)** and **Deputy Director of Public Engagement**, demonstrate the need for high-level strategic and managerial expertise.<sup>16</sup> Similarly, roles like

**Officer, Policy Planning Research Monitoring and Evaluation** at the Water Resources Commission underscore the government's focus on evidence-based policy and program management.<sup>16</sup>

The **Public Services Commission (PSC)** is the constitutional body mandated to manage the public sector workforce, advising on appointments and promoting efficiency and integrity.<sup>13</sup> Its role is to ensure a merit-based system through standardized procedures, including the requirement for applicants to complete the PSC Form 2 for many positions.<sup>26</sup> However, the inaccessibility of the PSC's own careers portal is a critical finding, suggesting a disconnect between its mandate and its public-facing recruitment infrastructure.<sup>6</sup> This forces reliance on third-party aggregators and official gazettes, fragmenting the information landscape for public sector jobs.

## **Decentralized Governance: The Local Government Service (LGS)**

Ghana's decentralization policy vests significant administrative and development responsibility in its **Metropolitan, Municipal, and District Assemblies (MMDAs)**. This creates a substantial number of Yellow Economy jobs at the sub-national level across the country's 16 regions and 261 districts.<sup>28</sup> The LGS oversees the staffing of these assemblies, which have departments for key functions like

**Social Welfare and Community Development, Agriculture, and Physical Planning.**<sup>29</sup>

Job roles at the MMDA level are diverse. They include technical leadership positions such as **Head of Transport Department**, requiring degrees in engineering or planning and extensive public service experience.<sup>30</sup> They also encompass frontline

operational roles like

**Municipal Guards**, for which recruitment is managed directly by the assemblies.<sup>29</sup> A key structural feature of LGS employment is its two-tiered nature: the central LGS is responsible for recruiting and posting senior and middle-level staff, while the MMDAs are empowered to hire junior and support staff using their Internally Generated Funds (IGF).<sup>26</sup> This decentralized hiring authority provides flexibility but can also lead to inconsistencies in standards and remuneration across different districts.

## Regulatory and Policy Bodies

A specialized and highly skilled segment of the public sector exists within the nation's regulatory and policy bodies. These agencies are responsible for setting and enforcing standards, particularly in the education sector. Their recruitment patterns reveal a strong demand for advanced academic credentials and deep subject-matter expertise.

301. The **Ghana Tertiary Education Commission (GTEC)**, which oversees all tertiary education, is involved in the appointment of senior leaders such as **College Principals**. These positions demand a terminal degree (PhD) and a faculty rank of at least Associate Professor, reflecting the highest level of academic and administrative qualification.<sup>31</sup>
302. The **National Teaching Council (NTC)**, responsible for teacher licensing and professional standards, recruits for highly specialized technical roles. Openings for **Chief Examiners** and **Subject Experts** across a wide range of academic and vocational subjects explicitly require a minimum qualification of a Master of Philosophy (MPhil), indicating a need for specialists with deep pedagogical and assessment knowledge.<sup>32</sup>
303. The **National Council for Curriculum and Assessment (NaCCA)** is the body that develops the pre-tertiary curriculum. It recruits for roles such as **Subject Officers**, **Assessment Officers**, and **Research, Evaluation Officers**. These positions typically require a Master's degree in education or a related field, coupled with at least six years of teaching experience and a rank of Assistant Director II within the Ghana Education Service.<sup>33</sup>
304. The **Commission for Technical and Vocational Education and Training (CTVET)** manages the TVET sector. It advertises for administrative roles like

**Assistant Registrar, Moderation**, which are crucial for the operational functions of curriculum development and enforcement.<sup>34</sup>

The stringent qualification requirements for these regulatory roles stand in stark contrast to the administrative challenges faced by the broader public service. The well-publicized struggles of the Ghana Education Service (GES) to process payroll for newly recruited teachers—with delays of nearly a year attributed to "irregularities" and cumbersome processes for obtaining financial clearance from the Ministry of Finance—highlight a profound systemic dysfunction.<sup>7</sup> This creates a paradox: the state sets exceptionally high standards to attract top talent into its policy and regulatory core, yet its own administrative machinery often fails to provide basic and timely support to its frontline workforce. This operational deficiency risks creating a "credibility gap," potentially deterring the very experts the government seeks to recruit and perpetuating a cycle of inefficiency that undermines the goal of building a modern, effective public service.

## **Section IV: The Education and Human Development Workforce**

The education and human development sector is the largest and most complex pillar of Ghana's Yellow Economy. It is a multi-layered system encompassing public, private, and international institutions from the pre-tertiary to the tertiary level, alongside a growing ecosystem of specialized and digital services. The workforce landscape within this sector is defined by a fundamental bifurcation between a high-volume, state-run system and a more dynamic, market-driven private and international track.

### **Formal Education System (Pre-Tertiary)**

#### **Ghana Education Service (GES)**

The GES is the single largest employer in the Yellow Economy, responsible for staffing the nation's public basic and secondary schools. Recruitment into the GES is a highly structured and cyclical process, typically following the graduation of qualified teachers from the 46 public Colleges of Education. The pathway to becoming a GES teacher is standardized: candidates must have completed their college education, passed the **Ghana Teacher Licensure Examination** administered by the NTC, and completed their mandatory **National Service**.<sup>35</sup>

The application process has been digitized via the GES promotions and recruitment portal. This requires applicants to purchase an e-voucher to access the application form and upload a series of documents, including academic certificates, National Service certificate, and the Ghana Card.<sup>35</sup> While digitized, the system is plagued by the previously noted administrative and financial delays, which represent a significant disincentive for new entrants.<sup>7</sup>

### **Private and International Schools**

Running parallel to the public system is a robust sector of private and international schools. These institutions represent a significant and growing source of employment for educators and are concentrated in major urban centers. They operate with different standards and cater to a different market segment. Job advertisements from institutions like the **Ghana International School (GIS)** and other reputable international schools frequently appear on commercial platforms like Jobweb Ghana and Jobberman.<sup>37</sup>

The requirements in this sub-sector often differ from the GES. Employers typically seek teachers with a minimum of three years of post-qualification experience and, crucially, familiarity with international curricula such as the **Cambridge IGCSE and A-level** or the International Baccalaureate (IB).<sup>38</sup> High competency in using ICT for lesson delivery is another essential requirement.<sup>38</sup> In return for these specialized skills, salaries in international schools are generally higher than in the public sector, with monthly earnings potentially reaching 5,000 to 10,000 GHS, compared to the 1,200 to 2,500 GHS range in public schools.<sup>41</sup>

## Formal Education System (Tertiary)

### Public and Private Universities

Ghana's tertiary institutions are major hubs of high-skilled employment. Public universities such as the **University of Ghana (UG)**, **Kwame Nkrumah University of Science and Technology (KNUST)**, and the **University of Cape Coast (UCC)** regularly advertise for a wide spectrum of academic and administrative positions.<sup>37</sup> Academic roles, from

**Lecturer** to **Senior Lecturer** and **Associate Professor**, almost universally require a **PhD** in the relevant field of specialization, along with a strong record of research and publications in refereed journals.<sup>43</sup> Senior administrative posts, such as

**University Librarian** or **Registrar**, typically demand a Master's degree and at least a decade of relevant senior management experience.<sup>37</sup>

Private university colleges, such as the **Catholic University College of Ghana**, also contribute to this landscape by recruiting for similar academic and administrative roles.<sup>37</sup> Furthermore, universities serve as a critical entry point into the broader professional workforce through their

**Careers and Counselling Centres**, which facilitate internship opportunities and manage National Service placements for their graduating students.<sup>47</sup>

### Specialized and Ancillary Services

### Special Education and Inclusion

The education sector includes a specialized workforce dedicated to students with

diverse learning needs. Job postings for **Special Education Teachers** indicate a demand for professionals who can assess students' needs, design and implement **Individualized Education Plans (IEPs)**, and adapt curriculum materials.<sup>50</sup> These roles require a Bachelor's degree in Special Education and teaching certification. Institutions like the

**New Horizon Special School** in Accra serve as dedicated centers for this specialized form of education and vocational training, employing educators, therapists, and support staff.<sup>51</sup>

## **Library and Information Services**

Libraries within educational institutions and public bodies create a distinct career path for information professionals. The roles are stratified by qualification. Senior positions like **University Librarian** require a Master's degree in Library or Information Studies and often membership in the **Ghana Library Association**.<sup>37</sup> The

**Ghana Library Authority** is a key public sector employer, recruiting for a hierarchy of roles, including **Principal Librarian** (Master's degree, 6+ years experience), **Librarian** (Master's degree, 1+ year experience), and **Senior Library Assistant** (HND/Diploma).<sup>52</sup>

## **Educational Technology and E-Learning**

This sub-sector is emergent in Ghana, with its influence felt more through skill requirements in traditional roles than through a large volume of dedicated "EdTech" jobs. The demand for **ICT proficiency** is now a standard requirement in many teaching positions, especially in the private sector.<sup>38</sup> Job descriptions for facilitators increasingly mention the need to integrate

**educational technology tools** into teaching and assessment.<sup>53</sup>

The most visible manifestation of this trend is in the growth of remote and online learning opportunities, primarily driven by international platforms. Websites like



**Teach Away** list vacancies for **online English teachers**, often requiring a TEFL certificate.<sup>40</sup> Similarly, platforms like

**HigherEdJobs** feature a large number of remote **adjunct faculty** positions, although many of these are offered by international universities seeking to hire from a global talent pool rather than by Ghanaian institutions.<sup>54</sup> This indicates that while the infrastructure and demand for e-learning are growing, the local market for dedicated EdTech professionals is still in its early stages of development.

The clear distinction between the traditional GES pathway and the more dynamic private/international/digital track poses a significant policy challenge. If the public system does not adapt to integrate the skills demanded by the modern economy, it risks a brain drain of its most ambitious and digitally-literate educators, ultimately impacting the quality of education for the majority of Ghanaian children.

## **Section V: The Social Services and Community Development Sector**

The social services and community development sector in Ghana is a vibrant and essential component of the Yellow Economy. It is characterized by a diverse ecosystem of non-state actors—including international and local NGOs, community-based organizations (CBOs), and development partners—that play a critical role in service delivery and employment generation. This sector often operates in areas where state capacity is limited, functioning as a parallel, and frequently more agile, mechanism for addressing social needs. However, its reliance on project-based funding creates a distinct employment landscape marked by fixed-term contracts and career precariousness.

### **The NGO and Development Partner Ecosystem**

#### **Employer Landscape**

The employer base in this sector is a rich tapestry of organizations with varying scales and mandates. Large **International Non-Governmental Organizations (INGOs)** are major employers, with prominent names like the **International Institute of Tropical Agriculture (IITA)**, **Children Believe, Right To Play**, **Catholic Relief Services**, **World University Service of Canada (WUSC)**, and **SOS Children's Villages** consistently advertising positions.<sup>8</sup>

Alongside these INGOs, United Nations agencies and their affiliates, such as the **Food and Agriculture Organization (FAO)**, **UNESCO**, the **International Organization for Migration (IOM)**, and **UNICEF**, are significant recruiters for specialized and senior roles.<sup>19</sup> Health-focused partners like the

**Clinton Health Access Initiative (CHAI)** also maintain a strong presence.<sup>19</sup>

Complementing these international bodies are influential **local NGOs** and think tanks, such as **ORGIIS GHANA**, which focuses on community-based initiatives in the Upper East Region, and the **Centre for Democratic Development (CDD-Ghana)**, which offers research and advocacy internships and careers.<sup>9</sup> Umbrella organizations like

**United Way Ghana** work to foster community development by partnering with local entities.<sup>57</sup>

## Geographic Concentration

The geography of employment in this sector is highly polarized. The vast majority of organizational headquarters, administrative functions, and senior management roles are concentrated in the **Accra & Tema Region**.<sup>8</sup> However, the operational heart of the sector lies in regional capitals and rural districts where projects are implemented. Cities like

**Tamale**, **Bolgatanga**, and **Walewale** serve as crucial hubs for service delivery, hosting a wide range of field-based positions such as **Project Coordinator**, **Finance Officer**, and **Health Specialist**.<sup>8</sup> This geographic split reflects a model where strategic direction is centralized in the capital, while implementation is decentralized to the areas of need.

## Key Functional Roles and Skillsets

The work within the social services sector is diverse, demanding a wide range of technical and soft skills. Analysis of job postings reveals several high-demand functional areas.

305. **Monitoring, Evaluation, and Learning (MEL):** This is a critical and highly sought-after specialization. The sector has a constant need for professionals who can measure project impact and ensure accountability to donors. Common roles include **MEL Officer**, **MERL (Monitoring, Evaluation, Research, and Learning) Associate**, and senior positions like **Principal Manager, Monitoring & Evaluation**.<sup>9</sup> These roles require strong quantitative and qualitative research skills, proficiency in data analysis, and experience with project management frameworks.
306. **Project/Program Coordination:** This is the most prevalent role type, forming the operational backbone of the sector. Titles such as **Project Coordinator**, **Program Associate**, **Partnership Facilitator**, and **Deputy Project Director** are ubiquitous.<sup>8</sup> These positions demand a versatile skill set encompassing planning, budget management, logistics, partner engagement, and report writing.
307. **Social Work and Community Development:** These frontline roles involve direct engagement with beneficiaries. A **Social Worker**, for example, conducts comprehensive assessments and develops individualized case plans for vulnerable populations like street-connected children, requiring a degree in Social Work or a related field.<sup>63</sup> Community-focused roles, such as **Cooperatives & Village Savings and Loans Officer** or **Community Relations Manager**, are vital for implementing rural development and economic empowerment projects.<sup>9</sup>
308. **Advocacy, Communications, and Fundraising:** To influence policy and secure funding, organizations recruit for roles like **Advocacy Advisor**, **Marketing and Communications Manager**, and **Grant Manager**.<sup>8</sup> While **Grant Writing** is sometimes a dedicated position, the skill is more often embedded as a key requirement in senior program and leadership roles, highlighting its importance for organizational sustainability.<sup>65</sup>

## Informal and Community-Based Roles

Mapping employment in grassroots and community-based organizations (CBOs) is challenging, as these roles are rarely advertised on formal job platforms. Their existence is often revealed indirectly through the activities of larger NGOs that partner with them. For example, the NGO **Lead For Ghana** recruits university graduates for two-year fellowships that place them in underserved communities, where they engage in both teaching and community development projects, effectively acting as a bridge between the formal and informal sectors.<sup>66</sup> Similarly, the formal role of a

**Community Relations Manager** often involves supervising a network of part-time or volunteer **Community Liaisons (CLOs)**, who are drawn from the communities themselves and serve as a critical link for feedback and mobilization.<sup>64</sup> These informal roles, though vital for project success, operate with little formal recognition or job security.

The heavy reliance on a project-based model, where employment is tied to specific funding cycles, creates a landscape of fixed-term contracts.<sup>9</sup> This leads to a highly precarious labor market for development professionals, who must navigate a cycle of short-term engagements. This instability poses a significant challenge for building long-term institutional memory and deep, trust-based community relationships, which are the cornerstones of sustainable development.

## Section VI: Geographic and Skills Landscape Analysis

A cross-cutting analysis of the data reveals distinct patterns in the geographic distribution of opportunities and the architecture of skills demanded by Ghana's Yellow Economy. These patterns highlight both the current structure of the workforce and the emerging trends that will shape its future. The landscape is marked by a heavy concentration of formal roles in urban centers, a growing potential for remote work to bridge the geographic divide, and a clear demand for digital and analytical skills that are not yet fully integrated into the national training pipeline.

## Geographic Distribution of Opportunity

The location of employment opportunities within the Yellow Economy is not uniform; it follows a clear hierarchical pattern from national to local levels, with a nascent but important layer of location-independent work.

**Table 2: Geographic Distribution of Yellow Economy Opportunity Types**

| Geographic Tier             | Dominant Role Types   | Key Locations  |
|-----------------------------|---|--|
| National Hub                | Senior Admin/Policy; NGO Headquarters; Corporate Public Sector; Digital/Freelance Hubs.         | Greater Accra Region (Accra, Tema)                               |
| Regional Hubs               | Project Management; Mid-Level Administration; Tertiary Education; Specialized Service Delivery. | Kumasi, Takoradi, Tamale, Bolgatanga, Cape Coast                 |
| District/Rural              | Frontline Public Service (Teaching, MMDA Staff); Community-Level Project Staff.                 | District Capitals; Rural Communities (e.g., Kasena Nankana area) |
| Remote/Location Independent | Digital/Freelance (Writing, Tutoring, Tech); Research & Analysis; Consulting.                   | Not location-specific; dependent on digital infrastructure.      |

309. **The Accra-Kumasi-Takoradi Triangle:** The data confirms the dominance of Ghana's primary urban centers as the locus of formal, high-skilled employment. The **Greater Accra Region** serves as the undisputed national hub, hosting the headquarters of most government ministries, regulatory bodies, international NGOs, and development partners.<sup>8</sup> It is also the epicenter of the emerging digital and freelance economy.<sup>22</sup>

**Kumasi** and **Takoradi** function as secondary hubs, with significant concentrations of administrative, commercial, and educational institutions.

310. **Regional Capitals as Service Delivery Hubs:** Cities such as **Tamale**,

**Bolgatanga**, and **Walewale** are critical nodes for the implementation of development projects and the delivery of decentralized government services.<sup>8</sup> These locations host a high number of mid-level project management and technical roles in fields like health, agriculture, and education.

311. **District and Rural Roles:** Employment in Ghana's numerous districts and rural communities is primarily composed of frontline public sector workers, such as teachers employed by the GES and staff of the MMDAs. Additionally, many NGO projects deploy field staff, like the **Cooperatives & Village Savings and Loans Officer** in the Kasena Nankana area, who work directly with communities.<sup>9</sup> These opportunities are less visible on national job portals and are often filled through local networks or direct deployment by a central body.
312. **The Rise of Remote Work:** A significant emerging trend is the growth of location-independent work. This is most prominent in the digital freelance space, with opportunities for **remote language tutors**, **content writers**, and software developers accessible via global platforms.<sup>23</sup> The development sector also shows a shift in this direction, with roles like **remote research associate** and **consultant** becoming more common, allowing organizations to tap into a wider talent pool.<sup>19</sup>

### Analysis of Skills in Demand

The skills required to succeed in the Yellow Economy are a blend of specialized technical competencies and cross-cutting soft skills. A systematic review of job descriptions across all sub-sectors reveals a clear hierarchy of valued skills.

**Table 3: High-Demand Skills Matrix across the Yellow Economy**

| Skill  | Public Admin | Education | Social Services | Digital/Freelance |
|--|--------------|-----------|-----------------|-------------------|
| <b>Monitoring &amp; Evaluation (M&amp;E)</b> | Medium       | Low       | <b>High</b>     | Medium            |
| <b>Policy Analysis</b>                       | <b>High</b>  | Medium    | Medium          | Medium            |

|  |             |             |             |             |
|--|-------------|-------------|-------------|-------------|
| <b>&amp; Research</b>                            |             |             |             |             |
| <b>Grant Writing &amp; Fundraising</b>           | Low         | Medium      | <b>High</b> | Low         |
| <b>Project Management &amp; Coordination</b>     | Medium      | Medium      | <b>High</b> | Medium      |
| <b>Community Mobilization &amp; Engagement</b>   | Medium      | Medium      | <b>High</b> | Low         |
| <b>Stakeholder Engagement</b>                    | <b>High</b> | Medium      | <b>High</b> | Medium      |
| <b>Digital Literacy &amp; ICT Proficiency</b>    | Medium      | <b>High</b> | <b>High</b> | <b>High</b> |
| <b>Data Analysis (Quantitative/ Qualitative)</b> | Medium      | Medium      | <b>High</b> | <b>High</b> |
| <b>Curriculum Development &amp; Pedagogy</b>     | Medium      | <b>High</b> | Low         | Medium      |
| <b>Financial Management &amp; Budgeting</b>      | <b>High</b> | Low         | <b>High</b> | Medium      |
| <b>Communication (Written &amp; Verbal)</b>      | <b>High</b> | <b>High</b> | <b>High</b> | <b>High</b> |
| <b>Cultural Sensitivity &amp; Adaptability</b>   | Medium      | Medium      | <b>High</b> | Medium      |

## Technical Skills

313. **Policy, Research, and Evaluation:** Core skills in policy analysis, program



evaluation, and research methodologies are in high demand, particularly in public administration and the social services sector. Expertise in **Monitoring, Evaluation, and Learning (MEL)** is a standout requirement for most NGO programs.<sup>59</sup>

314. **Education and Pedagogy:** The education sector requires deep knowledge of curriculum development, student assessment techniques, and specialized pedagogical approaches, including for special needs education.<sup>33</sup> Increasingly, **ICT integration** in the classroom is moving from a desirable to an essential skill.<sup>38</sup>
315. **Social and Community Services:** This sector demands a unique blend of skills, including **case management, community mobilization, stakeholder engagement**, and, critically, **grant writing and fundraising** to ensure program sustainability.<sup>8</sup>
316. **Digital and Data Skills:** Across all sectors, there is a rising premium on digital competencies. These range from **digital marketing** and content creation for NGOs to advanced **data analytics** for research and MEL, and a wide array of software development and AI-related skills in the freelance market.<sup>8</sup>

## Soft Skills

- **Communication:** The ability to communicate effectively, both in writing and verbally, is the most universally demanded soft skill. Proficiency in English is standard, with fluency in one or more local languages often required for community-facing roles.<sup>63</sup>
- **Collaboration and Interpersonal Skills:** The ability to work in teams, build trusted relationships with partners, and navigate complex stakeholder environments is essential, particularly in the collaborative project-based work of the social sector.<sup>61</sup>

## Identifying Skills Gaps and Training Imperatives

Juxtaposing the skills in demand with the traditional outputs of the Ghanaian education system reveals a critical "digital skills paradox." The modern Yellow Economy—even in its traditional sectors like education and social services—is

increasingly data-driven and digitally mediated. However, the national education curriculum has been slow to adapt. The high demand for data analysts, digital marketers, and ICT-proficient teachers is not yet being met by a systemic supply from public institutions. This forces individuals and employers to rely on private training or self-learning, creating a bottleneck for growth.

This gap underscores the implicit but urgent need for **adult education and lifelong learning** frameworks. While few jobs are explicitly titled "Adult Educator," the necessity of the function is evident in roles that require training rural communities or upskilling existing staff.<sup>69</sup> Without a national strategy to embed these in-demand digital and analytical skills into the core education system, Ghana risks producing a generation of graduates who are qualified for the economy of the past, not the future. This could exacerbate the urban-rural divide, as those in urban centers with better access to private training and digital infrastructure will be better positioned to seize the most valuable opportunities in the evolving Yellow Economy.

## **Section VII: Strategic Recommendations for National Workforce Development**

The comprehensive analysis of Ghana's Yellow Economy workforce reveals a sector of immense potential constrained by structural inefficiencies, a deepening skills mismatch, and significant geographic and formal/informal divides. To address these challenges and build a more resilient, equitable, and effective workforce, this report proposes a set of five interconnected strategic recommendations. These are designed to be actionable for key government agencies, educational institutions, development partners, and private sector stakeholders.

### **1. Modernize Public Sector Human Resource Management**

The public sector's role as a primary employer is being undermined by severe administrative and technological deficiencies. The current system is characterized by fragmented information channels and debilitating delays in core HR processes, which

damages morale and deters top talent.

- **Recommendation:**

- **A. Unify and Mandate a Centralized Recruitment Portal:** Undertake a comprehensive overhaul and relaunch of the Ghana Labour Market Information System (GLMIS) or a similar platform. Mandate by law that all vacancies within the Public Services, including all Ministries, Departments, Agencies (MDAs), and the Local Government Service (LGS), be posted exclusively on this single, user-friendly portal. This will create a transparent, one-stop source for public sector jobs and provide the state with accurate, real-time labor market data.
- **B. Re-engineer the Financial Clearance and Payroll Process:** Establish a dedicated, inter-agency task force comprising the Ministry of Finance, the Public Services Commission, and the Ghana Education Service to radically streamline the process for financial clearance and payroll onboarding. Implement a digitized, transparent system with clear service standards and timelines to ensure that newly recruited public servants, particularly teachers, are paid within 30-60 days of their appointment.
- **Evidence Base:** This recommendation is a direct response to the systemic payment delays affecting newly hired teachers, which can last for nearly a year.<sup>7</sup> It also addresses the observed fragmentation and inaccessibility of official job portals (PSC, GES), which contrasts sharply with the stated goal of GLMIS to be a central repository of labor market information.<sup>4</sup>

## 2. Integrate 21st-Century Skills into the National Curriculum

A persistent and widening gap exists between the skills demanded by the modern economy and the competencies being imparted by the traditional education system. Digital literacy, data analysis, and critical thinking are no longer niche skills but foundational requirements for meaningful participation in the Yellow Economy.

- **Recommendation:**

- **A. Mandate a National Future-Skills Curriculum Review:** Direct the National Council for Curriculum and Assessment (NaCCA) and the Ghana Tertiary Education Commission (GTEC) to co-lead a comprehensive review of the pre-tertiary and tertiary curricula. The objective is to systematically

embed core competencies in digital literacy, data analysis, critical thinking, and collaborative problem-solving across all subject areas.

- **B. Launch a National Educator Upskilling Program:** Require the National Teaching Council (NTC) to design and implement a mandatory continuous professional development (CPD) program for all licensed teachers focused on digital pedagogy and the integration of educational technology in the classroom. This will equip the existing workforce to deliver the modernized curriculum effectively.
- **Evidence Base:** This recommendation is driven by the clear skills gap identified in Section VI. There is high employer demand for ICT proficiency, data analysis for M&E, and digital communication skills <sup>38</sup>, which are not yet core outputs of the mainstream education system.

### 3. Strengthen the Bridge Between Formal Education and the Labour Market

There is a disconnect between the academic environment and the practical realities of the workplace. Graduates often lack the specific, experience-based skills and professional networks needed to transition smoothly into their careers.

- **Recommendation:**
  - **A. Formalize and Expand Work-Integrated Learning:** Transform the National Service Scheme into a more structured career development program. Work with employers in the Yellow Economy (public agencies, NGOs) to create targeted placements that align with national development priorities and high-demand skill areas.
  - **B. Empower University Career Services:** Provide dedicated funding and a national framework to strengthen the capacity of university career services centers.<sup>47</sup> These centers should be tasked with building formal partnerships with employers, developing robust internship and apprenticeship programs, and providing students with practical skills training in areas like CV writing, interview techniques, and professional networking.
- **Evidence Base:** National Service is already a mandatory pathway for most graduates and a key requirement for public sector employment.<sup>35</sup> This recommendation seeks to evolve it from a simple requirement into a strategic talent pipeline.

#### 4. Develop a Policy Framework for the Gig and Informal Economy

The informal and gig economies employ the vast majority of Ghana's workforce but operate in a policy vacuum, leaving workers without social protection and the state without a significant tax base.

- **Recommendation:**

- **A. Legislate Fair Work Standards for the Digital Economy:** Drawing on the principles of the Fairwork Ghana project, develop and pass legislation that establishes minimum standards for pay, conditions, contracts, management, and representation for workers on digital platforms.
  - **B. Create Portable Social Protection and Simplified Tax Systems:** Design a new system, in collaboration with the Social Security and National Insurance Trust (SSNIT) and the Ghana Revenue Authority (GRA), that allows informal and gig workers to make flexible contributions toward pensions and health insurance. Simultaneously, introduce a simplified, mobile-money-based tax registration and payment system for small-scale informal businesses, focusing on education and trust-building to improve compliance.
- **Evidence Base:** This recommendation directly addresses the findings of the Fairwork Ghana report, which highlights precarious conditions and a lack of labor rights in the gig economy <sup>3</sup>, and the BudgIT Ghana report, which points to low tax compliance in the informal sector due to mistrust and complexity.<sup>1</sup>

#### 5. Foster Regional Hubs for Yellow Economy Employment

The geographic concentration of high-value employment in the Greater Accra Region exacerbates regional inequality and represents a missed opportunity for balanced national development.

317. **Recommendation:**

1. **A. Invest in Regional Digital Infrastructure:** Launch a targeted national program to improve the quality and affordability of internet access in regional capitals and district centers. This is a prerequisite for enabling remote work

and decentralized digital service delivery.

2. **B. Implement a Regional Development Initiative Fund:** Create a fund to provide grants and capacity-building support to MMDAs and local NGOs in regions outside of Accra, particularly in the northern regions. This fund would support the development of local projects and the creation of sustainable Yellow Economy jobs in areas such as community-based tourism, agricultural extension services, and local governance.
318. **Evidence Base:** The analysis in Section VI clearly shows the concentration of NGO headquarters and senior administrative roles in Accra <sup>8</sup>, while project implementation occurs in regional hubs like Tamale.<sup>8</sup> Improving digital infrastructure can help decentralize not just implementation but also higher-value administrative and analytical work, leveraging the growing trend of remote employment.<sup>19</sup>

## Works cited

319. BudgIT Ghana to launch report on informal sector tax compliance ..., accessed June 25, 2025, <https://citinewsroom.com/2025/06/budgit-ghana-to-launch-report-on-informal-sector-tax-compliance-june-26/>
320. Informal workers comprise 80% of Ghana's workforce – new report, accessed June 25, 2025, <https://africanmarketingconfederation.org/informal-workers-comprise-80-of-ghanas-workforce-new-report/>
321. Gig economy platforms create about 100,000 jobs – report - B&FT, accessed June 25, 2025, <https://thebftonline.com/2021/12/06/gig-economy-platforms-create-about-100000-jobs-report/>
322. Ministry of Labour, Jobs & Employment - job seekers, accessed June 25, 2025, <https://melr.gov.gh/6/7/job-seekers>
323. Current Job Vacancies - Ghana Labour Market Information System, accessed June 25, 2025, <https://glmis.gov.gh/jobs/joblistings>
324. accessed January 1, 1970, <https://www.psc.gov.gh/careers/>
325. GES seeks clearance extension to settle salary arrears of newly posted teachers, accessed June 25, 2025, <https://www.myjoyonline.com/ges-seeks-clearance-extension-to-settle-salary-arrears-of-newly-posted-teachers/>
326. Jobs in Ghana - Accra - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/ngo-npo-charity>
327. NGO/IGO/INGO Jobs - Jobsinghana.com - Jobs Directory, accessed June 25, 2025, <https://www.jobsinghana.com/jobs/indexnew.php?device=d&indu=130>
328. Ministry of Labour, Jobs & Employment - Ministry of Labour, Jobs and Employment Relations, accessed June 25, 2025, <https://melr.gov.gh/>
329. YEA Job Centre, Youth Employment Agency, Jobs in Ghana, Job vacancies in Ghana, Jobs in Ghana, Latest Jobs in Ghana, Current Jobs in Ghana, Youth

- Opportunities, accessed June 25, 2025, <https://yeajobcentre.gov.gh/>
330. Public Services Commission - Ghana.GOV, accessed June 25, 2025, <https://www.ghana.gov.gh/mdas/809da8decc/>
331. Public Services Commission of Ghana - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Public\\_Services\\_Commission\\_of\\_Ghana](https://en.wikipedia.org/wiki/Public_Services_Commission_of_Ghana)
332. Casibom - Casibom Giriş Resmi Adresi 2025, accessed June 25, 2025, <https://ges.gov.gh/>
333. accessed January 1, 1970, <https://ges.gov.gh/vacancies/>
334. Current Public Sector Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/public-sector-jobs-in-ghana/>
335. Ghanajob.com: Job Vacancies and Recruitment in Ghana, accessed June 25, 2025, <https://www.ghanajob.com/>
336. Jobberman: Find the Right Job Vacancies in Ghana, accessed June 25, 2025, <https://www.jobberman.com.gh/>
337. Jobs vacancies in Ghana | UN EU and international organizations, accessed June 25, 2025, <https://www.impactpool.org/countries/Ghana>
338. Jobs in Ghana - Development Aid, accessed June 25, 2025, <https://www.developmentaid.org/amp/jobs-in-ghana>
339. The Best Freelancers For Hire In Ghana - Upwork™, accessed June 25, 2025, <https://www.upwork.com/hire/gh/>
340. Freelance Jobs in Ghana - Twine, accessed June 25, 2025, <https://www.twine.net/jobs/in/ghana>
341. Remote Jobs in Ghana, Hiring Now - Find Online Jobs Near You - FlexJobs, accessed June 25, 2025, <https://www.flexjobs.com/remote-jobs/world/ghana>
342. Top 10 Freelance Tech Platforms in Africa - Tech In Africa, accessed June 25, 2025, <https://www.techinafrica.com/top-10-freelance-tech-platforms-in-africa/>
343. BudgIT to launch report on informal sector tax compliance in Accra - Asaase Radio, accessed June 25, 2025, <https://asaaseradio.com/budgit-to-launch-report-on-informal-sector-tax-compliance-in-accra/>
344. Frequently Asked Questions - LOCAL GOVERNMENT SERVICE, accessed June 25, 2025, <https://lgs.gov.gh/frequently-asked-questions/>
345. Job Vacancy For Technician Engineer - Accra - Current Jobs in Ghana, accessed June 25, 2025, <https://www.ghanacurrentjobs.com/job-vacancy-for-technician-engineer/>
346. Districts of Ghana - Wikipedia, accessed June 25, 2025, [https://en.wikipedia.org/wiki/Districts\\_of\\_Ghana](https://en.wikipedia.org/wiki/Districts_of_Ghana)
347. Jobs - Suame Municipal Assembly, accessed June 25, 2025, <http://suamema.gov.gh/index.php/jobs-2/>
348. Public Sector Jobs - Jobsinghana.com - Jobs Directory, accessed June 25, 2025, <https://www.jobsinghana.com/jobs/indexnew.php?&device=d&view=33928>
349. vacancy announcement - GTEC | News, accessed June 25, 2025, <https://www.gtec.edu.gh/news/BDBA3C1-8D62-45>
350. Jobs - National Teaching Council, accessed June 25, 2025,



- <https://ntc.gov.gh/jobs/>
351. NATIONAL COUNCIL FOR CURRICULUM AND ASSESSMENT JOB VACANCIES - NaCCA, accessed June 25, 2025, <https://nacca.gov.gh/wp-content/uploads/2022/06/NaCCA-Job-Vacancies.pdf>
352. Vacancies | Commission for Technical and Vocational Educational and Training, accessed June 25, 2025, <https://ctvet.gov.gh/vacancies/>
353. ghana education service, accessed June 25, 2025, <https://ges.gov.gh/wp-content/uploads/2020/07/RECRUITMENT-ADVERT.pdf>
354. 2023 GES Recruitment Process | Step-by-Step Process #gesrecruitment - YouTube, accessed June 25, 2025, [https://www.youtube.com/watch?v=in41qGsLR\\_s](https://www.youtube.com/watch?v=in41qGsLR_s)
355. Current Education Jobs in Ghana 2025 - See Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/job-category/education-jobs-in-ghana/>
356. Careers | GIS - Ghana International School, accessed June 25, 2025, <https://gis.edu.gh/careers/>
357. Full Time Education Jobs in Accra & Tema Region - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/education/accra-tema/full-time?page=3>
358. Teaching Jobs in Ghana - Teach Away, accessed June 25, 2025, <https://www.teachaway.com/teach-ghana>
359. Teach English in Ghana: Requirements, Salary, Jobs (2025) - Teast, accessed June 25, 2025, <https://teast.co/teach-english-ghana>
360. Employment Opportunities - Vacancies - University of Ghana, accessed June 25, 2025, <https://old1.ug.edu.gh/employment-opportunities>
361. Senior Lecturer at University of Cape Coast - Jobweb Ghana, accessed June 25, 2025, <https://jobwebghana.com/jobs/senior-lecturer-university-cape-coast-5/>
362. Lecturer at University of Ghana - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/lecturer-at-university-of-ghana-4nq0kp-v1>
363. Vacancy for Librarian - Ghana Baptist University College, accessed June 25, 2025, <https://gbuc.edu.gh/librarian-vacancy.php>
364. Registrar At Kwame Nkrumah University Of Science And Technology (knust) - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/registrar-at-kwame-nkrumah-university-of-science-and-technology-knust-20mzed>
365. Career Services | Careers and Counselling Centre - University of Ghana, accessed June 25, 2025, <https://www.ug.edu.gh/careers/career-services>
366. COLLEGE OF EDUCATION, UNIVERSITY OF GHANA VACANCIES FOR NATIONAL SERVICE PERSONNEL FOR THE 2025/2026 ACADEMIC YEAR The Central A, accessed June 25, 2025, <http://www.ug.edu.gh/sites/default/files/VACANCY%20FOR%20NATIONAL%20SERVICE%20PERSONNEL%202025.pdf>
367. KNUST Career Services Centre Empowers Students with Employable Skills and

- CV Writing Expertise, accessed June 25, 2025,  
<https://focusfmknust.com/2024/02/21/knust-career-services-centre-empowers-students-with-employable-skills-and-cv-writing-expertise/>
368. Special Education Teacher at Southeastern Montessori Academy - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/special-education-teacher-vw6zd8>
369. Jobs at New Horizon Special School - Accra - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/company/new-horizon-special-school-167177567dd925>
370. GHANA LIBRARY AUTHORITY RECRUITMENT INTO GHANA LIBRARY AUTHORITY Date: 14th November 2023 Ghana Library Authority (GhLA) is a pu, accessed June 25, 2025, <https://www.library.gov.gh/assets/docs/vacancy-announcement-2023.pdf>
371. Facilitator/ Teacher at STERLING INTERNATIONAL SCHOOL - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/facilitator-zp970k>
372. Jobs at Universities in Ghana - HigherEdJobs, accessed June 25, 2025, <https://www.higheredjobs.com/international/search.cfm?CountryCode=81&Remote=1,2>
373. Work for UNICEF | UNICEF Ghana, accessed June 25, 2025, <https://www.unicef.org/ghana/work-unicef>
374. Careers - Ghana Center for Democratic Development, accessed June 25, 2025, <https://cddgh.org/careers/>
375. Join Us - United Way Ghana, accessed June 25, 2025, <https://www.unitedwaygh.org/join-us.php>
376. Community & Social Services Jobs in Ghana | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs/community-social-services>
377. Principal Manager, Monitoring & Evaluation at Ghana Investment Fund for Electronic Communications (GIFEC) - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/principal-manager-monitoring-evaluation-at-ghana-investment-fund-for-electronic-communications-gifec-r8enmq-v2>
378. Monitoring, Evaluation, Research, and Learning (MERL) Associate - Jobberman Ghana, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/monitoring-evaluation-research-and-learning-merl-associate-wp6kek>
379. Project Coordinator at Jobberman's Client Jobs, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/project-coordinator-wp7wgm>
380. Project Coordinator at Alinea International | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/project-coordinator-20x04v>
381. Social Work Jobs - Jobsinghana.com - Jobs Directory, accessed June 25, 2025, <https://www.jobsinghana.com/jobs/indexnew.php?&device=d&view=52113>
382. Community Relations Manager at Genser Energy | Jobberman, accessed June

- 25, 2025, <https://www.jobberman.com.gh/listings/community-relations-manager-vw8mvg>
383. Professors / Associate Professors Of Engineering at Pentecost University | Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/professors-associate-professors-of-engineering-r8w2d8>
384. Lead For Ghana recruits young graduates for mentorship - Graphic Online, accessed June 25, 2025, <https://www.graphic.com.gh/news/general-news/lead-for-ghana-recruits-young-graduates-for-mentorship.html>
385. Ghana government asked to establish more universities to absorb SHS students, accessed June 25, 2025, <https://www.ghanabusinessnews.com/2020/07/11/ghana-government-asked-to-establish-more-universities-to-absorb-shs-students/>
386. Jobs in Ghana - Accra - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/jobs>
387. Deputy Microfinance Manager at Suma Rural Bank Limited - Jobberman Ghana, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/deputy-microfinance-manager-q2n474>
388. Principal Officer, Marketing and Public Relations at Reputable State Institution - Jobberman, accessed June 25, 2025, <https://www.jobberman.com.gh/listings/principal-officer-marketing-and-public-relations-at-reputable-state-institution-d7pke7-v2>
389. Careers and Counselling Centre - University of Ghana, accessed June 25, 2025, <https://www.ug.edu.gh/careers/>