

# **Senegal's Blue Economy: A Nationwide Workforce and Employment Opportunity Analysis**

## **Part I: The Strategic and Economic Architecture of Senegal's Blue Economy**

### **Section 1: National Policy Imperatives and Institutional Framework**

The Republic of Senegal is at a pivotal moment, strategically positioning its extensive marine and coastal resources as a central engine for future economic growth, social development, and national sovereignty. This ambition is not a standalone objective but is deeply embedded within the nation's highest-level development blueprints. The Blue Economy is explicitly identified as a key sector to be explored, particularly in coastal zones, to unlock its full potential for private sector development and overall economic transformation.<sup>1</sup> This strategic orientation is a core component of the overarching national development frameworks, including the "Plan Sénégal Émergent" (PSE) and its successor, the "VISION SÉNÉGAL 2050 - Stratégie nationale de Développement 2025-2029".<sup>1</sup> These strategies frame the sustainable use of marine, coastal, and fluvio-lacustrine ecosystems as fundamental to improving living conditions through inclusive and durable economic growth.<sup>3</sup>

This national vision is powerfully amplified by a confluence of international partnerships and targeted sectoral reforms, creating significant momentum. A paramount example is Senegal's eligibility for a third regional Compact with the U.S. Millennium Challenge Corporation (MCC), which is specifically oriented towards the Blue Economy.<sup>3</sup> This partnership signifies a major injection of capital and technical expertise aimed at developing coastal city economies, which concentrate nearly 70%

of the country's economic activity.<sup>7</sup> The MCC compact, expected to be implemented starting in 2025, will focus on selective, high-impact investments in coastal urban areas, aligning with the priorities of the new government.<sup>5</sup>

This high-level strategic push is being translated into concrete action through a series of ambitious legal and policy reforms across key sub-sectors. The government has mandated the finalization of a new, comprehensive national maritime and portuary policy by March 2025, a plan that includes the ambitious construction of 23 new ports dedicated to artisanal fishing to bolster Senegal's maritime leadership.<sup>9</sup> This is complemented by a major revision of the national Maritime Code, which introduces over 800 new articles to modernize the legal framework governing the sector.<sup>11</sup> Furthermore, recognizing the twin challenges of food security and resource depletion, Senegal has launched the National Sustainable Aquaculture Development Strategy (SNDAq) for 2023-2032. With a budget of 129 billion FCFA, this strategy aims to achieve a production of 65,000 tonnes and create 50,000 direct and indirect jobs, positioning aquaculture as a new pillar of economic growth.<sup>12</sup>

This dynamic policy environment, characterized by the simultaneous pursuit of national strategies and the implementation of major internationally-backed programs, creates a complex but opportunity-rich landscape. While this convergence generates powerful momentum, it also introduces a period of significant regulatory flux. The successful realization of these ambitions hinges on the capacity of the national institutional framework to implement these policies and the ability of the workforce to meet the new and evolving skills demands.

## 1.2 Mapping the Institutional Ecosystem

The governance of Senegal's Blue Economy is distributed across a network of ministries, public agencies, and state-owned enterprises, each with a specific mandate. Understanding this institutional architecture is critical for navigating the sector's employment landscape.

**Ministry of Fisheries, Maritime, and Port Infrastructures (MPEMIP):** This ministry serves as the central coordinating body for the Blue Economy. Its current title, updated from the former "Ministry of Fisheries and Maritime Economy," reflects an expanded focus on infrastructure.<sup>13</sup> Governed by official decrees, its organizational

structure includes a cabinet, a general secretariat, and numerous specialized directorates responsible for the entire value chain.<sup>15</sup> Its core mandates encompass the development and implementation of state policy on maritime and continental fisheries, the management and surveillance of fisheries, the promotion of aquaculture, the development and control of fish processing industries, and the planning and oversight of port infrastructure development.<sup>15</sup> The ministry provides technical oversight for key entities like the Port of Dakar and the National Agency for Maritime Affairs.<sup>15</sup>

**National Aquaculture Agency (Agence Nationale de l'Aquaculture - ANA):**

Placed under the supervision of the MPEMIP, the ANA is the primary implementing body for the national aquaculture development policy.<sup>18</sup> Its mission is to identify and develop sites for marine and continental aquaculture, provide technical and managerial support to entrepreneurs and project holders, seek national and international investors, and promote international cooperation in the field.<sup>18</sup> The ANA plays a pivotal role in achieving the ambitious job creation and production targets set forth in the SNDAq 2023-2032.<sup>12</sup>

**Autonomous Port of Dakar (Port Autonome de Dakar - PAD) and the National**

**Port System:** The PAD is a public enterprise that manages and operates the Port of Dakar, the third-largest port in West Africa and a critical logistical hub for the entire sub-region.<sup>22</sup> Its mission includes the maintenance and extension of port facilities and the management of its assets.<sup>23</sup> The port's strategic importance is underscored by the national plan to establish a major portuary, industrial, and logistic hub by 2035, centered around a platform of three world-class ports: Dakar, the new deep-water port of Ndayane, and Bargny-Sendou.<sup>25</sup> This strategy aims to structurally transform the national economy, which relies on maritime transport for over 95% of its external trade.<sup>25</sup>

**PETROSEN (Société des Pétroles du Sénégal):** As the national oil company, PETROSEN is the state's primary instrument for implementing hydrocarbon policy.<sup>26</sup> It is a majority state-owned enterprise (99%) responsible for the promotion, exploration, and production of oil and gas resources.<sup>26</sup> PETROSEN is a key partner in the joint ventures operating Senegal's major offshore projects, including the Sangomar oil field and the Grand Tortue Ahmeyin (GTA) gas field, which are central to the emerging offshore energy sector.<sup>26</sup>

**Other Key Bodies:** Several other entities play crucial roles. The **National Agency for**

**Maritime Affairs (Agence Nationale des Affaires Maritimes - ANAM)** is responsible for maritime administration and regulation.<sup>15</sup> The

**Senegalese Shippers' Council (Conseil Sénégalais des Chargeurs - COSEC)** represents the interests of shippers.<sup>15</sup> Environmental governance is supported by bodies such as the

**Direction of Environment and Classified Establishments (Direction de l'Environnement et des Établissements Classés - DEEC)**, which plays a role in environmental impact assessments for major projects.<sup>27</sup>

The table below provides a consolidated overview of the key policy initiatives and their corresponding governing institutions, offering a strategic map of the forces shaping employment in Senegal's Blue Economy.

**Table 1: Key Blue Economy Policy Initiatives and Governing Bodies**

Policy/Initiative Name	Lead Ministry/Agency	Key Objectives	Timeframe
<b>VISION SÉNÉGAL 2050 / Stratégie de Dév. 2025-2029</b>	Government of Senegal	Promote endogenous, sustainable development; position Blue Economy as a competitive economic driver.	2025-2029 / 2050
<b>MCC Regional Compact (Blue Economy)</b>	Government of Senegal / Millennium Challenge Corporation (USA)	Improve living conditions via sustainable economic growth in coastal cities; focus on marine, coastal, and fluvio-lacustrine ecosystems.	Implementation expected 2025
<b>National Sustainable Aquaculture Development</b>	Ministry of Fisheries, Maritime, and Port Infrastructures (MPEMIP) / National	Achieve 65,000 tonnes of aquaculture production; create	2023-2032

<b>Strategy (SNDAq)</b>	Aquaculture Agency (ANA)	50,000 direct/indirect jobs; position aquaculture as a pillar of growth.	
<b>New Maritime and Portuary Policy</b>	Ministry of Fisheries, Maritime, and Port Infrastructures (MPEMIP) / Port Autonome de Dakar (PAD)	Strengthen Senegal's maritime leadership; includes construction of 23 new artisanal fishing ports.	Finalization by March 2025
<b>Maritime Code Revision</b>	Government of Senegal	Modernize the legal framework governing all maritime activities with over 800 new articles.	Enacted June 2025
<b>Offshore Hydrocarbon Development (Sangomar, GTA)</b>	Ministry of Hydrocarbons / PETROSEN	Develop and produce offshore oil and gas reserves to secure energy supply and generate state revenue.	Ongoing

Data compiled from sources.<sup>1</sup>

## Part II: Sector-by-Sector Employment Landscape Analysis

### Section 2: Fisheries and Aquaculture Operations

The fisheries and aquaculture sector represents the historical and social backbone of Senegal's Blue Economy. It is a sector of profound contrasts, comprising a vast, predominantly informal artisanal fishery that provides livelihoods for an estimated 600,000 to 800,000 people directly and indirectly, and a more structured industrial fishing and processing segment.<sup>2</sup> This sector covers 70% of the population's protein

needs and is therefore central to national food security.<sup>2</sup> However, it faces a critical challenge: the severe depletion of key fish stocks due to overexploitation, which threatens the sustainability of these traditional livelihoods.<sup>31</sup> In response, the government has initiated a major strategic pivot towards aquaculture. The National Sustainable Aquaculture Development Strategy (SNDAq) 2023-2032 is a clear manifestation of this policy, aiming to relieve pressure on wild stocks by creating 50,000 new jobs and generating 65,000 tonnes of farmed fish annually, thereby transforming aquaculture into a new engine of economic growth and employment.<sup>12</sup> This transition from capture to culture is reshaping the entire employment landscape of the sector.

## 2.2 Occupational Mapping

The workforce in this sector can be segmented into four interconnected operational areas: fishing operations, aquaculture, processing, and logistics/commercialization.

### Artisanal and Industrial Fishing:

This sub-sector encompasses the full range of fishing activities, from small-scale pirogues to large industrial trawlers.

1. **Position Identification:** Key roles include *Pêcheur* (Fisherman/Crew Member), *Capitaine de Pirogue* (Pirogue Captain), *Matelot* (Deckhand), and *Mécanicien de Pirogue* (Pirogue Mechanic) for the artisanal fleet.<sup>32</sup> In the industrial fleet, roles are more formalized, including *Capitaine de Pêche* (Fishing Captain), *Officier de Pont* (Deck Officer), and *Marin Pêcheur* (Industrial Seaman).
2. **Employment Structure:** Employment in the artisanal sector is overwhelmingly informal and community-based, often organized around family units or local economic interest groups (GIEs).<sup>32</sup> Access to these roles is primarily through community and family networks. The industrial sector offers more formal, salaried contracts. Employment is highly seasonal, dictated by fishing seasons and resource availability.
3. **Competency Requirements:** Artisanal roles require deep traditional knowledge of fishing grounds, weather patterns, and net handling techniques, alongside practical skills in engine maintenance and repair. Industrial roles demand formal certifications, such as those compliant with Standards of Training, Certification

and Watchkeeping for Seafarers (STCW), vessel navigation, and safety protocols.<sup>33</sup>

4. **Compensation:** In the artisanal sector, compensation is typically based on a share system, where the revenue from the catch is divided among the owner of the pirogue, the engine, and the crew members after deducting operational costs like fuel and food.<sup>34</sup> For industrial roles, formal salaries are the norm.
5. **Market Access:** Opportunities are found through direct engagement at landing sites (quais de pêche), within fishermen's cooperatives and associations, and through family connections.<sup>35</sup>

Aquaculture (Fish and Shellfish Farming):

Driven by the SNDAq, this sub-sector is poised for significant expansion.

- **Position Identification:** The development of fish and shellfish farms creates demand for a new set of specialized roles, including *Gestionnaire de Ferme Piscicole* (Fish Farm Manager), *Technicien Aquacole* (Aquaculture Technician), *Ouvrier Piscicole* (Fish Farm Worker), *Spécialiste en Alevinage* (Hatchery Specialist), and *Producteur d'Huîtres* (Oyster Farmer).<sup>37</sup>
- **Employment Structure:** Employment ranges from formal, full-time salaried positions on large commercial farms to contract-based and community-based roles in smaller cooperative projects. There is also a growing number of freelance and entrepreneurial opportunities for individuals starting their own small-scale farms.<sup>37</sup>
- **Competency Requirements:** Technical skills are paramount and include water quality monitoring and management, feed formulation and management, disease prevention and treatment, hatchery and nursery operations, and system maintenance (e.g., ponds, cages, recirculating systems). For entrepreneurs and managers, skills in business planning, financial management, and marketing are essential.<sup>12</sup>
- **Educational and Professional Pathways:** Formal qualifications are becoming increasingly important. Key training institutions include the **Centre National de Formation des Techniciens de la Pêche et de l'Aquaculture (CNFTPA)** and the **Institut Universitaire de Pêche et d'Aquaculture (IUPA)** at UCAD, which offer diplomas and degrees in aquaculture and related fields.<sup>41</sup> Apprenticeships on existing farms provide an alternative pathway for practical experience.
- **Compensation:** Compensation varies by role and scale. Entry-level workers may receive wages, while technicians and managers command formal salaries. According to survey data, *Directeurs et cadres de direction, aquaculture et pêche* can earn a net monthly salary ranging from 366,012 FCFA to over



1,093,767 FCFA, reflecting the high value placed on managerial expertise in this growing field.<sup>44</sup>

#### Processing and Value Addition:

This segment is critical for reducing post-harvest losses and increasing the economic value of seafood products. It is notably dominated by women, particularly in the artisanal sub-sector.

1. **Position Identification:** Roles include the ubiquitous *Femme Transformatrice* (Female Fish Processor), *Opérateur de Filetage* (Fileting Operator) in industrial plants, *Responsable Qualité* (Quality Manager), and *Technicien de Transformation des Produits de la Mer* (Seafood Processing Technician).<sup>45</sup>
2. **Employment Structure:** The artisanal processing sector is characterized by informal, self-employed, or community-based work, with thousands of women engaged in traditional smoking (ketiak), drying (guedj), and salting of fish at processing sites along the coast.<sup>47</sup> Industrial processing plants (canneries, freezing units) offer formal, full-time employment.
3. **Competency Requirements:** Artisanal processors possess highly developed traditional skills. In the formal sector, competencies include knowledge of Hazard Analysis and Critical Control Points (HACCP) standards, strict hygiene protocols, modern processing and packaging technologies, and laboratory-based quality control analysis.<sup>46</sup>
4. **Educational and Professional Pathways:** While traditional skills are passed down through generations, formal roles require vocational training or degrees in food science or technology. Organizations like the Direction des Industries de Transformation de la Pêche (DITP) provide regulatory oversight and support for upgrading standards.<sup>15</sup>
5. **Compensation:** Compensation structures are highly divergent. Informal processors' incomes depend on daily sales and market fluctuations, while factory workers receive formal wages and salaries.

#### Logistics and Commercialization:

This segment connects the points of capture and production to domestic and international markets.

6. **Position Identification:** Key actors are the *Mareyeur* (Fish Trader/Wholesaler), who buys directly from fishers, and more formal roles like *Coordinateur de la Chaîne du Froid* (Cold Chain Coordinator) and *Commercial (Produits de la Mer)* (Seafood Sales Agent).<sup>50</sup>
7. **Employment Structure:** This area features a mix of informal, independent



traders and formal employment within logistics firms and export companies. Job advertisements for roles like "Commercial (H/F) – Produits de la mer" indicate demand for professionals to manage B2B sales to hotels, restaurants, and supermarkets.<sup>50</sup>

8. **Competency Requirements:** Skills include negotiation, market analysis, logistics planning, management of cold chain infrastructure (refrigerated trucks, cold rooms), knowledge of export regulations, and customer relationship management.<sup>51</sup>
9. **Compensation:** Varies from commission-based earnings for traders to structured salaries for logistics and sales professionals in formal companies.

The strategic emphasis on developing a robust aquaculture sector is not merely about creating new jobs; it necessitates a fundamental transformation of the workforce. The skills required for successful aquaculture—spanning biology, chemistry, engineering, and business management—are distinctly different from those of traditional capture fisheries. This reality implies that the success of the SNDAQ is contingent upon a massive, coordinated effort in vocational training, reskilling, and upskilling. Institutions like CNFTPA and IUPA are at the heart of this challenge and will need to significantly scale their capacity and potentially adapt their curricula to produce the thousands of qualified technicians and managers required to meet the 2032 goals. This includes developing "reconversion" programs to offer viable alternative livelihoods for artisanal fishers impacted by dwindling wild stocks, a need explicitly recognized in development project designs.<sup>53</sup>

**Table 2.1: Occupational Profile Matrix for Fisheries and Aquaculture Operations**

Role	Sub-sector	Employment Type	Experience Level	Key Skills	Education/Certification	Compensation Indicator (XOF/month)
<b>Pêcheur / Matelot</b>	Artisanal Fishing	Informal, Community-based, Seasonal	Entry to Senior	Net handling, traditional navigation, species knowledge	Apprenticeship, family training	Share of catch

<b>Technicien Aquacole</b>	Aquaculture	Formal (Full-time, Contract)	Entry to Mid	Water quality management, feed protocols, disease prevention	Diploma (CNFPTA, IUPA)	150,000 - 400,000 (Estimate)
<b>Gestionnaire de Ferme Piscicole</b>	Aquaculture	Formal (Full-time)	Senior	Business planning, staff management, biosecurity, financial mgt.	Degree (IUPA), extensive experience	350,000 - 1,000,000 <sup>44</sup>
<b>Femme Transformatrice</b>	Artisanal Processing	Informal, Self-employed, Community-based	All levels	Traditional smoking, drying, salting techniques	Informal training, GIE membership	Variable (based on sales)
<b>Responsable Qualité (Usine)</b>	Industrial Processing	Formal (Full-time)	Mid to Senior	HACCP, ISO standards, lab analysis, traceability systems	Degree (Food Science, Biology)	300,000 - 800,000 (Estimate)
<b>Commercial (Produits de la Mer)</b>	Commercialization	Formal (Full-time, CDD)	Mid-level	B2B sales, negotiation, market knowledge, client portfolio mgt.	Degree (Commerce, Marketing)	250,000 - 600,000 + commission <sup>50</sup>
<b>Coordinateur Chaîne du Froid</b>	Logistics	Formal (Full-time)	Mid-level	Cold storage management,	Diploma/Degree (Logistics)	250,000 - 550,000 (Estimate)

				transport logistics, temperatu re control tech.		
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## Section 3: Marine Conservation and Environmental Monitoring

The marine conservation and environmental monitoring sector in Senegal is a dynamic and growing field, driven by the urgent need to protect the country's rich marine biodiversity, manage its network of Marine Protected Areas (MPAs), and restore critical but degraded ecosystems such as mangroves and coastal habitats.<sup>54</sup> This sector is characterized by a strong presence of national and international non-governmental organizations (NGOs), research institutions, and community-based associations that work in close partnership with government bodies. Employment in this domain is often tied to specific, donor-funded projects, creating a vibrant but specialized job market.

### 3.2 Occupational Mapping

The roles in this sector are diverse, combining scientific fieldwork, community engagement, and project management.

10. **Position Identification:** Common job titles include *Coordinateur de Projet de Conservation* (Conservation Project Coordinator), *Agent de Parc Marin* (Marine Park Ranger), *Agent de Terrain* (Field Officer), *Technicien de Suivi Écologique* (Ecological Monitoring Technician) specializing in areas like coral reefs, mangroves, or sea turtles, *Agent de Liaison Communautaire* (Community Liaison Officer), *Spécialiste en Suivi de la Biodiversité Marine* (Marine Biodiversity Monitoring Specialist), and *Spécialiste en Surveillance de la Pollution Marine* (Marine Pollution Monitoring Specialist).<sup>57</sup>
11. **Employment Structure and Engagement Models:** Employment is predominantly project-based and contractual. Full-time or fixed-term contracts

are typically offered for the duration of a specific project, which can range from one to several years. These opportunities are advertised by a host of organizations, including the **Partenariat Régional pour la Conservation de la zone côtière et Marine (PRCM)** <sup>57</sup>, **Blue Ventures** <sup>60</sup>, the **International Union for Conservation of Nature (IUCN)** <sup>59</sup>, **OCEANIUM** <sup>63</sup>, and the **African Aquatic Conservation Fund**.<sup>64</sup> This creates a "gig-based" economy for highly skilled conservation professionals who move between projects and organizations. Volunteer and internship positions are also common, providing entry points into the sector.

## 12. **Technical and Professional Competency Requirements:**

1. **Technical Skills:** A strong foundation in ecological principles is essential. Specific skills include species identification (fish, corals, birds, marine mammals), ecological survey methodologies (e.g., transects, quadrats), data collection and management protocols, and familiarity with Geographic Information Systems (GIS) and remote sensing for habitat mapping and analysis.<sup>65</sup> For roles involving underwater work, professional diving certifications (e.g., SCUBA, CAH Class 1B) are mandatory.<sup>58</sup>
2. **Advanced and Soft Skills:** Project management is a core competency, including planning, budgeting, and reporting. Strong community engagement and facilitation skills are critical for roles that involve working with local fishing communities to establish co-management systems or alternative livelihoods.<sup>59</sup> Grant writing and fundraising abilities are highly valued, especially at the coordinator level. Proficiency in French is standard, while English is often required for roles in international NGOs, and local languages are essential for effective community liaison.

## 13. **Educational and Professional Development Pathways:** A formal academic background is typically required, with a Bachelor's or Master's degree in Marine Biology, Environmental Science, Conservation Biology, or a related field being the standard. Experience in community development, sociology, or project management can be equally important. Professional development often occurs through specialized training workshops offered by conservation organizations on topics like MPA management, specific monitoring techniques, or leadership.

## 14. **Compensation and Market Intelligence:** Compensation is generally structured around formal, salaried positions, with pay scales often influenced by the standards of the international NGOs that dominate the sector. For example, a

"Partnership Coordinator" position advertised by Blue Ventures in Dakar offered a gross annual salary range of approximately 10,992,639 FCFA to 14,353,498 FCFA.<sup>60</sup> An "Agent de conservation" position with BirdLife International offered a monthly salary of 2,500 EUR.<sup>67</sup> Stipends for internships and volunteer positions vary.

### 3.3 Key Institutions and Networks

1. **Government:** The primary government body is the **Direction des Aires Marines Communautaires Protégées (DAMCP)**, which is responsible for the national network of MPAs and often collaborates with NGOs on management and surveillance.<sup>68</sup>
2. **NGOs and Civil Society:** Senegal hosts a dense and active network of conservation organizations. Key players include **PRCM**, a coalition of actors working across seven West African countries <sup>65</sup>;  
**OCEANIUM**, a long-standing Senegalese NGO known for mangrove restoration and environmental education <sup>54</sup>;  
**Blue Ventures**, which focuses on community-based fisheries management <sup>69</sup>;  
**IUCN**, which implements various conservation projects <sup>59</sup>;  
**APNEOS**, focused on protecting marine ecosystems and emblematic species <sup>70</sup>;  
and the  
**African Aquatic Conservation Fund**, which runs programs on cetaceans and manatees.<sup>64</sup>
3. **Research and Monitoring:** The **Centre de Suivi Écologique (CSE)** provides critical expertise in environmental monitoring, including the use of geospatial data.<sup>27</sup>

The employment structure within marine conservation reveals a dependency on external funding cycles, creating what can be described as a "project-based economy." The majority of available positions are tied to specific, time-bound projects funded by international donors or foundations, such as the Fonds Français pour l'Environnement Mondial (FFEM) funding PRCM's Resilao project.<sup>57</sup> This model attracts and develops a cadre of highly skilled Senegalese professionals with advanced degrees and specialized technical abilities. However, it also introduces a degree of precarity, as these experts must continually seek new contracts once a

project concludes. This cycle can hinder the development of long-term, stable career paths within the country and risks a "brain drain" of talent if consistent opportunities are not available. A key strategic challenge, therefore, is to transition towards more sustainable financing mechanisms for conservation and to better integrate these skilled roles into permanent government structures, such as the DAMCP, to build lasting institutional capacity and ensure the long-term stewardship of Senegal's marine resources.

## Section 4: Maritime Transport and Port Operations

The maritime transport and port operations sector is a fundamental pillar of Senegal's national economy and its strategic gateway to West Africa and the world. The Port of Dakar, a natural deep-water harbor, is the country's primary commercial port, handling approximately 95% of its external trade and serving as an essential transshipment hub for landlocked neighbors like Mali.<sup>22</sup> The sector's critical importance is reflected in the government's ambitious strategy to transform Senegal into a premier portuary, industrial, and logistical hub by 2035. This vision is being actualized through massive infrastructure investments, including the development of new, modern, deep-water ports at Ndayane and Bargny-Sendou.<sup>25</sup> This planned expansion is set to create a significant and sustained demand for a wide spectrum of skilled professionals, fundamentally reshaping the employment landscape in logistics and transport for decades to come.

### 4.2 Occupational Mapping

Employment in this sector is concentrated within port authorities, terminal operators, shipping agencies, and a wide array of logistics and freight forwarding companies.

4. **Position Identification:** The sector supports a diverse range of roles, from management to technical operations. Key positions include *Gestionnaire des Opérations Portuaires* (Port Operations Manager), *Coordinateur Logistique* (Logistics Coordinator), *Officier de Port* (Port Officer), *Chef de Quai* (Quay Supervisor), *Manutentionnaire / Docker* (Cargo Handler/Docker), *Conducteur*

*d'Engins Portuaires* (Port Equipment Operator), *Déclarant en Douane* (Customs Broker), *Agent de Transit Maritime* (Maritime Freight Forwarder), and *Officier de Sûreté et de Sécurité Maritime* (Maritime Safety and Security Officer).<sup>71</sup>

5. **Employment Structure and Engagement Models:** Employment is predominantly formal, characterized by full-time, permanent (CDI) and fixed-term (CDD) contracts. Major employers include public entities like the **Port Autonome de Dakar (PAD)** <sup>75</sup>, private international terminal operators such as **DP World Dakar** <sup>76</sup> and **AGL (Africa Global Logistics)** <sup>77</sup>, global shipping lines with local offices (e.g., CMA CGM) <sup>78</sup>, and multinational logistics providers like **DHL Global Forwarding**.<sup>79</sup> A large ecosystem of local transit and logistics companies also provides significant employment.<sup>78</sup>
6. **Technical and Professional Competency Requirements:**
  - **Technical Skills:** Proficiency in logistics and supply chain management is fundamental. This includes expertise in customs procedures and the use of Senegal's digital customs system (GAINDE), port management software (e.g., Terminal Operating Systems), and international trade documentation. For operational roles, skills in operating heavy machinery (cranes, forklifts) and knowledge of cargo handling and stowage are essential. For security roles, a thorough understanding of the International Ship and Port Facility Security (ISPS) Code is required.
  - **Advanced and Digital Capabilities:** The new port strategy emphasizes a shift towards "procédures dématérialisées" and "digitalisation optimisée".<sup>25</sup> This creates a growing demand for skills in digital logistics platforms, data analysis for operational efficiency, and IT systems management.
7. **Educational and Professional Development Pathways:** Formal qualifications are the primary entry route. Specialized diplomas and degrees in Transport & Logistics, Supply Chain Management, and Maritime Affairs are offered by institutions such as the **Centre TRAINMAR de Dakar** <sup>80</sup>, the **Université du Sine Saloum El Hadji Ibrahima Niass (USSEIN)** <sup>73</sup>, and the **École Nationale de Formation Maritime (ENFM)**.<sup>81</sup> Vocational certificates are available for roles like customs declaration and equipment operation. Professional certifications in areas like STCW and ISPS are mandatory for many maritime and security positions.
8. **Compensation and Market Intelligence:** The sector offers formal salaries competitive within the region. Based on job portal data, an *Agent de Transit* can expect a monthly salary ranging from 180,000 FCFA to 500,000 FCFA.<sup>82</sup> A



*Marin* (Seafarer), a broad category, has a typical salary range of 146,800 FCFA to 435,628 FCFA per month.<sup>83</sup> Senior management and specialized technical roles command significantly higher compensation.

### 4.3 Key Institutions and Networks

9. **Government and Public Sector:** The **Port Autonome de Dakar (PAD)** is the landlord and regulatory authority for the port.<sup>23</sup> The **Agence Nationale des Affaires Maritimes (ANAM)** oversees maritime regulation.<sup>27</sup>
10. **Private Sector:** The port ecosystem is rich with private actors, including global terminal operators (**DP World, AGL**)<sup>76</sup>, major shipping lines (**Maersk, CMA CGM**), logistics giants (**DHL**)<sup>79</sup>, and a multitude of national and regional freight forwarding and transit companies.<sup>78</sup>
11. **Training Institutions:** The primary feeders of talent are the **Centre TRAINMAR de Dakar**, which offers licenses and masters in logistics and port management<sup>80</sup>, and the **ENFM**, which provides training for seafarers and other maritime personnel.<sup>81</sup>

The government's explicit strategy to build a world-class port hub by 2035 provides a clear and predictable roadmap for future workforce demand. This is not a speculative goal but a funded, phased national project. The development of new ports at Ndayane and Bargny-Sendou will unfold in distinct stages, each with specific skills requirements. The initial phase demands a massive influx of civil engineers, construction workers, and project managers. This will be followed by a commissioning phase requiring mechanical and electrical engineers, automation specialists, and IT systems integrators to install and test the modern, digitized equipment. Finally, the long-term operational phase will require a permanent workforce of port operations managers, logistics planners, highly skilled equipment operators, data analysts, and cybersecurity specialists to run these efficient, digitally-driven terminals.<sup>25</sup> This predictable, long-term demand presents a unique opportunity for Senegal's educational and vocational training system. By aligning curricula and scaling up programs

now, institutions like ENFM and Centre TRAINMAR can proactively build the talent pipeline needed to staff these critical national assets, ensuring that Senegalese

professionals are at the forefront of this economic transformation.

## Section 5: Coastal and Marine Tourism

Coastal and marine tourism stands as a vital and visible component of Senegal's Blue Economy, serving as a significant source of foreign exchange and employment. The sector's traditional heartland lies along the Petite Côte, with established resort areas in Saly Portudal and La Somone, complemented by unique destinations like the historic city of Saint-Louis and the ecologically rich regions of the Saloum Delta and Casamance.<sup>84</sup> In a notable strategic shift, the current government is moving away from a focus on mass tourism towards a more nuanced policy that prioritizes quality, authenticity, and sustainability.<sup>85</sup> This pivot towards ecotourism, cultural heritage, and community-based models is designed to leverage Senegal's unique natural assets while ensuring that benefits are shared more equitably and the environmental footprint is minimized.<sup>86</sup>

### 5.2 Occupational Mapping

The tourism workforce is a blend of formal employees in the hospitality industry and a dynamic ecosystem of small-scale entrepreneurs and freelance professionals.

12. **Position Identification:** Key roles directly linked to the marine environment include *Guide Touristique* (with specialization in coastal ecosystems, ornithology, or cultural heritage), *Opérateur de Bateau d'Excursion* (Boat Tour Operator), *Moniteur de Plongée* (Diving Instructor), *Coordinateur d'Écotourisme* (Ecotourism Coordinator), *Interprète du Patrimoine Marin* (Marine Heritage Interpreter), and a wide range of *Personnel Hôtelier* (Hotel Staff) in coastal resorts, from management to service roles.<sup>88</sup>
13. **Employment Structure and Engagement Models:** The sector features a diverse mix of engagement models. Large hotels and international tour operators offer formal, full-time and seasonal contracts. However, a significant portion of the workforce, especially guides and small excursion operators, operates on a freelance, gig-based, or small enterprise basis.<sup>92</sup> Employment is often highly

seasonal, peaking during the main tourist season (typically November to April). Community-based tourism is also prevalent, with villages operating "campements" and managing local tourism activities, often through cooperatives or associations.<sup>93</sup>

**14. Technical and Professional Competency Requirements:**

- **Technical Skills:** For guides and operators, deep knowledge of local ecology (mangroves, birdlife, marine fauna), cultural history, and geography is essential. Boat handling and maintenance skills are required for excursion operators. For diving, internationally recognized certifications from bodies like PADI or CMAS are the standard, along with first aid and rescue skills.<sup>54</sup>
- **Soft Skills:** Excellent communication and interpersonal skills are paramount. Fluency in French is standard, with a high demand for English and other European languages (e.g., Spanish) to cater to international visitors.<sup>92</sup> Hospitality, customer service, and problem-solving skills are crucial across all roles.

**15. Educational and Professional Development Pathways:** Formal training is available through vocational schools specializing in tourism and hospitality.<sup>89</sup> Specialized training for guides is also available, often focusing on specific regions or ecological niches. Many skills, particularly in community-based tourism, are acquired through apprenticeships and on-the-job experience.

**16. Compensation and Market Intelligence:** Compensation varies dramatically. A formally employed *Guide de voyage* has a typical monthly salary range of 69,348 FCFA to 190,410 FCFA.<sup>94</sup> Hotel staff salaries are structured according to industry standards. Freelance guides and operators' incomes are dependent on the number of tours they conduct and are subject to seasonal fluctuations. A job advertisement for a contract-based *Agent de Voyage* in M'Bour highlights the flexible, often temporary, nature of employment in the sector.<sup>92</sup>

### 5.3 Key Institutions and Networks

- 17. Government:** The **Ministry of Tourism and Air Transport** is the lead government body responsible for sector policy and promotion.
- 18. Private Sector:** This includes a wide range of actors from large hotel chains (e.g., RIU, Lamantin Beach) and international tour operators (e.g., TUI, Evaneos

partners)<sup>92</sup> to small, local businesses offering specialized experiences like **Sangomar Kayak** (kayaking in the Saloum Delta) or **Accro Baobab Adventure** (adventure tourism).<sup>86</sup>

19. **Community and Associative Networks:** Local guide associations play a key role in organizing and regulating the activities of freelance guides. Community-run "campements" and ecotourism projects, particularly in areas like the Saloum Delta and Casamance, are central to the sustainable tourism model.<sup>87</sup>

The government's strategic reorientation towards sustainable and authentic tourism necessitates a corresponding evolution in the workforce's capabilities. The new model's success does not depend on simply increasing the number of hotel beds, but on the quality and depth of the visitor experience. This requires a shift in skills from generic hospitality to specialized "eco-interpretation." The future demand will be for professionals who are not just drivers or receptionists, but skilled storytellers and facilitators who can interpret the natural environment, explain the cultural significance of a site, and manage tourism activities in a way that is respectful to both the ecosystem and the host community. This implies a need for more sophisticated training programs that go beyond basic language and service skills to incorporate elements of ecology, conservation biology, community development, and small business management. Developing dedicated certification programs for "eco-guides" and "community tourism managers," perhaps in partnership with conservation NGOs and local community associations, will be critical to building a workforce capable of delivering on the promise of a truly sustainable and high-value tourism sector in Senegal.

## **Section 6: Offshore Energy and Marine Renewable Energy**

Senegal is on the cusp of a major energy transformation, driven by the recent development of significant offshore oil and gas reserves. This emerging sector is poised to become a substantial component of the national economy and a new, highly specialized domain within the Blue Economy. The flagship projects, **Sangomar** (oil) and **Grand Tortue Ahmeyin (GTA)** (natural gas, shared with Mauritania), are managed under the stewardship of the national oil company, PETROSEN, in partnership with international energy corporations.<sup>26</sup> While these extractive industries present immense economic opportunities, they also bring complex environmental and

safety challenges.<sup>95</sup> Concurrently, there is growing interest in Senegal's potential for marine renewable energies, such as wave and offshore wind, which represents a future frontier for employment, although this sub-sector is still in a nascent, exploratory phase.

## 6.2 Occupational Mapping

Employment in the offshore energy sector is highly technical, capital-intensive, and governed by stringent international safety standards.

20. **Position Identification:** The operational phase of offshore projects creates demand for a range of specialized roles. These include *Ingénieur Sous-marin* (Subsea Engineer), *Ingénieur de Forage* (Drilling Engineer), *Technicien de Maintenance Offshore* (Offshore Maintenance Technician), *Officier de Sécurité de Plateforme* (Platform Safety Officer), *Conseiller Santé, Sécurité et Environnement (HSE)* (Health, Safety, and Environment (HSE) Advisor), and *Camp Boss* (responsible for managing accommodation and catering on offshore facilities).<sup>96</sup> Support roles include *Contract Support Engineer* and various logistical and administrative positions based onshore.<sup>96</sup> For the nascent marine renewable energy sector, future roles would include *Technicien en Énergie Marine Renouvelable* (Marine Renewable Energy Technician) and *Spécialiste en Évaluation d'Impact Environnemental* (Environmental Impact Assessment Specialist).
21. **Employment Structure and Engagement Models:** Employment is almost exclusively formal, through contracts with the major oil and gas operators (e.g., Woodside, BP) and their extensive network of service contractors. Many roles are offered on a rotational basis (e.g., 28 days on, 28 days off). Recruitment is often managed through specialized energy sector recruitment agencies and platforms.<sup>96</sup>
22. **Technical and Professional Competency Requirements:**
  - **Technical Skills:** Roles demand high-level engineering qualifications (Mechanical, Structural, Electrical, Subsea). Technicians require expertise in maintaining complex machinery in a harsh marine environment. A critical and non-negotiable requirement across all roles is a deep understanding and

practical application of offshore safety protocols, such as BOSIET (Basic Offshore Safety Induction and Emergency Training) and HUET (Helicopter Underwater Escape Training).

- **Advanced Skills:** Project management, contract management, and strong communication skills are essential, particularly for engineering and supervisory roles. English is the standard working language in the international oil and gas industry.

23. **Educational and Professional Development Pathways:** A university degree in a relevant engineering discipline is the standard for engineering roles.

Technicians often possess advanced vocational diplomas. Due to the highly specialized nature of the industry, much of the required competency is gained through specific, certified training courses and on-the-job experience. Job postings for roles like *Contract Support Engineer* specify a preference for degree-qualified engineers with a minimum of 3-5 years of experience in the offshore oil and gas industry.<sup>96</sup>

24. **Compensation and Market Intelligence:** The offshore oil and gas sector is known for offering highly competitive compensation packages to attract and retain specialized talent. Salaries are significantly above the national average and often include allowances for offshore work and comprehensive benefits. While specific salary data for Senegal is limited, global industry benchmarks apply.

### 6.3 Key Institutions and Networks

1. **Government:** The **Ministry of Petroleum and Energies** and the national oil company, **PETROSEN**, are the key state actors overseeing the sector's development and ensuring the state's interests are represented.<sup>26</sup>
2. **Private Sector:** The primary employers are the international oil companies leading the major projects, such as **Woodside Energy** (operator of Sangomar) and **BP** (operator of GTA). A vast ecosystem of international and local service companies provides specialized support, from drilling services to catering and logistics.
3. **Training and Certification:** Specialized training for offshore safety and technical skills is often provided by internationally accredited institutions, and companies frequently send personnel abroad for specific certifications. The development of local training capacity that meets international standards is a key

challenge and opportunity.

The advent of a major offshore hydrocarbon industry presents a dual challenge for Senegal's workforce development. On one hand, it creates a demand for high-skill, high-wage employment. On the other, the required competencies are extremely specialized and must adhere to rigorous global standards, which are not yet widely available through local training institutions. This creates a risk that many of the most valuable technical and managerial positions could be filled by expatriate workers, limiting the direct employment benefits for Senegalese nationals. To maximize local content and ensure that the economic benefits of this new industry are broadly shared, a concerted national strategy is required. This strategy must focus on building local capacity by establishing internationally accredited training centers for key skills (e.g., offshore safety, subsea engineering, specialized maintenance) and by creating clear pathways for Senegalese engineers and technicians to gain the necessary experience and certifications to compete for and excel in these demanding roles.

## **Section 7: Marine Services and Support Functions**

The operational capacity of every sector within the Blue Economy—from fishing pirogues to industrial vessels and from port infrastructure to offshore platforms—depends on a robust and skilled ecosystem of marine services and support functions. This sector provides the essential maintenance, repair, technical support, and specialized services that keep maritime assets functional, safe, and compliant with regulations. It is a foundational sector whose health and competence directly impact the efficiency and viability of all other blue activities. The government's plan to construct new ports and modernize the fishing fleet will further amplify the demand for these crucial support roles.<sup>9</sup>

### **7.2 Occupational Mapping**

This sector is characterized by hands-on technical roles, often requiring a high degree of specialized mechanical, electrical, and electronic expertise.



1. **Position Identification:** Key occupations include *Mécanicien de Marine* or *Mécanicien de Navire* (Marine Mechanic/Ship Mechanic), *Électricien Maritime* (Maritime Electrician), *Technicien en Électronique Marine* (Marine Electronics Technician), *Spécialiste des Équipements de Navigation* (Navigation Equipment Specialist), *Ouvrier de Chantier Naval* (Shipyard Worker), *Soudeur* (Welder), *Technicien en Maintenance Portuaire* (Port Maintenance Technician), and *Plongeur Professionnel* (Commercial Diver) for underwater inspection and maintenance.<sup>98</sup>
2. **Employment Structure and Engagement Models:** Employment is found in a variety of settings. Formal, full-time positions are available in shipyards (like SIRN), port maintenance departments (within PAD), and with large industrial fishing or shipping companies that have in-house maintenance teams. Many skilled technicians, however, operate as independent contractors or work in small, specialized workshops, providing services on a freelance or contract basis, particularly to the artisanal fishing fleet.
3. **Technical and Professional Competency Requirements:**
  1. **Technical Skills:** These roles are defined by their technical prowess. Marine mechanics must have expertise in diesel engines of varying sizes and brands, from small outboard motors to large ship engines.<sup>98</sup> Maritime electricians need skills in vessel wiring, power generation, and distribution systems. Electronics technicians specialize in navigation and communication equipment (GPS, radar, sonar). Welders require certification for marine-grade work. Commercial divers need professional diving certifications and skills in underwater inspection, repair, and construction.
  2. **Advanced Skills:** Diagnostic and problem-solving skills are critical for identifying and resolving complex mechanical or electrical failures. An understanding of maritime safety regulations and environmental standards is also essential.
4. **Educational and Professional Development Pathways:** The primary pathway is through vocational and technical training. Institutions like the **École Nationale de Formation Maritime (ENFM)** and other technical colleges offer diplomas and certificates in marine mechanics, electromechanics, and related trades.<sup>33</sup> Apprenticeships in shipyards and workshops are a vital source of practical, hands-on experience. Job seeker profiles on platforms like Emploisenegal.com show candidates with qualifications from institutions like the *École privée maritime (EPRIM)* and the *Académie régionale des sciences et techniques de la mer (ARSTM)* in Abidjan, indicating both local and regional

training sources.<sup>98</sup>

5. **Compensation and Market Intelligence:** Compensation for formally employed technicians and mechanics is based on salary scales within their respective companies. Freelance technicians' earnings are based on their service fees and the volume of work they can secure. The demand for skilled marine mechanics is evident, with profiles indicating extensive experience with various engine types and management of service teams.<sup>98</sup>

### 7.3 Key Institutions and Networks

1. **Public and State-Owned:** The **Port Autonome de Dakar (PAD)** employs maintenance crews for its infrastructure and equipment. **SIRN (Société des Infrastructures de Réparation Navale)** is a key player in the shipyard and vessel repair sub-sector.
2. **Private Sector:** A wide array of private workshops, engineering firms, and equipment suppliers (e.g., for brands like Perkins, John Deere) form the backbone of this sector.<sup>98</sup> Industrial fishing and shipping companies also have their own maintenance divisions.
3. **Training Institutions:** The **ENFM** and other vocational training centers (e.g., *Lycée technique et professionnel François Xavier Ndioune*) are the main sources of formally trained technicians.<sup>81</sup>

The expansion of port infrastructure and the modernization of the fishing and transport fleets will place increasing pressure on this support sector. A critical dependency exists: without a sufficient pool of qualified marine mechanics, electricians, and technicians, new vessels cannot be maintained, and modern port equipment will fall into disrepair, undermining the massive capital investments being made. This highlights a potential bottleneck. If the supply of skilled technical labor does not keep pace with the growth in maritime assets, it could lead to operational delays, increased costs, and a reliance on foreign technicians. Therefore, strengthening and expanding vocational training programs in marine technical trades is not just a workforce issue but a strategic imperative for ensuring the long-term success and sustainability of the entire Blue Economy.

## Section 8: Research and Policy Development

The sustainable development of Senegal's Blue Economy is underpinned by a crucial, albeit less visible, sector dedicated to research, policy formulation, and governance. This sector provides the scientific evidence, economic analysis, and legal frameworks necessary for informed decision-making. Professionals in this domain work to balance economic exploitation with environmental conservation, ensuring that the growth of the Blue Economy is both profitable and sustainable. They are the architects of the strategies and regulations that guide all other sectors, from fisheries management plans to coastal zone development policies.

### 8.2 Occupational Mapping

This sector is populated by highly educated professionals with expertise in science, economics, law, and public policy.

1. **Position Identification:** Key roles include *Analyste des Politiques Maritimes* (Marine Policy Analyst), *Économiste des Pêches* (Fisheries Economist), *Planificateur de la Gestion des Zones Côtières* (Coastal Zone Management Planner), *Spécialiste Juridique en Environnement* (Environmental Legal Specialist with a marine focus), *Analyste de Données pour l'Évaluation des Stocks* (Data Analyst for Stock Assessment), and *Spécialiste en Systèmes d'Information Géographique (SIG) pour la Cartographie Marine* (GIS Specialist for Marine Mapping).<sup>101</sup>
2. **Employment Structure and Engagement Models:** Employment is concentrated in government ministries, public research institutions, universities, and international development organizations. Roles are typically formal, full-time positions. Consultancy is also a common engagement model, with experts hired on a contract basis by government agencies or development partners to conduct specific studies or formulate policy documents.<sup>102</sup>
3. **Technical and Professional Competency Requirements:**
  1. **Technical Skills:** Strong analytical and research skills are fundamental. Economists require econometric modeling skills to analyze the economic performance of fisheries. Biologists and data analysts use statistical models

for fish stock assessment. Planners and GIS specialists use spatial analysis tools to map coastal resources and use patterns. Lawyers need expertise in international maritime law (e.g., UNCLOS), national fisheries codes, and environmental regulations.

2. **Advanced Skills:** The ability to synthesize complex scientific, economic, and social information into clear and concise policy recommendations is the hallmark of this sector. Strong writing, communication, and stakeholder consultation skills are essential for navigating the complex process of policy development.
4. **Educational and Professional Development Pathways:** An advanced university degree (Master's or PhD) is typically the minimum requirement. Relevant fields of study include Marine Policy, Fisheries Economics, Environmental Law, Oceanography, Marine Biology, and Geography. Key institutions for research and training include the **Institut Universitaire de Pêche et d'Aquaculture (IUPA)** <sup>41</sup>, the **Centre de Recherches Océanographiques de Dakar Thiaroye (CRODT)** <sup>104</sup>, and the economics and law faculties of universities like **Université Cheikh Anta Diop (UCAD)**.
5. **Compensation and Market Intelligence:** Compensation is based on public sector salary scales or the rates set by international organizations for permanent staff and consultants. An expired listing for an "Expert en Aménagement et Gestion des Pêcheries" required over 10 years of experience and a Bac+5 degree, indicating the high level of expertise demanded for senior advisory roles.<sup>102</sup>

### 8.3 Key Institutions and Networks

1. **Government:** The **Ministry of Fisheries, Maritime, and Port Infrastructures (MPEMIP)** and its various directorates are the primary employers of policy analysts and planners.<sup>15</sup>
2. **Research Institutions:** The **CRODT** is the leading national institution for oceanographic and fisheries research, providing the scientific data that underpins management decisions.<sup>104</sup> Universities, particularly **UCAD**, are also key centers of research and expertise.<sup>104</sup>
3. **International and Regional Bodies:** Organizations like the **Food and**

**Agriculture Organization of the United Nations (FAO)**, the **World Bank**, and the **Sub-Regional Fisheries Commission (CSRP)** are heavily involved in funding research, providing technical assistance, and shaping policy dialogue in the region.<sup>102</sup>

The effective governance of the Blue Economy is entirely dependent on the quality of the science and policy that supports it. As Senegal develops more sophisticated management regimes, such as individual transferable quotas (ITQs) or ecosystem-based management, the demand for professionals with advanced analytical skills will only increase. A potential challenge is ensuring that there is a sufficient national pool of these highly specialized experts. Strengthening postgraduate programs in fields like fisheries economics, marine policy, and maritime law, and fostering stronger links between research institutions like CRODT and the policy-making arms of government, will be essential to building the indigenous capacity needed to design, implement, and adapt the complex governance frameworks required for a modern and sustainable Blue Economy.

## **Section 9: Emerging Digital and Technical Roles**

The global push for digitalization is profoundly impacting the Blue Economy, creating a new frontier of employment opportunities that leverage technology to improve sustainability, efficiency, and transparency. In Senegal, this trend is supported by national strategies like "Sénégal Numérique 2025," which identifies the fishing sector as a priority for digital transformation<sup>106</sup>, and the "Projet d'Accélération de l'Economie Numérique au Sénégal (PAENS)".<sup>107</sup> These emerging roles are at the intersection of marine science, data science, and information technology, and they represent a significant opportunity for Senegal to build a high-skill, knowledge-based component within its Blue Economy workforce.

### **9.2 Occupational Mapping**

These roles are often highly specialized and are emerging in both the public and private sectors, driven by innovation and the need for better data-driven

management.

1. **Position Identification:** This new category of jobs includes *Analyste en Télédétection* (Remote Sensing Analyst) for marine monitoring, *Data Scientist* (for fishery analytics and predictive modeling), *Spécialiste Blockchain pour la Traçabilité* (Blockchain Specialist for seafood traceability), *Gestionnaire de Plateforme Numérique* (Digital Platform Manager) for aquaculture marketplaces or fisher information systems, and *Consultant en Intelligence Artificielle (IA)* for marine resource management.
2. **Employment Structure and Engagement Models:** These roles are appearing as formal positions within tech-focused startups, specialized consultancy firms, research institutions, and increasingly, within government agencies and large private companies seeking to modernize their operations. Remote work and freelance/consultancy arrangements are particularly common, allowing Senegalese experts to serve both local and international clients.<sup>108</sup> For instance, job boards show listings for remote data scientist contractors and blockchain operations managers based in Dakar but serving global or regional markets.<sup>110</sup>
3. **Technical and Professional Competency Requirements:**
  - **Technical Skills:** A high level of digital and analytical proficiency is the defining characteristic. *Data Scientists* require expertise in programming languages (e.g., Python, R), statistical modeling, machine learning, and data visualization tools (e.g., Power BI).<sup>112</sup>  
*Remote Sensing and GIS Specialists* need skills in processing satellite and drone imagery and using software like ArcGIS or QGIS.<sup>114</sup>  
*Blockchain Specialists* need an understanding of distributed ledger technology and smart contracts.
  - **Advanced Skills:** The ability to apply these technical skills to specific marine challenges is key. This requires a multidisciplinary mindset, combining data science with knowledge of oceanography, fisheries biology, or logistics. Strong problem-solving and communication skills are needed to translate complex data into actionable insights for non-technical stakeholders.
4. **Educational and Professional Development Pathways:** A Bachelor's or Master's degree in Computer Science, Data Science, Statistics, Geomatics, or a related engineering field is the typical entry point.<sup>112</sup> However, a secondary specialization or project experience in a marine-related field is a significant advantage. Online courses and certifications in specific technologies (e.g., machine learning, specific GIS software) are common pathways for continuous professional development. Incubators like

**Teranga Tech Incub'** in Saint-Louis are actively supporting startups in the Blue Economy, fostering innovation in areas like sensor technology (Aguila Technologies), geospatial data (Geomatica), and aquaculture platforms (Aywajeune), creating a breeding ground for these new roles.<sup>37</sup>

5. **Compensation and Market Intelligence:** These are high-skill roles that command competitive salaries. A Dakar-based job ad for a *Data Scientist / Data Analyst* with 5+ years of experience listed a salary range of 600,000 - 750,000 FCFA per month.<sup>112</sup> An international remote role for a *Blockchain Operations Manager* based in Dakar advertised a salary range of \$72k - \$92k per year, highlighting the potential for Senegalese talent to tap into the global digital economy.<sup>111</sup>

### 9.3 Key Institutions and Networks

- **Government:** Agencies like the **Agence de l'Informatique de l'Etat (ADIE)** are involved in the broader national digitalization strategy.<sup>106</sup> Sector-specific ministries are beginning to integrate these roles.
- **Private Sector and Startups:** The most dynamic activity is in the private sector, with tech hubs and incubators like **Teranga Tech Incub'** playing a crucial role in nurturing new businesses that are creating these jobs.<sup>37</sup>
- **Research and Academia:** Universities with strong computer science and engineering programs are the primary source of talent. Research projects that combine marine science with data analysis also serve as training grounds.

The growth of these emerging digital roles is critical for the modernization and future competitiveness of Senegal's Blue Economy. The ability to collect, analyze, and act upon vast amounts of data—from satellite imagery of coastal erosion to real-time fish catch data from an app—is what will enable truly adaptive and sustainable management. However, this creates a demand for a new type of professional who is fluent in both the language of the ocean and the language of code. The current educational system may not be structured to produce these multidisciplinary experts at scale. To seize this opportunity, Senegal must foster greater collaboration between its marine science institutes (like IUPA) and its computer science and engineering faculties. Supporting tech incubators and creating incentives for "blue tech" startups will be essential for building a vibrant ecosystem where these innovative, high-value



jobs can flourish.

## Section 10: Cross-Cutting Support Functions

Beyond the specialized roles within each sub-sector, the successful implementation of Senegal's Blue Economy agenda relies on a range of cross-cutting professional support functions. These roles provide the essential managerial, financial, and social expertise needed to plan, execute, and sustain complex projects and initiatives. They are the "connective tissue" that enables collaboration between government, private sector, communities, and development partners, ensuring that Blue Economy projects are well-managed, adequately funded, socially inclusive, and safe.

### 10.2 Occupational Mapping

These support roles are found across all types of organizations involved in the Blue Economy, from government agencies to private companies and NGOs.

- **Position Identification:** Key cross-cutting roles include *Chef de Projet / Gestionnaire de Projet* (Project Manager) for Blue Economy initiatives, *Spécialiste en Rédaction de Subventions* (Grant Writer) for securing funding for marine projects, *Agent d'Engagement Communautaire* (Community Engagement Officer), *Facilitateur de Formation* (Training Facilitator) for fishing communities or aquaculture workers, and *Instructeur en Santé et Sécurité* (Health and Safety Instructor) for maritime work.
- **Employment Structure and Engagement Models:** These are typically formal, salaried positions, often on a full-time or fixed-term contract basis, tied to specific projects or organizational mandates. Project management and grant writing roles are particularly prevalent in the NGO and development sectors.<sup>116</sup> Community engagement and training roles are central to projects working directly with local populations, such as those in conservation or artisanal fisheries development.<sup>59</sup>
- **Technical and Professional Competency Requirements:**
  - **Technical Skills:** *Project Managers* require proficiency in project

management methodologies (e.g., PMBOK, Agile), budgeting, and monitoring and evaluation (M&E).<sup>117</sup>

*Grant Writers* need excellent research, writing, and proposal development skills. *Training Facilitators* must have expertise in adult learning principles and curriculum development. *Health and Safety Instructors* need certifications in occupational health and safety (OHS) and specific knowledge of maritime safety standards.

- **Soft Skills:** Strong organizational, communication, and interpersonal skills are essential for all these roles. The ability to work effectively in multidisciplinary and multicultural teams is critical. Community Engagement Officers, in particular, must have exceptional facilitation, conflict resolution, and relationship-building skills, along with fluency in relevant local languages.
- **Educational and Professional Development Pathways:** A Bachelor's or Master's degree in a relevant field such as Business Administration, International Development, Project Management, or Social Sciences is a common requirement. Professional certifications, such as the Project Management Professional (PMP), are highly valued. Experience is paramount, with many positions requiring a proven track record in managing complex projects or securing significant grant funding.
- **Compensation and Market Intelligence:** Compensation is based on the salary scales of the employing organization (government, NGO, or private company). Senior project management roles, especially within internationally funded projects, offer competitive salaries commensurate with the high level of responsibility and expertise required.

### 10.3 Key Institutions and Networks

- **All Sectors:** These roles are not confined to one sector but are present across the institutional landscape. Government ministries (e.g., MPEMIP), development partners (e.g., World Bank, AfDB), NGOs (e.g., PRCM, IUCN), and private firms all employ project managers, financial officers, and community engagement specialists.
- **Training and Certification Bodies:** Universities offering degrees in business and public administration, as well as professional associations that provide certifications like the PMP, are key sources of qualified personnel.

The effectiveness of Senegal's entire Blue Economy strategy depends on the quality of these cross-cutting professionals. Ambitious projects for port expansion, aquaculture development, or marine conservation can falter without skilled project managers to guide them, sufficient funding secured by expert grant writers, and the social license to operate earned by effective community engagement officers. As the scale and complexity of Blue Economy initiatives grow, so too will the demand for these enabling support functions. Recognizing these roles as a critical component of the workforce and ensuring that training programs in project management, public administration, and community development are robust and aligned with the needs of the sector will be vital for turning strategic plans into successful, on-the-ground realities.

## Section 11: Geographic Synthesis: Regional Hubs and Opportunities

The employment landscape of Senegal's Blue Economy is not uniform; it is geographically concentrated in key coastal centers, offshore zones, and riverine ecosystems, each with a distinct economic character and set of opportunities. Furthermore, the rise of digital services is creating new possibilities for remote work that transcend traditional geographic boundaries.

### Primary Coastal Centers:

- **Dakar:** As the national capital and primary economic engine, Dakar is the undisputed epicenter of the Blue Economy. It serves as the central hub for **policy, finance, and corporate management**, hosting the headquarters of key ministries (MPEMIP), agencies (PAD, PETROSEN), major corporations (DP World, AGL, international shipping lines), and leading conservation NGOs.<sup>13</sup> The **Port of Dakar** is the heart of the maritime transport and logistics sector, generating thousands of jobs in operations, freight forwarding, and customs brokerage.<sup>22</sup> Dakar is also a major center for **industrial fish processing** and export, as well as a hub for the **marine services and support** sector, with shipyards and technical workshops catering to the industrial fleet.<sup>100</sup> The city's universities (UCAD) and training centers (Centre TRAINMAR, ENFM) make it the primary source of high-skilled labor for the entire Blue Economy.<sup>41</sup>
- **Saint-Louis:** Located in the north at the mouth of the Senegal River, Saint-Louis

has a dual Blue Economy identity. It is a major center for **artisanal fishing**, with a vibrant fishing community and associated processing activities.<sup>119</sup> Its unique colonial architecture and proximity to the Djoudj National Bird Sanctuary also make it a key destination for

**cultural and eco-tourism**.<sup>84</sup> The development of the GTA gas field offshore of Saint-Louis and Mauritania will likely lead to the growth of an onshore support base for the

**offshore energy** sector in the region.<sup>26</sup> The presence of Université Gaston Berger and incubators like Teranga Tech Incub' is fostering a nascent **digital blue economy** scene focused on aquaculture and resource management.<sup>37</sup>

- **Ziguinchor and the Casamance Region:** The southern region of Casamance, with Ziguinchor as its capital, is defined by its rich riverine and estuarine ecosystems. Its Blue Economy is centered on **artisanal fishing, oyster and shrimp harvesting, and mangrove ecosystem services**. It is a focal point for **marine and coastal conservation** projects, particularly those focused on mangrove restoration and community-based resource management.<sup>56</sup>

**Ecotourism** is a significant and growing sector, offering immersive nature-based experiences.<sup>84</sup> The development of aquaculture, particularly oyster farming, presents a major growth opportunity for the region.

- **The Petite Côte (M'bour, Joal-Fadiouth, Palmarin):** This coastal stretch south of Dakar is the heart of Senegal's **coastal tourism** industry, with numerous hotels and resorts in Saly and Somone.<sup>84</sup> It is also home to some of the country's largest and most active **artisanal fishing** ports, such as M'bour and Joal-Fadiouth, and major fish processing sites.<sup>120</sup> The Saloum Delta, a UNESCO Biosphere Reserve, is a hotspot for **ecotourism** and community-based conservation initiatives, particularly in areas like Palmarin and the islands.<sup>68</sup>

#### Offshore and Marine Zones:

These zones are accessible only through coastal bases and require specialized maritime skills. Employment here is focused on industrial and deep-sea fishing, offshore oil and gas operations on platforms and support vessels<sup>96</sup>, and

**marine research expeditions**. All roles in this environment are formal, highly regulated, and demand stringent safety certifications.

#### Riverine and Estuarine Areas:

Beyond the main coastal hubs, riverine systems like the Saloum Delta and the Senegal River Delta are crucial for inland fisheries, aquaculture development (both fish and shellfish), and ecosystem management. These areas support significant community-based employment that is directly linked to the health of the aquatic environment and connects to the broader Blue Economy value chains through processing and trade.<sup>93</sup>

#### Remote and Digital Service Provision:

A new and important geography of work is emerging that is not tied to a physical location. Senegalese professionals with high-end digital skills are increasingly able to participate in the Blue Economy through remote work. This includes roles like remote marine data analysis for international clients, virtual consultancy in marine policy or environmental management, and the development of digital platforms for traceability or e-commerce.<sup>108</sup> This allows local talent to contribute to the global Blue Economy while remaining in Senegal, representing a significant opportunity for high-value job creation that is resilient to geographic constraints.

## **Part III: National Workforce Synthesis and Strategic Outlook**

### **Section 12: Analysis of Skills Demand, Competency Gaps, and Future Needs**

A comprehensive analysis across the nine sectors of Senegal's Blue Economy reveals a complex and rapidly evolving workforce landscape. The demand for labor is strong and poised for significant growth, driven by ambitious national policies and major infrastructure projects. However, this growth is not uniform. It is creating a clear and urgent demand for specific sets of technical, digital, and managerial competencies. A critical examination of the current workforce's capabilities against these emerging needs reveals several structural skills gaps that must be addressed to ensure the sustainable and inclusive development of the sector.

#### **12.1 Synthesis of High-Demand Competencies**

Across the diverse sub-sectors, a consistent pattern of high-demand competencies emerges:

- **Technical and Vocational Skills:** There is a foundational need for hands-on technical expertise. This includes **vessel and engine maintenance** to support the fishing and transport fleets <sup>98</sup>, modern **aquaculture techniques** (water management, biosecurity) to drive the SNDAQ <sup>12</sup>, **port logistics and operations management** to handle increasing trade volumes <sup>73</sup>, and **ecological monitoring protocols** for conservation efforts.<sup>59</sup> These roles form the operational backbone of the entire Blue Economy.
- **Digital Skills and Data Literacy:** Digital capabilities are no longer a niche requirement but a cross-cutting necessity. The spectrum of demand ranges from basic digital literacy, such as the use of mobile applications for weather and market information by artisanal fishers <sup>106</sup>, to highly advanced skills. The latter includes **Geographic Information Systems (GIS) and remote sensing** for coastal management and conservation <sup>115</sup>, **data science and analytics** for fisheries stock assessment and predictive modeling <sup>112</sup>, and **digital platform management** for new aquaculture marketplaces or tourism services.<sup>37</sup> The government's explicit push for digitalization in ports and other sectors underscores this trend.<sup>25</sup>
- **Managerial and Soft Skills:** As the scale of Blue Economy initiatives increases, so does the demand for strong managerial and soft skills. **Project management**, including planning, budgeting, and monitoring and evaluation, is a frequently cited requirement, especially in the conservation and development sectors.<sup>116</sup> **Community engagement and facilitation** skills are critical for ensuring the social sustainability of projects that interact with local populations.<sup>67</sup> Finally, **multilingual communication** (French, English, and local languages) is essential for operating in an environment with diverse local stakeholders and significant international partnership.<sup>116</sup>

## 12.2 Identifying Critical Skills Gaps

When the demand for these competencies is compared with the current structure of the workforce, several critical gaps become apparent. These are not merely shortages of individuals but structural mismatches between the skills the economy

needs and the skills that are readily available.

- **The "Meso-Level" Management and Technical Gap:** The most significant challenge is a shortage of an experienced, mid-level cadre of technicians and managers. The analysis reveals a workforce structure that is heavily weighted towards a large base of informal, lower-skilled labor (especially in artisanal fishing)<sup>32</sup> and a smaller cohort of high-level, university-educated strategists and researchers. What is missing is the crucial link between these two poles: the experienced **fish farm managers, senior conservation field coordinators, port operations supervisors, and master technicians** who can translate high-level policy into effective, on-the-ground action. Job advertisements and project documents consistently call for these "Coordinator," "Manager," and "Supervisor" profiles, indicating that demand outstrips supply.<sup>57</sup> This "hollowed-out middle" creates a critical bottleneck, where ambitious plans risk faltering due to a lack of qualified operational leadership.
- **The Digital Divide:** There is a stark contrast between the high-level digital ambitions articulated in national strategies<sup>121</sup> and the current digital skill set of the traditional workforce. While there is a growing pool of young, digitally-native talent in urban centers, a significant portion of the existing Blue Economy workforce, particularly in rural and coastal communities, lacks the foundational digital literacy needed to engage with new technologies, from traceability apps to digital payment systems.
- **The Formalization and Entrepreneurial Gap:** The Blue Economy is characterized by a vast informal sector, which accounts for up to 97% of all economic units in Senegal.<sup>32</sup> While rich in traditional knowledge and practical skills, this workforce often lacks the formal business management, financial literacy, and administrative skills required to formalize their operations, access credit, scale their enterprises, and engage with formal value chains. This gap is a major barrier to unlocking the full economic potential of artisanal fishing, processing, and community-based tourism.

The central challenge for Senegal's Blue Economy workforce development is therefore not a simple lack of labor, but this structural imbalance. Addressing the scarcity of mid-level technical and managerial talent is the most pressing priority. Without this crucial layer of the workforce, the bridge between policy and practice remains incomplete, jeopardizing the return on massive investments in infrastructure and strategic planning. This points directly to the need for a renewed focus on high-



quality Technical and Vocational Education and Training (TVET), the creation of clear career pathways that allow for advancement from entry-level to supervisory roles, and targeted upskilling programs for the existing workforce.

**Table 12.1: Synthesis of High-Demand Competencies and Identified Skills Gaps**

Competency Area	Specific Skills Required	Current Supply (Estimate)	Identified Gap (High/Medium/Low)	Key Sectors of Demand
<b>Aquaculture Management</b>	Biosecurity protocols, feed/water quality mgt., business planning, staff supervision.	Low	<b>High</b>	Fisheries & Aquaculture
<b>Port Operations &amp; Logistics</b>	Supply chain mgt., Terminal Operating Systems, customs procedures, ISPS Code.	Medium	<b>High</b>	Maritime Transport & Port Operations
<b>Marine Technical Services</b>	Diesel engine repair, marine electronics, welding, hydraulics.	Medium	<b>Medium</b>	Marine Services, Fisheries
<b>Data Science &amp; Analytics</b>	Python/R, machine learning, statistical modeling, data visualization.	Low	<b>High</b>	Emerging Digital, Research, Fisheries
<b>GIS &amp; Remote Sensing</b>	Satellite/drone image analysis, spatial mapping (ArcGIS/QGIS),	Low	<b>High</b>	Conservation, Research, Coastal Mgt.

	habitat modeling.			
<b>Project Management</b>	Budgeting, M&E, grant writing, stakeholder coordination.	Medium	<b>High</b>	Conservation, Cross-Cutting, Dev. Projects
<b>Community Engagement</b>	Facilitation, conflict resolution, participatory planning, local language fluency.	Medium	<b>Medium</b>	Conservation, Tourism, Fisheries

## Section 13: The Educational and Vocational Training Ecosystem

The capacity of Senegal to meet the skills demands of its expanding Blue Economy is directly linked to the quality, relevance, and accessibility of its educational and vocational training institutions. The current ecosystem is composed of universities providing high-level degrees, specialized national schools for maritime and fisheries professions, and a growing number of private and international training initiatives. A comprehensive mapping of this ecosystem is essential for identifying strengths, weaknesses, and opportunities for strategic investment in human capital.

### 13.1 Directory of Key Institutions

A number of key institutions form the bedrock of formal training for the Blue Economy workforce:

1. **Institut Universitaire de Pêche et d'Aquaculture (IUPA):** Housed at the prestigious Université Cheikh Anta Diop (UCAD) in Dakar, IUPA is a leading institution for higher education and research in the sector. It was established in 2003 to train senior executives and offers degrees in fisheries, aquaculture, seafood processing, and the management of aquatic ecosystems.<sup>41</sup> IUPA is also

involved in international partnerships, such as a collaboration with Canada to equip women and youth with skills for the Blue Economy.<sup>122</sup>

2. **Centre National de Formation des Techniciens de la Pêche et de l'Aquaculture (CNFTPA):** Located in Dakar, the CNFTPA is the primary national institution for vocational training of mid-level technicians. It offers multi-year programs for *agents techniques* and *techniciens supérieurs* in fisheries and, more recently, aquaculture.<sup>42</sup> Admission to its programs is typically via competitive examination for candidates holding the BFEM or equivalent.<sup>43</sup> The CNFTPA also partners with international bodies like Université Senghor to offer specialized professional development courses in Blue Economy management.<sup>116</sup>
3. **École Nationale de Formation Maritime (ENFM):** Placed under the authority of the ministry in charge of the Merchant Marine, the ENFM is responsible for training seafarers for the fishing, commercial, and leisure fleets.<sup>81</sup> It provides training and certification for a range of roles, from deck and engine room ratings to officers (captains, engineers), in accordance with national regulations and international conventions like STCW. Admission is based on competitive exams, with different entry requirements (e.g., BFEM, Baccalauréat) for different training cycles.<sup>81</sup>
4. **Centre TRAINMAR de Dakar:** This center is a key provider of training in the logistics and transport sector. It offers professional licenses and master's degrees in fields such as Logistics & Transport, Supply Chain Engineering, and Port and Maritime Management.<sup>80</sup> Its programs are crucial for developing the managerial talent needed to operate Senegal's expanding port system.
5. **Other University Programs:** Other universities, such as the **Université du Sine Saloum El Hadji Ibrahima Niass (USSEIN)**, also offer relevant programs, including degrees in the administration of maritime affairs.<sup>21</sup>

### 13.2 Analysis of Curriculum Alignment and Gaps

While Senegal possesses a solid institutional foundation for Blue Economy training, a critical analysis suggests a potential misalignment between current curricula and the rapidly evolving demands of the market. The strategic pivot to aquaculture, the digitalization of port logistics, and the rise of the knowledge-based digital blue economy require skills that may not be fully integrated into existing programs. For example, while the CNFTPA offers aquaculture training, the SNDAQ's goal of creating

50,000 jobs will require a massive scaling of these programs and a curriculum that strongly emphasizes not just the technical aspects of fish farming, but also the business management, financial literacy, and marketing skills needed to run a profitable enterprise. Similarly, as ports become increasingly digitized, logistics programs at centers like TRAINMAR must evolve beyond traditional transport management to include modules on data analytics, digital platform management, and supply chain optimization. There is a clear need for a systematic review of curricula across all these institutions to ensure they are producing graduates with the forward-looking, market-relevant skills identified in Section 12.

**13.3 Alternative Pathways and Professional Networks**

Formal education is not the only pathway to a career in the Blue Economy.

- 15. **Informal Learning and Apprenticeships:** For generations, skills in the artisanal fishing sector have been transmitted through informal apprenticeships, with young people learning directly from experienced elders on pirogues and at processing sites. This remains the dominant mode of skills acquisition for a large part of the workforce. Recognizing and potentially certifying the skills gained through these informal pathways could be a way to bridge them to formal employment opportunities.
- 16. **Professional Associations and Cooperatives:** Organizations like fisheries cooperatives, the National Federation of Fishing GIEs (FENAGIE), and the National Union of Fish Traders (UNAMS) serve as important networks for knowledge sharing, peer-to-peer learning, and the dissemination of information about new techniques or market opportunities.<sup>35</sup> Women's processing associations like ASEFETRAP play a similar role.<sup>36</sup>
- 17. **Digital and Social Networks:** Modern professional networks are also crucial. LinkedIn is used for recruiting specialized professional positions, while social media platforms like Facebook and WhatsApp host numerous groups for coastal professionals, which serve as informal job boards and forums for exchanging information.<sup>78</sup> National job portals like Emploisenegal.com, Senjob.com, and EmploiDakar.com are key channels for formal job advertisements across all sectors.<sup>33</sup>

**Table 13.1: Directory of Key Blue Economy Training and Certification**

## Institutions in Senegal

Institution Name	Location	Key Specialization	Programs Offered	Admission Level	Key Certifications Provided
<b>Institut Universitaire de Pêche et d'Aquaculture (IUPA)</b>	Dakar (UCAD)	Higher Education & Research	Bachelor, Master, PhD in Fisheries, Aquaculture, Ecosystem Mgt.	Baccalauréat	University Degrees
<b>Centre National de Formation des Techniciens de la Pêche et de l'Aquaculture (CNFTPA)</b>	Dakar	Vocational (Technician)	Diplomas for <i>Agent Technique &amp; Technicien Supérieur</i>	BFEM / Bac	State Technical Diplomas
<b>École Nationale de Formation Maritime (ENFM)</b>	Dakar	Seafarer Training	Certificates & Diplomas for Ratings and Officers (Deck & Engine)	BFEM / Bac	National Maritime Brevets, STCW compliance
<b>Centre TRAINMAR de Dakar</b>	Dakar	Transport & Logistics	License & Master in Logistics, Supply Chain, Port Management	Bac / License	Professional Degrees
<b>Université du Sine Saloum El Hadji Ibrahima Niass</b>	Kaolack/Fatick	Agriculture & Related Trades	Degrees in Maritime Affairs Administration, Aquaculture	Baccalauréat	University Degrees

(USSEIN)					
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## Section 14: Strategic Recommendations for Workforce Development and Policy Enhancement

Based on the comprehensive analysis of Senegal's Blue Economy employment landscape, a series of strategic recommendations are proposed to address identified skills gaps, strengthen the training ecosystem, and ensure that the sector's growth translates into sustainable and inclusive employment for the Senegalese people. These recommendations are targeted at key stakeholder groups: government, educational institutions, the private sector, and development partners.

### 14.1 For Government and Policymakers

18. **Establish a National "Blue Skills Council":** To overcome the coordination challenges between different ministries and actors, the government should establish a high-level, multi-stakeholder "Conseil National des Compétences Bleues." This body would bring together representatives from the MPEMIP, the Ministry of Higher Education, the Ministry of Vocational Training, key agencies (PAD, ANA, PETROSEN), private sector federations, and training institutions. Its mandate would be to conduct ongoing labor market analysis, define national occupational standards for Blue Economy jobs, and guide public investment in education and training to ensure alignment with industry needs.
19. **Develop a National Blue Economy Certification Framework:** To improve labor mobility and recognize skills acquired through both formal and informal pathways, the government should develop a national framework of professional certifications for the Blue Economy. This would standardize qualifications for roles like *Technicien Aquacole*, *Guide Écotouristique*, and *Mécanicien de Marine*, making it easier for employers to identify qualified candidates and for workers to have their skills formally recognized. This framework should be aligned with international standards where applicable (e.g., STCW for seafarers, HACCP for food processing).
20. **Incentivize Formalization of the Artisanal Sector:** Given the vast size of the

informal economy in fisheries and processing <sup>32</sup>, the government should design and implement a targeted strategy to encourage formalization. This could include simplified business registration processes for GIEs and cooperatives, tax incentives for newly formalized small enterprises, and linking access to credit or subsidies to formal status. This would not only improve working conditions but also broaden the tax base and improve data collection for better management.

## 14.2 For Educational and Training Institutions

21. **Modernize and Align Curricula with Market Demand:** Institutions like IUPA, CNFTPA, and ENFM must undertake a systematic review of their curricula to address the identified skills gaps. This means integrating modules on **digital skills** (data analysis, GIS, digital platforms), **business management and entrepreneurship** (especially in aquaculture and tourism programs), and the principles of **sustainability and environmental management** across all relevant courses. This requires moving beyond a purely technical focus to produce graduates with the holistic skill set the modern Blue Economy demands.
22. **Expand Work-Integrated Learning Programs:** To bridge the gap between academic theory and practical industry needs, training institutions should significantly expand and formalize their use of work-integrated learning. This includes developing more structured **internship and apprenticeship programs** in close partnership with port operators, commercial aquaculture farms, conservation NGOs, and tourism companies. Co-designing these programs with industry ensures that students gain relevant, hands-on experience and that employers have access to a pipeline of work-ready talent.

## 14.3 For Private Sector and Investors

23. **Invest in In-House Training and Upskilling:** To address the critical shortage of mid-level managers and senior technicians, private sector companies should invest in structured in-house training and continuous professional development programs. This involves creating clear career pathways that allow promising entry-level employees to be trained and promoted into supervisory roles, thereby



building the "meso-level" workforce from within.

24. **Co-Design Curricula with Educational Institutions:** The private sector should move from being a passive consumer of graduates to an active partner in their creation. This involves collaborating directly with universities and vocational schools to co-design curricula, provide guest lecturers from industry, donate modern equipment for training, and offer feedback on the skills of recent graduates. This partnership is the most effective way to close the relevance gap and ensure the education system produces the talent the industry needs.

#### 14.4 For Development Partners and NGOs

25. **Shift Focus to Long-Term Capacity Building:** While project-based employment is important, international partners and NGOs should strategically shift a portion of their funding and effort from short-term project implementation towards the long-term institutional strengthening of local partners. This includes providing core funding to Senegalese conservation organizations, supporting the development of sustainable financing mechanisms (e.g., conservation trust funds), and funding curriculum development and faculty training at local educational institutions.
26. **Support Community-Based Enterprise Development:** To foster inclusive growth, development partners should focus on building entrepreneurial and business management skills at the community level. This means supporting training programs for fishing cooperatives, women's processing groups, and community-based ecotourism ventures. Empowering these local enterprises to become more professional and profitable is a direct path to improving livelihoods and ensuring that the benefits of the Blue Economy are widely distributed.

### Section 15: Conclusion: Charting the Course for a Skilled and Prosperous Blue Workforce

This nationwide examination of employment opportunities within Senegal's Blue Economy reveals a sector of immense strategic importance and profound potential. Endowed with a vast coastline, rich marine resources, and a strategic position as a

regional maritime hub, Senegal is poised to leverage its blue assets as a powerful engine for economic diversification, inclusive growth, and enhanced food and energy sovereignty. The government's clear policy direction, articulated in high-level strategies and amplified by significant international partnerships, has created unprecedented momentum for the development of fisheries, aquaculture, maritime transport, tourism, and energy.

The analysis confirms that this development will generate a substantial number of jobs across a wide spectrum of occupations, from the artisanal fisher and community ecotourism guide to the subsea engineer and marine data scientist. However, the successful translation of this potential into tangible, sustainable employment hinges on a critical factor: strategic workforce planning and development. The key challenge is not a lack of labor, but a growing misalignment between the skills of the current workforce and the competencies demanded by a modern, sustainable, and digitized Blue Economy.

The most pressing needs are twofold. First is the necessity to bridge the "meso-level" gap by cultivating a strong cadre of mid-level technicians and managers who can execute on-the-ground operations effectively. Second is the imperative to infuse digital literacy and data-driven decision-making capabilities across all sectors, from the pirogue to the port. Meeting these challenges requires moving beyond traditional education models toward a more agile and responsive system that is deeply integrated with the needs of industry.

The path forward demands a coordinated, multi-stakeholder approach. Government must provide the strategic vision and regulatory framework, creating a "Blue Skills Council" to guide national efforts. Educational and vocational institutions must modernize their curricula and forge deep partnerships with industry to ensure relevance and practical experience. The private sector must invest in upskilling its own workforce and become an active co-creator of talent. Finally, development partners can play a crucial role by supporting the long-term capacity building of local institutions and community enterprises.

By embracing this collaborative agenda and making a deliberate, sustained investment in its human capital, Senegal can chart a course toward a future where its Blue Economy is not only a source of economic prosperity but also a model of sustainable development and a provider of dignified, high-quality employment for its people for generations to come.

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# Employment in Senegal's Bronze Economy: A Comprehensive Mapping for National Policy and Workforce Development

## Executive Summary

This report provides a comprehensive analysis of the employment landscape within Senegal's "Bronze Economy," encompassing the agriculture, forestry, and mining sectors. It is designed to furnish structured datasets and analytical insights to support national workforce development, sectoral planning, and evidence-based policy formulation. The analysis reveals an economy of profound dualities: a modernizing, export-oriented segment coexisting with a vast, informal, and vulnerable workforce.

The **agricultural sector**, including forestry, remains the bedrock of rural livelihoods, directly involving 44.5% of Senegalese households and employing an estimated 21.6% of the total workforce.<sup>1</sup> However, its contribution to GDP (around 17%) is disproportionately low, reflecting a deep-seated productivity challenge.<sup>3</sup> Employment is overwhelmingly informal, dominated by small family farms highly susceptible to climate change, particularly erratic rainfall and land degradation.<sup>4</sup> A critical, yet often invisible, component of this workforce is the young, male, migrant seasonal labor force that powers the high-value horticulture and irrigated rice sub-sectors.<sup>7</sup> Gender disparity is a defining feature, with women constituting a majority of the agricultural labor force but holding secure rights to less than 8% of agricultural land, a fundamental barrier to their economic empowerment.<sup>8</sup>

The **mining sector** presents a starkly different picture. The formal, industrial sub-sector is a primary driver of exports (32% of total) and a significant contributor to state revenues, but provides minimal direct formal employment (0.16% of total).<sup>9</sup> In stark contrast, the artisanal and small-scale mining (ASM) sub-sector, particularly for

gold, acts as a crucial economic buffer, employing an estimated 32,474 people, many of whom are youth and migrants operating in precarious and informal conditions.<sup>10</sup> Efforts to increase the sector's employment impact through local content policies show promise but are hampered by the limited technical and financial capacity of local enterprises to meet industry standards.<sup>12</sup>

The **forestry sector** is another area of duality. Formal employment in conservation and administration is minimal, estimated at around 14,000 people in 2005.<sup>13</sup> However, informal activities, particularly the wood-energy value chain (charcoal and fuelwood) and the collection of non-timber forest products (NTFPs), provide essential livelihoods for hundreds of thousands, especially rural women and the poor.<sup>14</sup> These activities, while economically vital, are major drivers of deforestation, posing a long-term threat to the resource base itself.<sup>3</sup>

This report advances several key conclusions. First, Senegal's national development strategy, the *Plan Sénégal Émergent* (PSE), correctly identifies the Bronze Economy as a central pillar for growth, but a significant implementation gap persists between policy ambitions for modernization and the on-the-ground reality of informality and low productivity. Second, climate vulnerability is fundamentally an employment vulnerability; therefore, investments in climate adaptation, particularly in water management, are Senegal's most critical labor market stabilization policies. Third, youth and gender inclusion cannot be addressed solely through siloed projects; they require systemic reforms, with secure land tenure for women being the single most impactful lever for unlocking productivity and inclusive growth.

Key recommendations include: (1) a systemic reform of Technical and Vocational Education and Training (TVET) to align skills with the needs of a modernizing Bronze Economy; (2) the prioritization of investment in water management and irrigation as a core employment strategy; (3) the enactment of comprehensive land tenure reform centered on securing women's rights; (4) strengthening local content frameworks with integrated support for finance and technical capacity building; and (5) integrating a "Just Transition" principle into all climate policies to support alternative livelihoods for those displaced by green economy initiatives.

## **Part I: The Strategic Context: Senegal's Bronze Economy in the Plan Sénégal Émergent (PSE)**

## **Chapter 1: The PSE Framework and the Primary Sectors**

The strategic direction for Senegal's economic and social development, including the employment landscape of its primary sectors, is fundamentally shaped by the *Plan Sénégal Émergent* (PSE). Launched in 2014, the PSE serves as the nation's singular reference framework, articulating a vision to achieve economic emergence by 2035.<sup>17</sup> Understanding this framework is essential to mapping the employment potential and policy priorities within the agriculture, forestry, and mining sectors.

### **1.1 The Vision of an Emerging Senegal**

The PSE is structured around three core strategic pillars: (i) structural transformation of the economy and growth; (ii) human capital, social protection, and sustainable development; and (iii) good governance, peace, and security.<sup>17</sup> The first pillar, which is most directly relevant to the Bronze Economy, explicitly identifies the development of agriculture, fisheries, the food processing industry, and the further development of extractive industries (mining and fertilizers) as the primary engines for this transformation.<sup>3</sup> The overarching goal is to stimulate robust economic growth, diversify the economic base, and create jobs to reduce unemployment and poverty.<sup>19</sup> This vision acknowledges that sectors like agriculture and mining are not merely sources of raw materials but are central to the country's ambition to become a regional hub.<sup>18</sup>

### **1.2 Operationalization through Priority Action Plans (PAPs)**

The long-term vision of the PSE is implemented through a series of five-year Priority Action Plans (PAP). These plans translate the strategic axes into concrete, fundable



projects, programs, and reforms.<sup>19</sup> The first phase, PAP I (2014-2018), focused on launching 27 flagship projects and 17 major reforms.<sup>17</sup> It was followed by PAP II (2019-2023), which was adjusted mid-term (becoming PAP 2A) to respond to the economic shocks of the COVID-19 pandemic.<sup>21</sup> The current guiding document is PAP 3, covering the period 2024-2028, which aims to consolidate the gains of the first decade while addressing persistent challenges, including the critical issue of youth and women's employment.<sup>19</sup> These PAPs provide the budgetary and operational framework through which national employment objectives are pursued.

### **1.3 Funding and Investment Priorities**

An analysis of the financing for these plans reveals the strategic importance placed on the primary sectors. During PAP I, the primary sector was allocated 20.5% of the total financing.<sup>20</sup> The "structural transformation of the economy and growth" axis, which heavily features the Bronze Economy, concentrated 66.3% of PAP I funding.<sup>20</sup> Specific flagship projects underscored this priority. For agriculture, PAP I outlined an investment of 396.6 billion FCFA for two key initiatives: the development of three to four major grain corridors and the establishment of 100-150 aggregation projects targeting high-value-added (HVA) filières and livestock.<sup>20</sup> The extractive sector was similarly prioritized, with flagship projects designed to accelerate the exploitation of gold, phosphates, and zircon.<sup>25</sup> These allocations demonstrate a clear policy choice to leverage the country's natural resource endowment as a foundation for economic growth and, by extension, job creation.

### **1.4 PAP 3 (2024-2028) and the Bronze Economy**

The most recent plan, PAP 3 (2024-2028), continues the trajectory set by the PSE, building on the economic growth achieved over the past decade, which averaged 5.3% annually from 2014-2023.<sup>19</sup> The plan explicitly recognizes that despite this growth, challenges such as high youth unemployment, gender inequality, and territorial disparities remain pressing national issues.<sup>19</sup> Agriculture and the extractive industries continue to be identified as key sectors for driving growth.<sup>19</sup> The strategic

alignment of international partners, such as the United Nations through its Cooperation Framework for 2024-2028, with PAP 3 reinforces this focus. The UN framework prioritizes accelerating the structural transformation of the economy and developing sustainable food systems as a means to create decent jobs and enhance resilience.<sup>27</sup> A key project integrated into PAP3 is the

*Projet de Gestion des Risques Agricoles pour une Agriculture Durable* (PGRAAD), highlighting an increasing focus on climate adaptation as a central component of agricultural development.<sup>28</sup>

## 1.5 Key Institutions and Governance

The implementation of the PSE's vision for the Bronze Economy is managed by a network of key governmental bodies. These include the **Ministry of Agriculture, Food Sovereignty, and Livestock**<sup>29</sup>, the

**Ministry of Mines and Geology**<sup>30</sup>, and the

**Ministry of Environment and Sustainable Development**, which oversees the **Direction des Eaux, Forêts, Chasses et de la Conservation des Sols (DEFCCS)**.<sup>32</sup>

Alongside these ministries are specialized agencies created to execute specific mandates, such as the

**Agence Nationale d'Insertion et de Développement Agricole (ANIDA)**, which focuses on creating agricultural enterprises to generate rural employment<sup>34</sup>, and the

**Programme des Domaines Agricoles Communautaires (PRODAC)**, which aims to establish large-scale agricultural hubs to attract youth.<sup>36</sup> The governance of these sectors is also shaped by adherence to international standards like the Extractive Industries Transparency Initiative (EITI), which promotes revenue transparency in mining and hydrocarbons.<sup>12</sup>

The policy documents articulate a clear and ambitious vision for a modernized, productive Bronze Economy. However, a persistent gap exists between this high-level strategy and the reality on the ground. Sectoral data consistently reveals high levels of informality, low productivity in smallholder agriculture, and significant challenges in translating extractive revenues into broad-based local employment.<sup>4</sup> This disconnect

suggests that while the "what" of the strategy is clear, the "how" remains a challenge. The success of PAP 3 will depend critically on its ability to bridge this chasm by designing programs that effectively reach the informal majority, align skills development with the actual needs of a modernizing economy, and create a business environment where small-scale actors can formalize and grow.

Furthermore, while the PSE often treats agriculture and mining as separate pillars, their interdependencies offer a latent engine for employment that remains underexploited.<sup>3</sup> Mining operations are significant consumers of goods and services—from food for canteens to logistics and construction materials—that could be sourced from local agricultural and service economies.<sup>12</sup> The PSE's plan to develop a "Regional Mining Hub" is a formal recognition of this potential.<sup>25</sup> Conversely, the transformation of agriculture, particularly agro-processing, is heavily dependent on reliable and affordable energy, a sector being developed partly through revenues from extractives.<sup>20</sup> A more integrated policy approach could create powerful synergies. For example, specific mechanisms within PAP 3 could be designed to foster these "Bronze-on-Bronze" linkages, such as mandating local agricultural sourcing quotas for mining camps or strategically using the Local Development Fund, which is financed by 0.5% of mining sales, to build agricultural infrastructure that serves both local communities and the procurement needs of nearby mining operations.<sup>39</sup>

## **Chapter 2: Macroeconomic and Labor Market Overview**

A comprehensive mapping of employment in Senegal's Bronze Economy requires an understanding of the broader macroeconomic and labor market context. The nation's demographic structure, the nature of its labor market, and the sectoral contributions to the economy define the parameters within which workforce development policies must operate.

### **2.1 Labor Force Structure and Demographics**

Senegal is characterized by a young and rapidly expanding population, a

demographic reality that presents both an opportunity and a significant challenge. Over 100,000 young people enter the labor market each year, creating immense pressure to generate new jobs.<sup>38</sup> In 2019, the overall employment-to-population ratio stood at 49.3%, a figure notably below the Sub-Saharan African average of 63.5%. This gap is particularly pronounced for women, whose employment-to-population ratio is more than twenty percentage points below the regional average, indicating significant underutilization of the female workforce.<sup>38</sup>

## 2.2 The Dominance of Informality

The Senegalese labor market is overwhelmingly characterized by informal employment. In 2019, over 90% of all workers were engaged in the informal economy.<sup>38</sup> This figure is even more acute for youth (ages 15-29), where informality reaches a staggering 95%.<sup>38</sup> The agricultural sector is almost entirely informal, with virtually all employment falling outside formal contracts and social protection systems.<sup>42</sup> This pervasive informality is a critical structural issue, as it is intrinsically linked to job precarity, low and unstable incomes, and a lack of access to social safety nets like health insurance and retirement benefits.<sup>43</sup> The scale of the informal economy is further highlighted by the fact that 97% of all non-agricultural economic units in Senegal are classified as informal.<sup>42</sup>

## 2.3 Sectoral Contribution to Employment and GDP

The Bronze Economy plays a central, albeit complex, role in Senegal's national accounts.

6. **Agriculture (including Forestry):** This sector is the largest employer in the country. According to World Bank modeled ILO estimates, it accounted for 21.64% of total employment in 2023.<sup>2</sup> This represents a significant structural shift from the early 1990s when the sector employed over half the workforce.<sup>45</sup> Despite its large employment share, its direct contribution to GDP is comparatively modest, hovering around 15-17%.<sup>3</sup> However, when viewed as a complete agri-food system—encompassing upstream input supply and

downstream processing, transport, and trade—its economic footprint is much larger, accounting for an estimated 38.1% of GDP and 44.3% of total employment in 2020.<sup>46</sup>

7. **Mining:** The mining sector's contribution is the inverse of agriculture's. It is a powerful engine of export revenue, accounting for 32% of total exports in 2023, and a notable contributor to GDP at 4.72%.<sup>9</sup> However, its capacity for direct formal job creation is extremely limited. EITI data suggests direct employment in the extractive sector is only 0.16% of the national total.<sup>9</sup> Other analyses place the figure for industrial mining at 0.22%.<sup>11</sup> This number expands significantly to nearly 1% of the active population when the large artisanal mining workforce is included.<sup>11</sup>
8. **Forestry:** Formal employment in forestry is minimal. Data from 2005 estimated the number of full-time employees in primary production and conservation at just 14,000.<sup>13</sup> This official figure fails to capture the vast informal economy centered on fuelwood, charcoal, and non-timber forest products (NTFPs), which provides livelihoods for a substantial, though unquantified, portion of the rural population.<sup>14</sup>

This sectoral breakdown reveals a fundamental structural imbalance in the Senegalese economy. The agricultural sector, which absorbs the largest share of the labor force, exhibits low productivity and contributes proportionally less to GDP.<sup>4</sup> Conversely, the industrial mining sector is highly productive and a major source of foreign exchange but functions as an economic enclave with minimal direct employment spillovers.<sup>47</sup> This "productivity paradox" is a primary driver of working poverty, as the majority of the workforce is concentrated in low-productivity activities with low remuneration, while the high-productivity sector offers few entry points.<sup>38</sup> Any effective workforce development strategy must therefore pursue a dual objective: first, to increase productivity within agriculture through modernization, value addition, and improved market access, thereby raising incomes for the many; and second, to strengthen the economic linkages between the high-productivity mining sector and the broader domestic economy, particularly through robust local content policies, to create more and better-paying indirect jobs.

## 2.4 Youth and Women in the Labor Market

The labor market is particularly challenging for Senegal's youth and women. Youth unemployment is a major national concern, explicitly acknowledged in PAP 3 as a persistent challenge.<sup>19</sup> Women face a significant gender gap across multiple indicators. Their labor force participation is lower, and extended unemployment disproportionately affects them, with a rate of 32% for women compared to 10% for men.<sup>51</sup> These disparities are deeply embedded in the structure of the Bronze Economy and require targeted policy interventions.

## **Part II: Employment Mapping of the Cultivation Economy**

### **Chapter 3: The Agricultural Workforce Landscape**

The agricultural sector in Senegal, while often treated as a monolith in national statistics, is a mosaic of diverse production systems, regional specificities, and employment arrangements. A granular mapping of this landscape is essential for designing targeted and effective workforce development policies.

#### **3.1 Dominance of Family and Smallholder Farming**

The backbone of Senegalese agriculture is the family farm. An estimated 44.5% of all households in the country are engaged in agricultural activities, with a strong concentration in rural areas, where they represent 67.7% of households.<sup>1</sup> These are overwhelmingly small-scale operations, with family farms occupying 95% of the nation's agricultural land.<sup>6</sup> The typical agricultural household is large, with an average size of 11 members, underscoring the deep integration of family life and agricultural production.<sup>1</sup>

#### **3.2 Labor by Production System**

The nature of agricultural work in Senegal is heavily influenced by the specific production system, which varies significantly by agro-ecological zone.

9. **Rainfed Agriculture:** This system remains the dominant mode of production, engaging over 70% of all agricultural households.<sup>8</sup> In terms of land use, it is characterized by the cultivation of traditional crops like groundnuts and millet.<sup>8</sup> This sub-sector is the most vulnerable to climate change; its reliance on increasingly erratic rainfall makes employment highly seasonal and precarious, directly exposing a large segment of the workforce to the impacts of drought and poor harvests.<sup>4</sup>
10. **Irrigated Agriculture & Horticulture:** While practiced by a smaller proportion of households (around 9%), irrigated agriculture represents a critical area for growth, modernization, and export earnings.<sup>8</sup> The horticulture sub-sector, concentrated in the coastal Niayes region, is particularly dynamic, producing 80% of the country's horticultural output and serving as a key supplier for European markets.<sup>4</sup> Unlike rainfed systems, irrigated farming offers the potential for more stable, year-round employment and higher-value production.
11. **Livestock:** Livestock rearing is a near-ubiquitous activity, practiced by almost nine out of ten agricultural households, often in close integration with crop farming.<sup>1</sup> It serves as a vital source of income diversification, a form of savings, and a critical buffer against shocks like crop failure.<sup>4</sup> Recognizing its importance, initiatives like the World Bank-financed Regional Sahel Pastoralism Support Project (PRAPS) aim to bolster the sub-sector by improving natural resource management and developing infrastructure such as livestock markets and water points, thereby creating employment and strengthening pastoral livelihoods.<sup>53</sup>

### 3.3 Employment Arrangements

The agricultural workforce is composed of a mix of household labor and various forms of hired and seasonal workers.

12. **Household Labor:** Family members constitute the primary labor force on most farms. Rainfed agriculture is the most demanding of household labor, engaging an average of 5.6 people per household. This is followed by livestock activities,



which involve an average of 3.4 family members.<sup>54</sup>

13. **Seasonal Labor (The "Nawetaan"):** This form of employment is crucial for meeting peak labor demands, particularly during planting and harvesting seasons in intensive systems like horticulture and irrigated rice. A study of the Niayes and Delta regions reveals that this workforce is almost exclusively composed of young, male migrants.<sup>7</sup> Their work is characterized by long hours and precarious conditions, and it is a system that, while essential for production, offers little social protection or opportunity for workers to accumulate capital.<sup>7</sup> The existence of this large, mobile, and informal workforce is a defining feature of Senegal's most commercially oriented agricultural zones.
14. **Hired Labor:** The use of external, non-family labor is a sign of commercialization and is more prevalent in certain sub-sectors. It is utilized by 18.6% of households in rainfed agriculture and 12% in horticulture.<sup>54</sup> The higher rate in rainfed systems likely reflects the large scale of certain operations, particularly for cash crops like groundnuts, while its use in horticulture points to the sector's intensive and market-driven nature.

### 3.4 Regional Employment Hubs

Agricultural employment is not uniformly distributed; rather, it is concentrated in distinct regional hubs defined by their agro-ecological characteristics.

15. **The Niayes:** Stretching along the northern coast from Dakar, this region is the undisputed center of Senegalese horticulture. It produces 80% of the country's output, has a strong export focus, and consequently, a high demand for seasonal labor to support its intensive market gardening operations.<sup>4</sup>
16. **The River Valley:** The regions of Saint-Louis and Matam, benefiting from the Senegal River, are dominated by large-scale irrigated rice production, representing a key area for achieving national food sovereignty goals.<sup>4</sup>
17. **The Groundnut Basin:** The central regions, including Kaolack and Kaffrine, form the historical heartland of Senegal's most important cash crop, the groundnut, as well as staple cereals like millet. This area is predominantly rainfed and faces significant challenges from soil degradation and increasing drought frequency.<sup>4</sup>
18. **Casamance:** The southern regions of Ziguinchor, Sédhiou, and Kolda are characterized by higher rainfall and more diverse agro-ecological systems,

supporting fruit arboriculture (mangoes, cashews), rice cultivation, and forestry.<sup>1</sup>

The data clearly indicates that access to water is the fundamental dividing line for job quality in Senegalese agriculture. Rainfed systems, which employ the majority of the agricultural workforce, offer highly seasonal and vulnerable livelihoods that are directly exposed to the increasing unpredictability of the climate. In contrast, irrigated systems, though smaller in their current employment footprint, provide the foundation for more stable jobs, higher-value crops, and a more commercialized farming model. This suggests that public investment in water management and irrigation infrastructure is not merely an agricultural policy but a cornerstone of any strategy aimed at creating more resilient and higher-quality employment in rural Senegal.

## Chapter 4: The Forestry and Agroforestry Workforce

Senegal's forests and parklands, which cover approximately 41% of the country's total land area, are a significant source of employment and livelihoods, though much of this economic activity occurs within the informal sector and is consequently under-recorded in national statistics.<sup>3</sup> The workforce is divided between a small, formal sector focused on conservation and administration, and a vast informal economy centered on wood-energy and the collection of non-timber forest products (NTFPs).

### 4.1 Formal Forestry Employment

The formal forestry sector in Senegal is relatively small. It primarily consists of employment within public administration, managed by the **Direction des Eaux, Forêts, Chasses et de la Conservation des Sols (DEFCCS)**, and roles related to the management of national parks and other protected areas.<sup>13</sup> Data from the UN FAO, though dated to 2005, estimated this formal workforce at approximately 14,000 full-time employees, with 12,000 in primary production and 2,000 in conservation.<sup>13</sup> Current job postings from international organizations like the FAO and NGOs such as WeForest confirm the nature of this formal employment, indicating a consistent demand for highly skilled professionals with advanced degrees in fields like forest

resources management, project management, and ecology.<sup>57</sup>

## **4.2 The Informal Wood-Energy Value Chain**

The most significant source of forest-based employment is the informal wood-energy value chain. Biomass, in the form of fuelwood and charcoal, dominates the national energy supply, particularly for household cooking.<sup>15</sup> The scale of this activity is immense; charcoal production increased by 29% in a single year (from 57,947 tonnes in 2010 to 74,749 tonnes in 2011), and an estimated 8 million cubic meters of wood are harvested annually for fuelwood alone.<sup>15</sup> This value chain supports a large and complex network of producers, transporters, and retailers, operating almost entirely outside the formal economy. While providing essential livelihoods for many, this intense exploitation is a primary driver of forest degradation and deforestation, which is estimated at an annual rate of 40,000 hectares.<sup>3</sup>

## **4.3 Non-Timber Forest Products (NTFPs)**

The collection, processing, and sale of NTFPs represent another vital, yet largely informal, component of the forestry economy. For many of the poorest rural households, especially those headed by women, NTFPs such as baobab fruit (*pain de singe*), wild honey, and various medicinal plants can contribute up to 50% of their total annual cash income.<sup>14</sup> A study estimated the total annual value added from NTFPs to be between 14 billion and 25 billion FCFA (approximately 19 to 35 million USD), a significant economic contribution that is almost entirely excluded from official national accounts.<sup>14</sup> This sub-sector functions as a critical social safety net and a source of economic autonomy for women.

## **4.4 Agroforestry and Reforestation Initiatives**

A growing source of employment in the sector is linked to large-scale environmental

and climate adaptation programs. Initiatives like the **Great Green Wall**, spearheaded by the African Union, and the national "**Plan Senegal Emerging – Green**" (**Green PES**), create direct employment opportunities in nursery management, tree planting, land restoration, and the establishment of firebreaks.<sup>15</sup> These "green jobs" are central to Senegal's strategy for combating desertification and adapting to climate change. Furthermore, the promotion of agroforestry practices—the integration of trees into farming systems—is gaining traction as a method to enhance agricultural resilience. According to the 2022-2023 Annual Agricultural Survey, 40% of agricultural households in Senegal already practice some form of agroforestry, indicating a broad base for expanding these climate-smart employment opportunities.<sup>8</sup>

The analysis of the forestry workforce reveals a significant disconnect between official statistics and the economic reality on the ground. National employment data, focused on formal roles, renders the vast majority of forest-dependent livelihoods invisible. The 14,000 formal jobs are a small fraction of the hundreds of thousands of people who likely derive their primary income from the informal charcoal trade and NTFP collection. This "invisibility" has profound policy implications. Forestry is often framed primarily as a conservation or environmental issue, overlooking its massive role as an employment provider and a social safety net for the most vulnerable. A comprehensive national workforce strategy must therefore recognize and integrate this informal economy. This could involve supporting the formalization of charcoal producer cooperatives to improve sustainability and working conditions, developing value chains for NTFPs to increase incomes for women, and ensuring that the "green jobs" created through large-scale reforestation programs are accessible to those whose traditional livelihoods may be displaced by stricter forest protection measures.

## **Chapter 5: Key Drivers and Constraints in the Cultivation Economy**

The potential for creating decent and sustainable employment in Senegal's agriculture and forestry sectors is shaped by a complex interplay of enabling factors and significant constraints. Understanding these drivers is crucial for designing effective workforce development policies.

### **5.1 Climate Change and Environmental Degradation**

Climate change is the most significant and overarching constraint facing the cultivation economy. As a Sahelian country, Senegal is highly vulnerable to increasing climate variability, which manifests as more frequent and intense droughts, erratic rainfall patterns, and floods.<sup>4</sup> These phenomena directly impact agricultural production, which is predominantly rainfed, leading to crop failures, reduced yields, and heightened food insecurity.<sup>4</sup> This production risk translates directly into employment risk, jeopardizing the livelihoods of the millions who depend on agriculture.<sup>5</sup> The problem is compounded by ongoing environmental degradation. Deforestation continues at an alarming rate of approximately 40,000 hectares per year, driven by factors such as land clearing for agriculture, urbanization, and the demand for fuelwood.<sup>3</sup> This loss of forest cover, coupled with unsustainable farming practices, contributes to soil degradation and desertification, further impairing the land's productive capacity.<sup>4</sup> The vulnerability of the cultivation economy to climate change is not a future threat but a present reality that fundamentally constrains job stability and income generation.

## 5.2 Access to Productive Resources

Access to the fundamental inputs of production—land, finance, and technology—remains a major hurdle for the majority of actors in the cultivation economy, with significant disparities along gender lines.

19. **Land:** Secure access to land is a critical and unresolved issue. The disparity is particularly stark for women. Despite constituting the majority of the agricultural labor force, women hold secure property or use rights over a vanishingly small portion of agricultural land. The 2022–2023 Annual Agricultural Survey found that only 7.5% of the agricultural population holds property rights, with a breakdown of 13% for men and a mere 1% for women.<sup>8</sup> This lack of secure tenure is a fundamental barrier, preventing women from investing in their land, using it as collateral for credit, and scaling their operations beyond subsistence.
20. **Finance:** Limited access to financial services is a persistent constraint for smallholder farmers and small and medium-sized enterprises (SMEs) across agricultural value chains.<sup>4</sup> This prevents investment in productivity-enhancing inputs and equipment. The challenge is also acute for local businesses

attempting to participate in larger value chains, such as supplying mining operations, where a lack of capital is a key barrier to entry.<sup>12</sup>

21. **Technology and Inputs:** The majority of Senegalese agriculture remains characterized by low levels of technology adoption. Smallholder farmers often lack access to high-quality certified seeds, appropriate fertilizers, modern machinery, and crucial information services, such as climate forecasting.<sup>4</sup> The 2022-2023 agricultural survey revealed that only about one in ten agricultural households (11%) use any form of motorized equipment, with manual and animal-drawn tools remaining the norm.<sup>8</sup> This technological gap directly limits productivity, suppresses yields, and keeps farm incomes low.

### 5.3 Infrastructure and Market Access

Inadequate infrastructure for storage, transport, and processing represents a major bottleneck in the cultivation economy. High post-harvest losses, which dramatically affect farmer incomes, are a direct consequence of these deficiencies.<sup>52</sup> The 2022-2023 agricultural survey highlights the scale of the problem: four out of ten agricultural households report a lack of access to essential transport infrastructure. Furthermore, only 22% have access to an agricultural product collection network, and just 44% have access to a processing unit.<sup>8</sup> This infrastructure deficit prevents farmers from adding value to their products and accessing more lucrative markets, trapping them at the lowest rung of the value chain.

### 5.4 Human Capital and Skills

A persistent mismatch exists between the skills possessed by the workforce and the evolving needs of a modern, competitive agricultural sector.<sup>21</sup> The

*Plan Sénégal Émergent* acknowledges this challenge and has made the reform of technical and vocational education and training (TVET) a priority.<sup>21</sup> However, translating this policy ambition into a workforce equipped with the practical skills for climate-smart agriculture, agro-processing, and agricultural entrepreneurship remains a work in progress.

The confluence of these factors demonstrates that climate vulnerability is, at its core, an employment vulnerability. Since the majority of the rural workforce is engaged in climate-dependent rainfed agriculture, production shocks caused by drought or floods translate directly and massively into income and job losses. This dynamic perpetuates a cycle of poverty and food insecurity. Therefore, policies and investments aimed at climate adaptation are not merely environmental initiatives; they are Senegal's most critical labor market stabilization policies. Scaling up investments in climate-smart agriculture, developing robust irrigation systems, expanding access to crop insurance, and promoting diversification into more drought-resilient crops are direct and necessary investments in the job security and economic resilience of the most vulnerable segments of the nation's workforce.

## **Part III: Employment Mapping of the Extractive Economy**

### **Chapter 6: The Dualistic Mining Workforce**

Senegal's mining sector operates as a dualistic economy, comprising two distinct and parallel worlds of employment. On one side is the modern, capital-intensive industrial sector, characterized by high productivity and low direct employment. On the other is the labor-intensive, informal artisanal and small-scale mining (ASM) sector, which provides a livelihood for a much larger number of people under precarious conditions.

#### **6.1 The Industrial Mining Sector**

The formal mining industry in Senegal is dominated by a small number of large, multinational corporations, such as Endeavour Mining (operating the Sabodala-Massawa gold mine) and Grande Côte Operations (a major producer of mineral sands).<sup>12</sup> This sector is defined by its use of advanced technology, significant capital investment, and focus on high-value minerals for export.



- **Key Minerals and Economic Contribution:** The primary outputs of the industrial sector are gold, phosphates, and mineral sands (zircon and ilmenite).<sup>21</sup> These commodities are major drivers of Senegal's export earnings, with the extractive sector as a whole accounting for 32% of total exports in 2023.<sup>9</sup> The sector's contribution to GDP is also significant, recorded at 4.72% in 2022.<sup>9</sup>
- **Employment Characteristics:** Despite its substantial economic footprint, the industrial mining sector is a very small direct employer. EITI data from 2022 indicates that the entire formal extractive sector accounts for only 0.16% of total national employment.<sup>9</sup> A 2020 report breaks this down further, estimating that industrial mining employs just 0.21% of the active population.<sup>11</sup> A large-scale operation like the Sabodala-Massawa gold mine, for instance, has a workforce of approximately 1,620 people.<sup>65</sup> The jobs within this sector are typically high-skilled, requiring specialized expertise in geology, engineering, metallurgy, and complex machinery operation, and are consequently high-paying.<sup>39</sup>

## 6.2 The Artisanal and Small-Scale Mining (ASM) Sector

In stark contrast to the industrial sector, ASM is characterized by its reliance on manual labor, basic technology, and informal structures. It serves as a vital economic activity in specific regions, particularly for gold.

- **Employment Scale and Demographics:** ASM is a major source of rural employment, especially in the eastern regions of Kédougou and Tambacounda.<sup>67</sup> A 2018 monographic study by Senegal's National Agency for Statistics and Demography (ANSD) provided a detailed snapshot of this workforce, estimating that ASM employed a total of 32,474 people.<sup>10</sup> Of this total, the vast majority (27,444) were involved in gold ore extraction. This sub-sector alone accounts for the bulk of employment in the extractive industries; a 2020 EITI report estimated that artisanal gold mining employed 31,359 people, representing 75% of all jobs in the entire extractive sector.<sup>11</sup> The workforce is predominantly young and male, and it includes a significant contingent of migrant workers from neighboring countries such as Mali, Guinea, and Burkina Faso.<sup>10</sup>
- **Governance and Challenges:** The ASM sector operates in a largely informal and often unregulated environment, leading to significant social and environmental challenges, including the widespread use of mercury in gold processing, unsafe

working conditions, and child labor.<sup>69</sup> The Senegalese government has made efforts to formalize and regulate the sector through policies such as the designation of official "orpaillage corridors" and the issuance of authorization cards to artisanal miners.<sup>70</sup> However, bringing this sprawling and often transient activity into a formal framework remains a formidable governance challenge.

This dual structure creates an "enclave versus sponge" employment model. The industrial mining sector functions as a high-productivity, high-revenue "enclave" that is poorly integrated with the local labor market, offering very few direct jobs to the surrounding population.<sup>9</sup> In contrast, the ASM sector acts as a low-productivity economic "sponge," absorbing a vast number of low-skilled, unemployed, and migrant workers who have few alternative livelihood options.<sup>10</sup> This dichotomy necessitates fundamentally different policy approaches. For the industrial sector, the primary policy lever for job creation is not direct employment but the maximization of

*indirect and induced* employment through robust local content policies that foster linkages with the domestic economy. For the ASM sector, the policy imperative is one of *formalization and harm reduction*: improving safety standards, mitigating severe environmental impacts, and capturing a greater share of the economic value for local communities and the state, all while being careful not to destroy the livelihoods it currently sustains.

## **Chapter 7: Regional Dynamics and Local Content Development**

The economic impact of mining in Senegal, particularly in terms of employment, is not distributed evenly across the country. It is geographically concentrated, creating regional hubs of activity that present both opportunities for localized growth and significant governance challenges. A key policy instrument intended to broaden the sector's benefits is the promotion of local content.

### **7.1 Geographic Concentration of Mining**

Mining activities are heavily clustered in a few key regions, determined by their

geological endowments. The eastern regions of **Kédougou** and **Tambacounda** are the heart of Senegal's gold mining industry, hosting both large-scale industrial operations and extensive artisanal mining.<sup>67</sup> The

**Thiès** region is another major hub, primarily for the extraction of phosphates and various construction materials like basalt.<sup>67</sup> This concentration means that the direct economic benefits, as well as the social and environmental pressures of mining, are most intensely felt in these specific areas.

## **7.2 The Local Content Imperative and its Challenges**

To ensure that the benefits of industrial mining extend beyond direct employment and tax revenues, Senegal has established a legal framework to promote local content. The 2016 Mining Code and a subsequent 2022 law on local content require mining companies to give preference to local suppliers for the procurement of goods and services.<sup>9</sup> The objective is to create backward linkages from the mines to the broader domestic economy, stimulating local enterprise and creating jobs in supply chains.

However, the implementation of this policy faces significant hurdles. Data from 2021 revealed a stark imbalance: foreign firms secured contracts worth 810 billion FCFA (\$1.4 billion), while local suppliers obtained only 256 billion FCFA (\$452 million).<sup>12</sup> The primary reason for this disparity is not a lack of policy, but a lack of capacity. According to industry experts, local businesses often struggle to meet the stringent technical, financial, quality, and safety standards demanded by large-scale mining companies.<sup>12</sup> This capacity gap prevents them from competing effectively for major contracts, whether for mining equipment, drilling services, or logistics.

## **7.3 Initiatives to Boost Local Content and Local Development**

Recognizing these challenges, the Senegalese government and its partners have launched several initiatives to strengthen the participation of local enterprises.

- **Financial and Technical Support:** In 2024, the technical secretariat for

monitoring local content (ST-CNSCL) partnered with the National Bank for Economic Development (BNDE) to create tailored financing solutions for Senegalese businesses in the mining and hydrocarbon sectors. Additionally, the ST-CNSCL launched a digital platform designed to directly connect local suppliers with mining companies, improving information flow and matchmaking.<sup>12</sup>

- **Monitoring and Transparency:** The Extractive Industries Transparency Initiative (EITI) plays a crucial role in monitoring progress. EITI reports track the value of contracts awarded to local versus foreign suppliers, providing data that holds both government and companies accountable. These reports indicate some progress, with the share of procurement from local suppliers increasing from 24% in 2021 to 30% in 2022.<sup>9</sup>
- **The Local Development Fund:** A key provision of the 2016 Mining Code is the creation of a Local Development Fund. This mechanism mandates that all mining title holders contribute 0.5% of their sales revenue to a fund dedicated to the economic and social development of local communities residing near mining areas. The law explicitly states that these funds must support projects that include women's empowerment.<sup>39</sup> The effective and transparent management of this fund is critical for translating mineral wealth into tangible local benefits and sustainable employment opportunities that can outlast the life of the mine.

The persistent gap between local content policy and its practical implementation reveals that a legal mandate alone is insufficient. An effective strategy requires a more holistic and collaborative approach that addresses the root causes of the capacity deficit. This transforms local content from a mere compliance requirement into a dynamic economic development program. Such a program would involve a tripartite partnership: the **government** must provide targeted financing, de-risking mechanisms, and a stable regulatory environment; **mining companies** must go beyond simple procurement and provide technical assistance, mentorship, and clear, long-term procurement forecasts that allow local firms to invest and scale up; and **local businesses** must commit to investing in the quality, safety, and skills upgrading necessary to become competitive and reliable partners in the mining value chain.

## Chapter 8: Governance and Socio-Environmental Factors in Mining Employment

The sustainability and quality of employment in Senegal's mining sector are

intrinsically linked to the strength of its governance framework and the management of its socio-environmental impacts. A stable and transparent legal regime, coupled with a strong social license to operate, is a prerequisite for attracting long-term investment and ensuring that the benefits of mining, including jobs, are broadly shared and do not come at an unacceptable social or environmental cost.

## 8.1 The Legal and Regulatory Framework

The cornerstone of Senegal's mining governance is the **2016 Mining Code (Law No. 2016-32)**.<sup>39</sup> This legislation replaced the previous 2003 code and was designed to align with international best practices and the directives of the West African Economic and Monetary Union (UEMOA).<sup>68</sup> Key features of the code that impact employment and local development include:

- **Transparent Permitting:** It establishes a clear and transparent process for granting exploration and exploitation permits.<sup>70</sup>
- **Fiscal Regime:** It outlines a competitive fiscal regime that includes an annual surface royalty, a specific mining tax levied on the market value of the commercialized product (with rates varying by mineral, e.g., 5% for gold), and corporate income tax.<sup>39</sup>
- **State Participation:** The code grants the state a 10% free-carried interest in the capital of any mining company at the exploitation stage, with the option to negotiate an additional participation.<sup>39</sup>
- **Local Development:** Crucially, it mandates the creation of the **Local Development Fund**, requiring companies to contribute 0.5% of their sales to finance community projects.<sup>39</sup>
- **Environmental Protection:** It enshrines the principle of a mine site rehabilitation fund, ensuring that financial provisions are made for the environmental restoration of sites after closure.<sup>39</sup>

## 8.2 Transparency and Accountability (EITI)

Senegal's commitment to good governance is further demonstrated by its

compliance with the **Extractive Industries Transparency Initiative (EITI)**.<sup>70</sup> As a fully compliant member, Senegal regularly publishes reports that disclose payments made by extractive companies and revenues received by the government.<sup>9</sup> These EITI reports are a critical source of public data on production volumes, export values, tax revenues, and progress on local content, fostering accountability and informing public debate about the management of the country's natural resources.<sup>9</sup>

### **8.3 Social License to Operate**

Beyond legal compliance, mining operations depend on maintaining a "social license to operate" from the communities in which they are located. In Senegal, as in many resource-rich countries, this social license is often fragile. Conflicts between mining companies and local populations are a significant challenge, frequently arising from disputes over land access, competition for resources like water, environmental degradation (e.g., dust and noise from blasting), and a perception that the economic benefits of mining are not being shared equitably.<sup>67</sup> These tensions can lead to protests and operational disruptions, which in turn jeopardize the stability of mining employment.

### **8.4 Environmental and Safety Standards**

The industrial mining sector operates under strict environmental and safety standards, often aligned with international benchmarks.<sup>12</sup> While essential for responsible mining, these high standards can act as a barrier to entry for local suppliers and contractors who may lack the capacity or certification to meet them.<sup>12</sup> In contrast, the artisanal and small-scale mining (ASM) sector is characterized by a near-total absence of such standards, leading to severe environmental consequences, such as deforestation and water pollution from the use of mercury and cyanide, as well as significant health and safety risks for workers.<sup>69</sup> The 2016 Mining Code's provision for a mine site rehabilitation fund is a key tool for mitigating the long-term environmental legacy of industrial mining.<sup>39</sup>

The quality of governance is not an abstract concept; it is a direct determinant of the

quality and sustainability of employment in the mining sector. A strong governance framework, as promoted by the EITI and the 2016 Mining Code, fosters a stable and predictable investment climate, which is necessary for the creation of long-term formal jobs. It ensures that mechanisms like the Local Development Fund and local content policies are implemented effectively, translating mineral revenues into broader economic opportunities. Conversely, where governance is weak, revenue leakages can occur, social conflicts can destabilize operations, and the environmental costs of mining can outweigh its economic benefits, ultimately undermining the sector's potential to contribute to sustainable development and job creation.

## **Part IV: Cross-Cutting Thematic Analysis for Workforce Development**

### **Chapter 9: Youth Employment: Tapping the Demographic Dividend**

Addressing youth employment is arguably the most critical socio-economic challenge facing Senegal. With a significant youth bulge and an estimated 100,000 to 200,000 young people entering a constrained labor market each year, the urgency to create sufficient and decent jobs is a central theme of national policy.<sup>38</sup> The Bronze Economy sectors are often looked to as primary sources of this much-needed employment, but they present a complex mix of opportunities and barriers for young people.

#### **9.1 The Scale of the Challenge**

The challenge is not just one of quantity but also of quality and aspiration. Many rural youth are turning away from traditional agriculture, viewing it as precarious, laborious, and lacking in modernity.<sup>41</sup> They are drawn to urban centers or, in some cases, to high-risk migration in search of better opportunities. This trend is exacerbated by a persistent mismatch between the skills acquired through the education system and



the demands of the labor market.<sup>21</sup> In 2021, the NEET rate (Not in Education, Employment, or Training) for young men was 21.61%, while for young women it was a staggering 44.2%.<sup>75</sup>

## 9.2 Government Programs and Initiatives

The Government of Senegal has launched several large-scale programs specifically designed to promote youth employment and entrepreneurship in agriculture.

- **PRODAC (Programme des Domaines Agricoles Communautaires):** Established in 2014, PRODAC's mission is to create modern, large-scale agricultural hubs or "agropoles" that provide infrastructure, training, and a framework for young entrepreneurs to develop agricultural enterprises.<sup>36</sup> The vision is to make agriculture an attractive and viable career path for youth. However, the program has faced significant implementation challenges. A 2023 report from the Court of Auditors highlighted major shortfalls, including a failure to establish the planned "Autonomous Exploitation Units" (UAEs) and thus not meeting its job creation objectives.<sup>76</sup>
- **ANIDA (Agence Nationale d'Insertion et de Développement Agricole):** ANIDA's model involves creating and equipping agricultural exploitations (farms) and then handing them over to beneficiaries, primarily youth and women. The agency reported having created over 10,000 jobs through this model, with a target of 40,000 jobs by 2018.<sup>34</sup> Each farm is designed to employ around 30 young people.<sup>34</sup>
- **Agri-Jeunes Tekki Ndawñi:** This is a major ongoing project co-financed by partners like IFAD and the AfDB, with a budget of over 54 billion FCFA. It is one of the most ambitious youth employment initiatives, targeting 150,000 rural youth across eight regions. The explicit goals are the creation or strengthening of 25,000 viable youth-led enterprises and the generation of 35,000 decent jobs, with a specific target of 50% for young women.<sup>77</sup>

## 9.3 Youth in the Bronze Economy

The reality of youth employment across the Bronze Economy sectors is highly varied:

- **Agriculture:** Young men form the backbone of the precarious seasonal migrant labor force that powers the most intensive parts of the agricultural economy.<sup>7</sup> Programs like the USAID-funded "Feed the Future Senegal Jeunesse en Agriculture" are working to make agriculture more appealing by combining vocational training with positive youth development approaches, such as the 4-H club model.<sup>78</sup>
- **Mining:** The formal, industrial mining sector offers very few opportunities for youth due to its high skill requirements. Consequently, young men are heavily concentrated in the high-risk, physically demanding, and informal ASM sector, where barriers to entry are low.<sup>10</sup>
- **Forestry:** Opportunities for youth are emerging in "green jobs" related to ecosystem restoration, such as large-scale reforestation projects like the Great Green Wall.<sup>15</sup> There is also untapped potential in modernizing the NTFP and wood-energy value chains through youth-led entrepreneurship.

While Senegal's focus on youth employment has led to the creation of numerous well-intentioned, project-based initiatives like PRODAC and ANIDA, their overall impact appears to be limited by systemic constraints. Audit reports and a lack of scalable results suggest that a project-based approach, while capable of creating pockets of success, may not be sufficient to address the root causes of youth unemployment.<sup>76</sup> A more effective long-term strategy would complement these projects by focusing on systemic reforms that improve the entire enabling environment for young people entering the Bronze Economy. This includes tackling the fundamental barriers they face, such as a lack of access to land and finance, and a disconnect between the educational curriculum and the practical skills needed for entrepreneurship. By shifting focus from creating isolated "youth farms" to systemically improving conditions for all young agripreneurs, the existing projects could then function as powerful accelerators within a more conducive and supportive ecosystem, rather than as islands of opportunity in a sea of constraints.

## Chapter 10: Gender Inclusion: Empowering Women in the Bronze Economy

Gender dynamics are a defining feature of Senegal's Bronze Economy. While women are central to rural production and food systems, they face profound structural

barriers that limit their economic potential and perpetuate inequality. Addressing these disparities is not only a matter of social justice but also a critical pathway to unlocking greater productivity and resilience for the entire economy.

## 10.1 The Gender Paradox in the Workforce

A fundamental paradox exists in the Senegalese agricultural sector: women are the backbone of the labor force, yet they are largely excluded from ownership and control of productive assets. Women constitute nearly 70% of the agricultural workforce, particularly in family farming, and they dominate post-harvest activities such as processing and marketing, as well as the collection of non-timber forest products.<sup>6</sup> However, this immense contribution is concentrated in the most precarious, informal, and low-paid segments of the economy. In the formal sector, the disparity is just as stark. Women hold less than 10% of jobs in the industrial extractive sector, and EITI reports highlight persistent income gaps and limited access to decision-making positions.<sup>9</sup>

## 10.2 Structural Barriers to Women's Economic Empowerment

The economic disempowerment of women in the Bronze Economy is rooted in several interconnected structural barriers:

- **Land Rights:** This is the single most significant constraint. The 2022-2023 Annual Agricultural Survey reveals a staggering disparity: while 13% of men in the agricultural population hold property or secure use rights over land, only 1% of women do.<sup>8</sup> This effectively excludes women from owning the primary means of production, which in turn severely limits their ability to invest in sustainable practices, access credit (for which land is the primary form of collateral), and transition from subsistence farming to commercial enterprise.<sup>81</sup>
- **Access to Finance:** Women entrepreneurs consistently face greater difficulties in accessing credit and other financial services compared to their male counterparts. This is often linked to their lack of land tenure and other forms of collateral.<sup>81</sup>

- **Access to Training and Technology:** Women often have less access to agricultural extension services, technical training, and modern technologies that could enhance their productivity.<sup>81</sup>
- **Time Poverty:** The heavy burden of unpaid domestic work, including childcare and household chores, limits the time and energy women can devote to income-generating activities.

### 10.3 Programs and Policies for Women's Inclusion

The Government of Senegal and its partners have recognized these challenges and have implemented programs aimed at promoting women's economic empowerment.

- **Project-Based Interventions:** The "**Femmes et agriculture résilientes (FAR)**" project is a notable example, aiming to transform gender relations by providing women with training in technical and entrepreneurial skills, as well as knowledge of their rights.<sup>82</sup> Other initiatives, like the one supported by the **ICR Facility**, focus on strengthening women's cooperatives in the horticulture sector to improve their business models and access to finance.<sup>83</sup>
- **Grassroots Organizing:** Women are also organizing at the grassroots level. The "**Alliance Nationale de La Femme Rurale**" is a network of women active in agriculture, processing, and community leadership, created to serve as a platform for advocacy and mutual support.<sup>84</sup>
- **Legal and Policy Frameworks:** The **2016 Mining Code** includes a progressive provision that explicitly requires the Local Development Fund to be used for projects that support women's empowerment, creating a potential channel for directing mining revenues toward gender-focused initiatives.<sup>39</sup> The **Agri-Jeunes Tekki Ndawñi** program also has a specific target of ensuring 50% of its 35,000 created jobs benefit young women.<sup>77</sup>

The data presents an inescapable conclusion: the lack of secure land tenure for women is the linchpin that locks in a cycle of disempowerment and constrains the productivity of the entire agricultural sector. While programs providing training, market access, and financial products are valuable, their impact will always be limited as long as the fundamental issue of land rights remains unresolved. Empowering women with secure control over land is not just a social imperative; it is a powerful economic policy. It would unlock a massive wave of latent productivity and

entrepreneurship, enabling women to invest, innovate, and drive growth. Therefore, any national strategy for inclusive development in the Bronze Economy must place comprehensive and enforceable land tenure reform, with a specific focus on women's rights, at its absolute center.

## **Chapter 11: Climate Adaptation and the Future of Work**

The intersection of climate change and employment is a defining challenge for Senegal's Bronze Economy. The increasing frequency and intensity of climate-related shocks not only threaten production but also jeopardize the livelihoods of millions, particularly in the agriculture and forestry sectors. In response, Senegal's national climate strategy is creating a new landscape of "green jobs" focused on adaptation and mitigation.

### **11.1 Climate Risks to the Bronze Economy Workforce**

The agricultural sector, the largest employer of the rural population, is on the front line of climate change. Its heavy reliance on rainfed systems makes it acutely vulnerable to rainfall variability, prolonged droughts, and destructive floods.<sup>4</sup> These events lead to crop failure, livestock losses, and a direct erosion of income and job security for smallholder farmers, pushing vulnerable households deeper into poverty and food insecurity.<sup>5</sup> The forestry sector is similarly affected, with climate change exacerbating the risk of bushfires and contributing to land degradation, which in turn threatens the resource base for the informal wood-energy and NTFP economies.<sup>56</sup>

### **11.2 National Climate Commitments and the Role of AFOLU**

Senegal has demonstrated its commitment to addressing these challenges through its Nationally Determined Contribution (NDC) under the Paris Agreement. The NDC outlines the country's targets for reducing greenhouse gas emissions and its priorities

for adaptation.<sup>85</sup> The Agriculture, Forestry, and Other Land Use (AFOLU) sector is central to this strategy, recognized for its potential in both carbon sequestration (mitigation) and enhancing the resilience of ecosystems and livelihoods (adaptation).<sup>55</sup> Key priorities outlined in the NDC include:

- The promotion of **climate-smart agricultural practices**, such as agroforestry and sustainable land management.
- The **preservation and restoration of forests**, including mangrove ecosystems.
- The sustainable management of pastoral resources.<sup>55</sup>

### 11.3 The Emerging Green Jobs Landscape

The implementation of Senegal's climate strategy is creating new employment opportunities across the Bronze Economy. These "green jobs" represent the future of work in a climate-constrained world.

22. **Climate-Smart Agriculture (CSA):** The adoption of CSA practices is generating demand for new skills and job profiles. This includes expertise in producing and using compost, managing resilient seed varieties, implementing advanced water management techniques, and designing agroforestry systems.<sup>55</sup> Initiatives like the **Projet de Gestion des Risques Agricoles pour une Agriculture Durable (PGRAAD)** are designed to build capacity and support investment in these areas.<sup>28</sup>
23. **Ecosystem Restoration and Reforestation:** Large-scale environmental programs are a significant source of direct employment. The **Great Green Wall** initiative and the **"Plan Senegal Emerging – Green" (Green PES)** create jobs in nursery management, tree planting, land rehabilitation, and community-based forest management.<sup>15</sup> The restoration of mangrove ecosystems, which provide critical "blue carbon" services, is another key area for green job creation.<sup>15</sup>
24. **Renewable Energy in Agro-industry:** There is significant potential for jobs related to the integration of renewable energy into agricultural value chains. This includes the installation and maintenance of solar-powered irrigation pumps, biogas plants for energy and fertilizer production, and other clean energy solutions for agro-processing facilities.<sup>40</sup>
25. **Circular Economy and Waste Valorization:** A circular economy approach offers further opportunities for green enterprise. This includes developing businesses

around the reduction of post-harvest losses, the transformation of agricultural waste into valuable products like biochar or compost, and the creation of sustainable biomass briquettes as an alternative to charcoal.

While the push for a green economy creates promising new employment avenues, it must be managed carefully to ensure an equitable outcome. A "green jobs" strategy cannot be implemented in isolation. It necessitates a "Just Transition" framework that anticipates and mitigates potential negative social impacts. For example, policies that successfully reduce deforestation by restricting access to forests could inadvertently displace the thousands of people whose livelihoods depend on the informal charcoal trade. Similarly, a rapid shift to highly mechanized, large-scale climate-smart agriculture could marginalize smallholder farmers, particularly women, who lack the capital to adapt. A just transition approach would ensure that for every policy aimed at conservation or green modernization, there is a corresponding, well-funded program to provide alternative livelihoods, skills training, and financial support for those who are negatively affected. This could involve, for instance, training charcoal producers to become entrepreneurs in sustainable biomass briquette production or solar energy installation. Without such a framework, even well-intentioned green policies risk exacerbating the very poverty and inequality they are meant to alleviate.

## Part V: Consolidated Datasets and Strategic Recommendations

### Chapter 12: Structured Bronze Economy Employment Datasets

This chapter presents synthesized data in a structured format to provide a clear and accessible overview for policymakers, directly addressing the research directive's call for structured datasets to support national planning.

Table 1: Senegal Bronze Economy - Key Macroeconomic and Employment Indicators  
This table provides a high-level summary of the Bronze Economy's contribution to the national picture, allowing for a quick assessment of the relative weight and key trends of each sector.



Indicator	Agriculture (incl. Forestry)	Mining (Industrial)	Mining (Artisanal)	Total Bronze Economy	National Total	Key Sources
<b>Contribution to GDP (%)</b>	~17%	~4.5%	(Part of Informal Sector)	~21.5%	100%	3
<b>Share of Total Exports (%)</b>	Variable (Horticulture, Groundnuts)	~32%	(Largely Informal/Unrecorded)	Significant	100%	9
<b>Share of Total Employment (%)</b>	~21.6% (2023)	~0.2%	~0.7%	~22.5%	100%	2
<b>Share of Informal Employment (%)</b>	~99%	Low (Formal)	~100%	High	~90%	38
<b>Key Gender Disparity Metric</b>	Women: ~70% of labor force, <8% of landholders	Women: <10% of formal jobs	Women: Dominate alluvial panning	Pervasive	-	6
<b>Key Youth Disparity Metric</b>	High in seasonal/informal roles	Low in formal roles	High in high-risk roles	High concentration in informal roles	High NEET rate	7

Table 2: Regional Employment Profile of the Bronze Economy

This table breaks down the geographic concentration of employment, guiding spatially-targeted interventions.

Region	Primary	Estimate	Primary	Estimate	Primary	Key	Key
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	Agricultural Activity	d Agricultural Workforce	Mining Activity	d Mining Workforce	Forestry Activity	Development Challenge	Sources
<b>Dakar</b>	Urban/P eri- urban Horticulture	Moderate	Construction Materials (Quarries)	Moderate	-	Urbanization Pressure	<sup>1</sup>
<b>Diourbel</b>	Groundnut, Millet, Livestock	High	-	Low	Fuelwood/Charcoal	Soil Degradation, Drought	<sup>1</sup>
<b>Fatick</b>	Groundnut, Millet, Salt, Livestock	High	-	Low	Mangrove Restoration, NTFPs	Salinization, Climate Change	<sup>1</sup>
<b>Kaffrine</b>	Groundnut, Watermelon, Livestock	High	-	Low	Fuelwood/Charcoal	Water Scarcity	<sup>8</sup>
<b>Kaolack</b>	Groundnut, Salt, Livestock	High	-	Low	Fuelwood/Charcoal	Soil Salinity	<sup>1</sup>
<b>Kédougou</b>	Subsistence Crops, Cotton	Moderate	Gold (Industrial & ASM)	High	NTFPs, Shea	Land Use Conflict, ASM Impacts	<sup>10</sup>

<b>Kolda</b>	Rice, Maize, Cashew, Cotton	High	-	Low	Timber, Charcoal, NTFPs	Deforestation, Infrastructure Deficit	1
<b>Louga</b>	Livestock (Pastoralism), Niebe	High	-	Low	Fuelwood, Gum Arabic	Desertification	1
<b>Matam</b>	Irrigated Rice, Livestock	Moderate	Phosphates	Low	-	Extreme Heat, Water Management	4
<b>Saint-Louis</b>	Irrigated Rice, Horticulture	High	-	Low	-	Water Management, Coastal Erosion	4
<b>Sédhiou</b>	Rice, Cashew, Fruits	High	-	Low	Timber, Charcoal, NTFPs	Deforestation, Enclavement	1
<b>Tambacounda</b>	Cotton, Cereals, Livestock	High	Gold (ASM)	High	Timber, Charcoal, NTFPs	Water Scarcity, Bushfires	1
<b>Thiès</b>	Horticulture (Niayes), Cassava	High	Phosphates, Zircon, Quarries	Moderate	-	Land Pressure, Water Depletion	4
<b>Ziguinchor</b>	Rice, Fruits (Mango), Cashew	High	-	Low	Timber, Charcoal, Mangrove	Post-conflict Recovery, Deforestation	1

					Restorat ion	ation	
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**Table 3: Summary of Key Government Programs and Employment Impact**

This table provides a performance overview of the government's flagship employment programs to inform future strategy.

Program/A gency	Target Beneficiari es	Stated Employme nt Creation Goal	Reported/ Audited Employme nt Impact	Key Successes	Key Challenge s/Constrai nts	Key Sources
<b>PRODAC</b>	Youth, Women	300,000 jobs (long- term vision)	Limited; failure to establish planned UAEs and meet job targets.	Provides infrastruct ure in some DACs; some youth testimonia ls of success.	Institution al instability; failure to meet core objectives ; governanc e issues noted by Court of Auditors.	36
<b>ANIDA</b>	Youth, Women	40,000 jobs by 2018	10,020 jobs created (as of 2016), with 40% women.	Establishe s turnkey farms for beneficiary es.	Concerns over financial managem ent and procurem ent processes noted in audit reports.	34
<b>Agri- Jeunes Tekki Ndawñi</b>	Rural Youth (150,000)	35,000 decent jobs (50% women)	400 youth enrolled in training; 142 projects	Large- scale, multi- partner financing;	Slow initial budget disbursem ent (10% by Sept	77

			financed (as of Sept 2021).	specific targets for women.	2021); reliance on external financing.	
<b>Local Content Strategy (Mining)</b>	Local SMEs, Senegalese workforce	Increase local procurement and employment	Local procurement share increased from 24% (2021) to 30% (2022).	Legal framework in place; EITI monitoring; some measurable progress.	Local firms lack technical/financial capacity; foreign suppliers still dominate.	9

Table 4: Skills and Training Landscape

This table maps the supply of skills from training institutions against the demand revealed by the job market.

Sector	Key Job Profiles in Demand	Required Skills / Qualifications	Key Training Institutions	Type of Training	Key Sources
<b>Agriculture</b>	Agricultural Technician, Farm Manager, Agribusiness Analyst, Irrigation Specialist	Agronomy, Crop/Animal Production, Farm Management, Agroecology, Water Management, Business Skills	ISEP-Thiès, CFPD-Dakar, UAM (ES2A), USSEIN, ISRA	Vocational (BT, BTS), University (Licence, Master, Ingénieur)	88
<b>Mining</b>	Mining Engineer, Geologist, HME Technician, Maintenance	Geology, Mining Engineering, Electromechanics, Heavy Equipment	UCAD (ENSMG), UAM (ESMGE), Polytech Diamniadio,	University (Ingénieur, Master), Specialized Technical	92

	Specialist, Safety Officer	Maintenance , Risk Management , GIS	Drone Academies		
<b>Forestry</b>	Forestry Officer, Agroforestry Expert, Project Manager (Conservatio n), GIS/Remote Sensing Specialist	Forestry, Ecology, Agroforestry , Sustainable Forest Management , GIS, Project Management	Univ. de Thiès (ENSA), USSEIN, CNFTEFCPN (Ziguinchor), CSFPF (Boukiling)	University (Licence, Master), Specialized Technical	96

## Chapter 13: Strategic Recommendations for Policy and Investment

Based on the comprehensive mapping and analysis presented in this report, the following strategic recommendations are proposed to guide policy, investment, and workforce development in Senegal's Bronze Economy. These recommendations are designed to be interconnected, addressing the systemic challenges of low productivity, informality, and inequality while capitalizing on opportunities for inclusive and climate-resilient growth.

### 13.1 For National Workforce Development

26. **Recommendation 1: Systemically Reform Technical and Vocational Education and Training (TVET).** The current skills mismatch is a major impediment to youth employment. The government should accelerate the reform of the TVET system to align curricula directly with the evolving needs of the Bronze Economy. This involves moving beyond traditional agronomy to embed practical training in climate-smart agriculture, sustainable land management,

agro-processing technologies, digital tools for farm management, and logistics. In the mining sector, partnerships should be forged with major operators like Endeavour Mining and Grande Côte Operations to co-design curricula and apprenticeship programs for high-demand technical roles (e.g., heavy equipment maintenance, industrial safety), ensuring graduates possess industry-recognized certifications.

27. **Recommendation 2: Launch a National "Formalization and Skills Upgrading" Program for the Informal Workforce.** The vast informal workforces in Artisanal and Small-Scale Mining (ASM) and the charcoal value chain represent both a significant challenge and an opportunity. A dedicated national program should be launched to support their transition towards formality. This program should include: (i) mobile registration units to bring workers into the formal system; (ii) on-site training in safer, more efficient, and environmentally sound techniques (e.g., mercury-free gold processing, sustainable charcoal production); and (iii) access to micro-finance and business development services to support the creation of formal cooperatives and small enterprises.

## 13.2 For Sectoral Planning and Investment

28. **Recommendation 3: Prioritize Investment in Water Management and Irrigation as a Core Employment Strategy.** The analysis demonstrates that access to water is the primary determinant of agricultural productivity and job quality. Therefore, public investment in water management should be treated as a fundamental employment and resilience strategy. This requires scaling up investments in a diverse portfolio of water infrastructure, from large-scale projects in the Senegal River Valley to small- and medium-scale irrigation systems (drip, solar-powered pumps) tailored to the needs of smallholder farmers in other regions.
29. **Recommendation 4: Develop Integrated "Agro-Mining" Economic Zones.** In key mining regions like Kédougou and Thiès, development planning should move beyond a siloed approach. The government should pilot the creation of integrated economic zones that explicitly link mining operations to local agricultural value chains. The Local Development Fund, financed by mining revenues, should be strategically deployed to co-finance "dual-use" infrastructure—such as cold storage facilities, processing units, and improved



rural roads—that serves both the procurement needs of the mines and the market access needs of local farming communities.

### 13.3 For Policy Formulation and Governance

30. **Recommendation 5: Enact and Implement Comprehensive Land Tenure Reform with a Focus on Women.** The lack of secure land rights for women is the single greatest impediment to inclusive growth in the rural economy. The government must prioritize the enactment and, crucially, the enforcement of a comprehensive land tenure reform. This reform must include specific, legally binding provisions that guarantee women's rights to own, inherit, and control land. This is the most powerful policy lever for unlocking female entrepreneurship, promoting investment in sustainable land management, and boosting agricultural productivity.
31. **Recommendation 6: Strengthen the Local Content Framework through Capacity Building.** To move beyond the current limitations of local content policy, the framework must evolve from a set of procurement rules to a collaborative, capacity-building partnership. This requires establishing a tripartite mechanism where: (i) the government provides targeted, de-risked financing for local SMEs; (ii) mining companies provide technical assistance, mentorship, and transparent, long-term procurement plans; and (iii) local business associations commit to quality and safety upgrades.
32. **Recommendation 7: Integrate a "Just Transition" Principle into all Climate and Environmental Policies.** To ensure that the shift to a green economy is equitable, all policies related to climate change and environmental protection must include a "Just Transition" component. Any policy that restricts access to natural resources (e.g., stricter forest protection) or could lead to job displacement (e.g., agricultural mechanization) must be paired with a dedicated, well-funded program to provide alternative livelihoods, skills retraining, and social support for the affected populations. This ensures that the costs of environmental progress are not borne by the most vulnerable segments of the workforce.

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# **The Gold Economy: An Analysis of Senegal's Financial Services Employment Landscape**

## **Executive Summary**

Senegal's financial services sector, the "Gold Economy," stands at a pivotal moment of transformation, presenting a complex and dynamic employment landscape. This report provides a comprehensive, nationwide analysis of the work opportunities, skill requirements, and market forces shaping this critical component of the Senegalese economy. The sector, while contributing a modest 2.6% to GDP, is a high-value domain undergoing rapid evolution, driven by digital disruption, regional integration, and a concerted push for financial inclusion.

The employment market within Senegal's Gold Economy is fundamentally dualistic. It is characterized by a high-skill, high-formality "Dakar Core" and a geographically dispersed, low-formality, high-volume "National Periphery." The Dakar Core comprises the headquarters of the nation's 24 commercial banks, 19 insurance companies, and a host of international financial institutions (IFIs) and regulatory bodies. Employment here demands advanced degrees and specialized certifications, with roles in investment banking, complex risk management, and regional oversight commanding global-level expertise. In stark contrast, the National Periphery is dominated by an expansive, semi-formal network of over 15,000 mobile money agents and hundreds of microfinance field officers. These roles, which form the frontline of financial inclusion, require minimal formal education but demand deep community trust, entrepreneurial resilience, and, increasingly, digital literacy.

The catalyst forcing these two ecosystems to intersect and creating profound tension is technology. The meteoric rise of fintech players, most notably Wave, has fundamentally restructured the market. Wave has become the largest financial institution in Senegal by user count, creating a new "barbell" effect in the labor market. On one end, it generates demand for elite, often globally-recruited, software

engineers, product designers, and data scientists. On the other, its low-fee model has compressed the commission-based earnings of the entire agent network, threatening the long-term viability of the traditional cash-in/cash-out (CICO) agent as a standalone profession.

This digital transformation is reshaping job requirements across all sub-sectors. In banking, the focus is shifting from transactional tellers to advisory-focused universal bankers. In insurance, demand is growing for hybrid professionals who blend underwriting knowledge with IT and data analytics skills. In microfinance, the field agent is evolving from a loan collector into a digital coach, tasked with guiding clients through new mobile platforms. Concurrently, the increasing complexity of the digital ecosystem is fueling a "shadow boom" in high-skill employment within regulatory and compliance functions, with bodies like the BCEAO actively recruiting for cybersecurity and financial market infrastructure specialists.

This evolution exposes a critical human capital challenge. While Senegal possesses a robust pipeline of traditional finance and IT graduates from its universities and vocational schools, there is a growing misalignment between this siloed educational output and the market's demand for hybrid talent. The most sought-after professionals are those who can bridge the gap between finance and technology, between risk management and data science, and between product development and regulatory compliance.

To capitalize on the opportunities within the Gold Economy and mitigate the risks of a widening skills gap, this report puts forth a series of strategic recommendations. For government and policymakers, this includes launching a national fintech skills initiative and creating support frameworks for the agent network's evolution. For educational institutions, it involves developing interdisciplinary degree programs and embedding professional certifications into curricula. For employers, it calls for investment in structured upskilling for existing staff and deeper collaboration with universities to build a talent pipeline for the future. By addressing these imperatives, Senegal can cultivate the human capital necessary to drive its Gold Economy forward, ensuring that the benefits of financial innovation translate into sustainable, inclusive, and high-quality employment for its citizens.

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## **Part I: The Macro-Landscape of Financial Services Employment**

## **Chapter 1: Anatomy of the Gold Economy**

### **1.1. Sector Overview and Economic Contribution**

The employment landscape of Senegal's financial services sector is intrinsically linked to its broader economic structure. The nation's economy is heavily reliant on the tertiary sector, which accounts for approximately 59% of Gross Domestic Product (GDP) and is the country's primary source of employment, engaging around 56% of the workforce [User Query]. Within this dominant services-based economy, the sub-sector of financial services and insurance represents a specialized, high-value component. While its direct contribution to GDP is a relatively modest 2.6%, its role as a facilitator of commerce, investment, and economic activity gives it an influence that far outweighs its size [User Query]. The recent discoveries and anticipated production of oil and gas fields are expected to generate positive spillover effects, further boosting activity in key service areas, including trade, transport, and financial services, signaling a strong potential for future growth and employment demand.<sup>1</sup>

The architecture of the Senegalese financial sector is heavily weighted towards traditional banking institutions. An analysis of sector assets reveals that the country's 28 credit institutions (including 24 commercial banks) control approximately 88% of total assets. This concentration of capital provides a clear indication of where the bulk of formal, high-wage employment is located. The microfinance sector, a vital engine of financial inclusion, holds about 7% of assets, while the insurance industry accounts for the remaining 4%.<sup>2</sup> This distribution underscores a system where a few large entities anchor the formal market, complemented by a vibrant and extensive microfinance network reaching deeper into the economy.

### **1.2. The Dualistic Labor Market: Formal vs. Informal Structures**

A defining characteristic of Senegal's Gold Economy is its profoundly dualistic labor

market, which can be conceptualized as two parallel, yet increasingly intersecting, ecosystems. Understanding this bifurcation is essential to any meaningful analysis of employment within the sector.

The first ecosystem is the **Formal "Dakar Core."** This segment is characterized by permanent, salaried positions with structured career paths, benefits, and high barriers to entry. Geographically, it is concentrated in the business districts of Dakar, where the headquarters of major banks, insurance companies, regulatory bodies, and international financial institutions (IFIs) are located.<sup>3</sup> Employment in this core requires advanced formal education, typically a Bachelor's or Master's degree, and often specialized professional certifications. Job postings for senior roles within this ecosystem, such as those from the World Bank Group's International Finance Corporation (IFC) or the African Development Bank (AfDB), frequently demand a decade or more of specialized experience and a global perspective.<sup>4</sup>

The second ecosystem is the **Informal & Semi-Formal "National Periphery."** This segment is defined by work arrangements that are largely commission-based, entrepreneurial, and have low barriers to entry. It constitutes the vast, last-mile delivery network for financial services and is the primary interface for financial inclusion, particularly in rural and underserved communities. This periphery is composed of the extensive networks of mobile money agents working for operators like Wave, Orange, and Free, as well as the field officers and credit agents of the nation's over 200 microfinance institutions (MFIs).<sup>9</sup> Unlike the Dakar Core, employment here is geographically dispersed across the country and does not typically require a university degree. Instead, success hinges on local knowledge, community trust, and entrepreneurial acumen. For example, becoming an Orange Money sub-distributor in a regional area requires an initial capital float of as little as 50,000 FCFA and basic business registration, a stark contrast to the educational and experiential requirements of the formal sector.<sup>12</sup>

A new category of **Emerging "Gig" Roles** is beginning to blur the lines between these two ecosystems. The rise of financial technology (fintech) is creating opportunities for project-based consultants, freelance software developers, and digitally-enabled sales professionals who are not tethered to a physical branch or a traditional employment contract.<sup>14</sup>

The tension between the Core and the Periphery is a central dynamic of the sector's evolution. This is most vividly illustrated by the market entry of Wave, a technology-

first mobile money operator. Wave simultaneously recruits for high-skill, globally competitive roles like remote software engineers, reinforcing the top end of the Dakar Core.<sup>15</sup> At the same time, its disruptive, low-fee business model puts immense downward pressure on the transaction commissions that form the lifeblood of the agents in the National Periphery, impacting not only its own agents but those of competitors as well.<sup>16</sup> This dynamic suggests that future job growth will be highly uneven. The Core will demand ever-deeper specialization in niche, high-value areas, while the Periphery will face an intense competitive environment where survival depends on adapting business models and diversifying services. This reality has profound implications for workforce development, which must cater to both the need for elite digital skills and the need for basic entrepreneurial and sales training for the vast agent network.

### 1.3. The Regulatory Superstructure: BCEAO, WAEMU, and CIMA

The employment landscape of Senegal's financial sector is profoundly shaped by a multi-layered regulatory superstructure composed of powerful regional and pan-African bodies. These institutions are not merely rule-setters; they are also significant employers of high-skilled labor and key drivers of demand for specific competencies within the private sector.

At the apex of this structure is the **Central Bank of West African States (BCEAO)**, which is headquartered in Dakar.<sup>17</sup> As the central monetary authority for the eight-nation West African Economic and Monetary Union (WAEMU), the BCEAO defines and supervises the regulations applicable to all banks and financial institutions, including the burgeoning e-money sector.<sup>17</sup> Its location in Dakar makes it a prestigious and direct employer of professionals with expertise in economics, statistics, monetary policy, financial supervision, and increasingly, information technology and cybersecurity.<sup>5</sup>

The broader **West African Economic and Monetary Union (WAEMU)** framework provides the context for regional integration and harmonized financial policy. Initiatives driven by WAEMU, such as the creation of the regional stock exchange (Bourse Régionale des Valeurs Mobilières, or BRVM) and the development of union-wide financial inclusion strategies, directly influence employment patterns and create



demand for professionals who can operate within this integrated market.<sup>20</sup> Furthermore, development programs targeting the WAEMU region, often in partnership with organizations like the Mastercard Foundation, create specialized finance-related jobs based in Dakar to oversee and manage these cross-border initiatives.<sup>20</sup>

For the insurance sector, the governing body is the **Conférence Interafricaine des Marchés d'Assurances (CIMA)**. This pan-African organization, which regulates the insurance markets of 14 member states including Senegal, has its headquarters in Libreville, Gabon, but its influence is deeply felt in Dakar.<sup>23</sup> CIMA establishes the unified legal and regulatory framework known as the CIMA Code, which governs all insurance operations. It is a direct source of employment for highly specialized roles, such as Insurance Controllers (

*Commissaires Contrôleurs des Assurances*), who are recruited through a rigorous international competitive examination.<sup>25</sup> More broadly, CIMA's regulations drive significant demand for compliance, actuarial, and legal skills within every insurance company operating in Senegal, as they must all adhere to its stringent standards.

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## **Part II: Sub-Sector Employment Deep Dive**

### **Chapter 2: Banking and Traditional Financial Institution Services**

#### **2.1. Market Structure and Key Employers**

The banking sector forms the bedrock of Senegal's formal financial system, commanding the largest share of assets and serving as a primary hub for professional employment. The market is composed of 24 commercial banks and four specialized financial institutions, creating a competitive and diverse landscape [User Query]. This ecosystem features a blend of major pan-African banking groups, subsidiaries of

international banks, and prominent regional and local players.

Key employers include pan-African giants such as **Ecobank**, **Bank of Africa (BOA)**, and **United Bank for Africa (UBA)**, which have a significant presence across the continent.<sup>26</sup> French banking groups also maintain a strong foothold through subsidiaries like

**Société Générale Sénégal** and **CBAO Groupe Attijariwafa bank** (whose parent company is Moroccan but has historical ties to French banking).<sup>26</sup> The market is further enriched by strong regional banks like

**Coris Bank International Sénégal** and local institutions such as **La Banque Agricole (LBA)** and the **Banque de l'Habitat du Sénégal (BHS)**.<sup>26</sup>

This robust structure supports a significant formal employment base, with the sector providing over 5,150 permanent jobs distributed across a network of more than 412 branches nationwide.<sup>2</sup> While branches are present in regional centers, the strategic, managerial, and specialized technical roles are heavily concentrated in corporate headquarters in Dakar.

A niche but important segment within the sector is Islamic banking. Institutions such as the **Banque Islamique du Sénégal (BIS)** and **Tamweel Bank** operate according to Sharia principles, creating demand for professionals with expertise in Islamic finance products and regulations.<sup>26</sup> This adds another layer of specialization to the employment market.

## 2.2. Formal Employment Roles and Hierarchies

Employment within Senegalese banks follows a traditional hierarchical structure, spanning from customer-facing entry-level positions to highly specialized strategic roles. The nature and complexity of these roles vary significantly, creating distinct career pathways.

**Entry-Level and Customer-Facing Roles:** The foundation of the banking workforce is built on positions that interact directly with clients. The most common of these is the *Caissier* (Cashier or Teller), responsible for handling daily transactions like deposits and withdrawals.<sup>31</sup> Another key entry-level role is the

*Chargé de clientèle* (Client Relationship Officer), who serves as the primary point of contact for individual or small business clients, managing their accounts and introducing them to basic banking products.

**Mid-Level and Technical Roles:** As employees advance, they move into more specialized technical and operational functions that form the backbone of the bank's operations. These include the *Comptable* (Accountant), who manages the bank's financial records, and the *Contrôleur de Gestion* (Management Controller or Financial Controller), who is responsible for budgeting, financial analysis, and internal controls.<sup>31</sup> Job descriptions for these roles emphasize tasks such as preparing financial statements, managing tax declarations, monitoring cash flow, and analyzing variances between budgets and actual performance.<sup>31</sup>

**Senior and Strategic Roles:** The apex of the banking employment pyramid consists of senior management and strategic specialist roles, which are almost exclusively based in Dakar and often have a regional or international mandate. These positions are characterized by high levels of responsibility, demanding extensive experience and deep expertise. A prime example is the **Senior Investment Officer** role at the IFC's Financial Institutions Group (FIG) in Dakar. This position requires a minimum of 15-20 years of relevant experience, a documented track record in structuring complex private debt and equity transactions, and a robust network of top-level contacts across Africa's financial industry.<sup>4</sup> Similarly, the

**Operations Officer** position at the World Bank Group, also based in Dakar, focuses on highly specialized areas like providing climate finance advisory services to financial institutions, demanding a Master's degree and at least a decade of experience in the field.<sup>7</sup> These roles highlight the growing demand within the Dakar hub for world-class expertise in niche areas such as project finance, private equity, risk management, and sustainable finance.

## 2.3. Skills and Qualification Pathways

Accessing professional career tracks within Senegal's banking sector is contingent upon a well-defined set of qualifications, skills, and language proficiencies. The pathways to entry and advancement are clearly structured, emphasizing both academic achievement and specialized professional development.

**Formal Education:** The foundational requirement for a professional career in banking is a university degree. A Bachelor's degree (*Licence*) in a relevant field such as Finance, Economics, Business Administration, or Accounting is the standard minimum for entry-level professional roles. For mid-level and senior positions, a Master's degree or an MBA is often expected.<sup>32</sup> Universities like the Université de Thiès and private institutions like Université Dakar-Bourguiba offer dedicated programs that feed directly into this talent pipeline.<sup>32</sup>

**Professional Certifications:** Beyond academic degrees, professional certifications serve as a critical marker of expertise and are often essential for career progression. The premier banking diploma in the region is the *Institut Technique de Banque (ITB) Management Bancaire*. This certification, offered in Senegal through a partnership between the French banking school **ESBanque** and the local Association Professionnelle des Banques et Etablissements Financiers (APBEF), is recognized as an international standard of excellence in banking management.<sup>35</sup> In addition to the ITB, certifications in specialized areas such as risk management, anti-money laundering (AML), and compliance are increasingly important.

**Language Proficiency:** Language skills are a key determinant of career opportunities. Fluency in **French**, the official language of business and government, is a non-negotiable requirement for all roles. For positions within international banks like Citibank or development finance institutions like the IFC and the AfDB, a high level of proficiency in **English** is mandatory, as these roles involve extensive interaction with global partners and stakeholders.<sup>4</sup>

The employment model within the banking sector is being pulled in two distinct directions by market forces. On one hand, the presence of IFIs and the regional aspirations of pan-African banks are creating a concentrated demand in Dakar for a small cadre of hyper-specialized, globally-oriented experts. The job descriptions for roles at the IFC and World Bank are not seeking generic bankers; they are seeking elite specialists with deep knowledge in complex transaction structuring, private equity, and emerging fields like climate finance advisory.<sup>4</sup> This creates a highly competitive, top-tier labor market for a very specific skill set.

Simultaneously, the mass market for basic financial transactions is being rapidly ceded to more agile and accessible fintech and mobile money operators. The fact that traditional banking reaches only 7% of the Senegalese population, while mobile money penetration has surpassed 60%, is a clear indicator of this structural shift

[User Query]. This trend fundamentally challenges the traditional role of branch-level employees. The job of a bank teller or a basic customer service representative is evolving away from simple transaction processing. It is becoming a role centered on sales, client advisory, and digital channel support. The future branch employee must be capable of selling more complex financial products—such as loans, insurance, and investment vehicles—and must be adept at onboarding and guiding customers in the use of the bank's own digital platforms. This implies a future in which banks will likely hire fewer, but more highly skilled and versatile, "universal bankers" at the branch level, while competing fiercely with IFIs and consulting firms for the small pool of elite specialists in Dakar. This necessitates a significant evolution in training programs, away from a focus on transactional procedures and towards the development of sophisticated sales, advisory, and digital literacy competencies.

## Chapter 3: The Insurance and Risk Management Sector

### 3.1. Market Structure and Key Employers

The Senegalese insurance sector, though smaller than banking in terms of asset volume, represents a sophisticated and growing field of employment. The market is regulated by the pan-African body CIMA and consists of 19 licensed insurance companies operating in both life (*vie*) and non-life (*non-vie* or *IARD - Incendies, Accidents, Risques Divers*) segments [User Query].

The competitive landscape is populated by a mix of major international and regional insurance groups. Global giants like **AXA** and **Allianz** have a significant presence, alongside strong pan-African players such as **NSIA Assurances**, **Sunu Assurances**, and the locally prominent **Sonam Assurances**.<sup>36</sup> These firms are the primary employers for a wide range of insurance-specific roles.

Beyond the insurers themselves, the ecosystem includes a vital network of intermediaries. Insurance brokerage firms are key players, providing advisory, risk analysis, policy placement, and claims management services to both corporate and individual clients. **ASCOMA Senegal**, a subsidiary of a larger international group, is a

leading example, positioning itself as a multidisciplinary expert hub for the West Sahelian region.<sup>39</sup>

The market is further deepened by the presence of reinsurance companies, such as the **Société Sénégalaise de Réassurances (SENRE)**, which provide insurance for the insurers, a critical function for managing large-scale risks.<sup>36</sup> The existence of these different layers—primary insurers, brokers, and reinsurers—creates a multi-faceted employment market with diverse opportunities for specialized professionals.

### 3.2. Employment Roles and Functions

Employment in the insurance sector is diverse, encompassing highly technical roles, sales and distribution functions, and emerging digital positions that reflect the industry's ongoing transformation.

**Technical and Actuarial Roles:** The core of any insurance operation lies in its technical expertise. Key roles in this category include:

- 132. **Underwriters (*Souscripteurs*):** Professionals who assess, analyze, and price risk to determine whether to accept an insurance proposal.
- 133. **Claims Managers (*Gestionnaires de Sinistres*):** Experts who manage the entire claims process, from notification and investigation to settlement.
- 134. **Actuaries:** Highly skilled mathematicians and statisticians who use financial theory and data analysis to calculate risk and uncertainty, essential for pricing policies and ensuring the solvency of the company.
- 135. **Risk Analysts:** Professionals who identify and evaluate potential risks to the company's financial stability and operations.

**Sales and Distribution Roles:** This is the public face of the insurance industry, responsible for generating revenue. It includes salaried **Commercial Agents (*Agents Commerciaux*)** and a network of independent **Brokers (*Courtiers*)**. Job titles such as "**Non-Motor Marketing Executive**" are common, with responsibilities focused on securing new business lines, managing relationships with intermediaries like brokers, and meeting sales targets.<sup>40</sup>

**Finance and Management Roles:** Similar to the banking sector, insurance companies require a strong contingent of finance and management professionals.

Roles such as **Accountant (*Comptable*)**, **Chief Financial Officer (CFO)**, and **Finance Business Partner** are integral to operations.<sup>14</sup> A position like a "

**Senior Accountant**" in an insurance firm is highly specialized, requiring not just general accounting skills but also deep knowledge of reinsurance accounting, treasury functions, regulatory reporting standards mandated by CIMA, and the ability to liaise effectively with actuaries and IT departments on system integrity.<sup>40</sup>

**Emerging Digital Roles:** The global wave of "Insurtech" is creating new employment categories in Senegal. The appearance of job postings for a "**Senior Business Analyst - Insurance, French Speaker (Fully Remote)**" by international tech companies like CoverGo is a significant development.<sup>14</sup> This highlights a growing trend towards the digitalization of insurance processes and the increasing viability of remote work. These hybrid roles demand a sophisticated blend of deep insurance business knowledge and modern IT competencies, including process modeling and system analysis, to serve the Francophone African market from anywhere.

### 3.3. Skills and Qualification Pathways

Career progression in the Senegalese insurance sector is predicated on a combination of formal academic qualifications and highly specialized professional training that is specific to the industry.

**Education:** A university degree is the standard entry point for professional roles. Common fields of study include Finance, Actuarial Science, Law (for claims and compliance), and Business Administration. The complexity of insurance products and regulations necessitates a strong analytical and educational foundation.

**Professional Training:** Specialized vocational training is paramount in this sector. The leading institution in Francophone Africa for this purpose is the **Institut Interafricain de Formation en Assurance et en Gestion des Entreprises (IFAGE)**, located in Dakar. IFAGE offers a comprehensive suite of programs tailored to the industry, including Bachelor's and Master's degrees in Actuarial Science, as well as various professional licenses and online certifications in specific domains like Insurance Accounting and Personal Insurance (covering life, health, etc.).<sup>41</sup> Graduating from an institution like IFAGE provides a distinct advantage and a direct



pathway into the industry.

**Regulatory Knowledge:** A deep and thorough understanding of the **CIMA Code** is an absolute prerequisite for any professional working in a technical, compliance, or management capacity within the insurance sector. As the unified legal framework governing the industry across 14 countries, proficiency in its articles is non-negotiable and is a core component of the training provided by institutions like IFAGE.<sup>23</sup>

The employment dynamics of the insurance sector are clearly shifting from a traditional, agent-driven sales model to a more intricate and technologically infused ecosystem. This evolution demands a more complex, tripartite skill set from its workforce. It is no longer sufficient to possess only one area of expertise. The most valuable professionals are those who can integrate deep technical insurance knowledge (underwriting, claims, actuarial principles), modern digital and IT proficiency (data analysis, systems integration), and sophisticated financial management skills.

The evidence for this shift is compelling. While traditional roles like "Accounts Assistant" and sales executives persist<sup>14</sup>, the complexity of other positions has escalated dramatically. The job description for a "Senior Accountant" at an insurer like AMACO reveals a role that has moved far beyond simple bookkeeping to encompass reinsurance, treasury management, and collaboration with both actuaries and IT specialists.<sup>40</sup> Simultaneously, the emergence of fully remote "Senior Business Analyst" positions for global Insurtech firms demonstrates that the industry is actively competing for talent that can serve as a bridge between business processes and technology stacks.<sup>14</sup> The specific requirement for French speakers in these remote roles confirms that they are designed to serve the Francophone African market, including Senegal, creating new forms of high-skill, location-independent employment.

This leads to a "skills escalation" across the board. Traditional functions become more technically demanding, and new hybrid roles (insurance + technology) become increasingly common. This trend places significant pressure on the educational ecosystem. Training institutions like IFAGE must continuously adapt their curricula to integrate more data science, IT project management, and digital marketing to prepare graduates for the realities of the modern insurance industry, where success is defined not just by selling policies but by analyzing data, optimizing processes, and

developing digital products.

## Chapter 4: Microfinance and Financial Inclusion

### 4.1. Market Structure and Key Employers

The microfinance sector in Senegal is not a peripheral activity but a central pillar of the nation's financial inclusion strategy. With over 200 licensed Microfinance Institutions (MFIs), it is considered a benchmark within the West African Monetary Union (WAMU) and ranks first in the region for the total volume of outstanding loans and savings deposits.<sup>11</sup> This dense network serves over 4.3 million clients through a physical footprint of more than 913 service points, demonstrating its deep penetration into communities across the country.<sup>11</sup> The sector's importance is further highlighted by its significant contribution to financing the national economy, estimated at 10.4%.<sup>2</sup>

The MFI landscape is characterized by a diversity of legal structures and operational scales. It includes large, federated networks of mutual savings and credit cooperatives, such as the **Crédit Mutuel du Sénégal (CMS)** and the **Union des Mutuelles du Partenariat pour la Mobilisation de l'Epargne et du Crédit au Sénégal (PAMECAS)**.<sup>11</sup> These networks have extensive branch systems and are major employers.

Alongside these mutualist structures are commercially-oriented MFIs operating as limited companies. A prominent example is **Baobab Sénégal** (formerly MicroCred), a greenfield MFI backed by international investors like the IFC, which focuses on serving micro-entrepreneurs in urban areas.<sup>45</sup> Other key commercial players include

**COFINA**, which is also part of a larger regional group.<sup>11</sup> The sector is further populated by numerous smaller, community-based cooperatives (

*Mutuelles d'Epargne et de Crédit - MEC*) and NGO-led MFIs, which often operate in rural and underserved regions.<sup>11</sup> This variety of institutional types creates a rich and

varied employment market, from large, structured organizations to smaller, community-focused initiatives.

## 4.2. Employment Roles: From Headquarters to the Field

Employment in the microfinance sector is distinctly divided between administrative roles in head offices or main branches and operational roles in the field, which constitute the core of MFI activity and employment.

**Head Office and Branch Roles:** Within the larger MFIs like CMS and PAMECAS, the branch structure mirrors that of traditional banks, albeit on a different scale. Key positions include the *Chef d'agence* (Branch Manager), responsible for the overall performance and management of a service point <sup>46</sup>, and the

*Caissier* (Cashier), who handles daily client transactions.<sup>47</sup>

**Field-Based Roles:** This is where the majority of MFI employment is concentrated and where the unique nature of the sector's work is most apparent. The two most critical field roles are:

- ***Agent de crédit* (Credit Officer):** This professional is responsible for the entire loan cycle at the client level. Their duties include prospecting for new clients, evaluating loan applications, conducting due diligence on borrowers' activities, preparing credit files, and monitoring the use of loan funds.<sup>43</sup>
- ***Agent de recouvrement* (Recovery Officer):** This role is focused on the crucial task of managing loan repayments. Recovery officers track loan portfolios, follow up with clients on repayment schedules, and manage the collection of delinquent loans, often through direct field visits.<sup>43</sup>

These field-based positions require not only financial acumen but also exceptional interpersonal skills, deep community knowledge, and the ability to build relationships of trust with clients.

***Agent Polyvalent* (Multi-skilled Agent):** In many smaller or rural branches, a single employee often performs multiple functions. This "multi-skilled agent" may act as the cashier, process credit applications, conduct client prospecting, and assist with recoveries, highlighting the need for versatility and a broad skill set in MFI

operations.<sup>43</sup>

**Development and Program Roles:** The strategic importance of microfinance attracts significant funding from international development partners, which in turn creates specialized employment opportunities. Organizations like the Mastercard Foundation, as part of its Young Africa Works strategy, fund programs aimed at improving access to finance. This leads to the creation of high-level roles based in Dakar, such as "**Lead, Access to Finance WAEMU**," which requires a professional with a Master's degree and extensive experience in MFI operations, commercial banking, or MSME support program design and management.<sup>22</sup>

### 4.3. The Digital Transformation of MFI Employment

The microfinance sector is in the midst of a profound digital transformation, fundamentally altering the nature of its operations and the skills required of its workforce. This evolution is primarily driven by partnerships with technology providers and the integration of mobile money platforms to improve efficiency and client outreach.

MFIs are increasingly adopting digital solutions to streamline their processes. A key trend is the establishment of "Wallet to Bank" and "Bank to Wallet" interoperability, which connects a client's MFI account directly to their mobile money wallet.<sup>49</sup> For instance, ACEP, a major MFI, has partnered with the fintech company GSIE Technology to deploy a solution called IntercoMobile. This allows ACEP's clients, like small shopkeepers, to make their monthly loan repayments directly from their Orange Money account without having to close their business and travel to a physical branch.<sup>50</sup>

This technological shift has a direct and significant impact on the roles of MFI employees. The job of a field agent is no longer limited to handling cash transactions and paper-based applications. They are now becoming crucial change agents and digital educators. As noted in the case of ACEP's rollout in the Ziguinchor region, field staff and branch managers must act as "ambassadors" for the new digital services, actively training clients, overcoming their reluctance to use e-money, and demonstrating the practical benefits of the technology.<sup>50</sup>

Furthermore, the standard operating procedure for field staff is evolving. Instead of relying solely on manual ledgers, agents are increasingly equipped with digital devices such as smartphones and tablets. These tools are used in the field to collect loan payments electronically, facilitate new loan applications digitally, and send automated SMS reminders to clients about their repayment schedules, thereby reducing risk and improving operational efficiency.<sup>49</sup>

The core employment model of the microfinance sector is therefore undergoing a fundamental metamorphosis from being purely "high-touch"—based on frequent, physical, and personal interaction—to a hybrid "high-tech/high-touch" model. This transition creates a critical upskilling imperative for the existing workforce and redefines the profile of future hires.

The traditional MFI model was built on the foundation of field agents who were deeply embedded in their communities, leveraging local trust to manage financial relationships.<sup>43</sup> This "high-touch" component remains essential. However, the integration of digital solutions, such as the IntercoMobile platform that allows clients to transact via their mobile wallets, introduces a powerful "high-tech" layer.<sup>50</sup> The role of the MFI agent is consequently expanding. As observed with ACEP's agents, their job is no longer just to disburse and collect cash; it now includes the crucial functions of being a digital ambassador, a technology trainer, and a change manager, helping clients navigate and adopt these new platforms.<sup>50</sup>

This hybrid model means that the ideal MFI employee of the future is a professional who is both deeply trusted within their community (maintaining the high-touch element) and digitally proficient enough to champion, support, and troubleshoot new technologies (mastering the high-tech element). This has profound implications for recruitment and training strategies. MFIs can no longer afford to hire solely based on community standing and interpersonal skills; they must also assess or develop digital aptitude. This creates a significant opportunity for vocational training providers to design and offer targeted modules focused on "Digital Transformation for MFIs," "Client Digital Onboarding," and "Managing Hybrid Financial Services," equipping the workforce with the integrated skills necessary for the sector's future.

## **Chapter 5: Fintech and Mobile Money Operations**

## 5.1. The Disruptors: Key Players and Business Models

The fintech and mobile money sub-sector has emerged as the most dynamic and disruptive force in Senegal's Gold Economy, fundamentally reshaping how financial services are delivered and consumed. The landscape is dominated by three principal players, each holding an e-money issuer license from the BCEAO: **Orange Money** (operated by Orange Finance Mobiles Senegal), **Free Money** (operated by Mobile Cash S.A.), and **Wave** (operated by Wave Digital Finance).<sup>19</sup>

The entry of **Wave** has been particularly transformative. By introducing a radically simple and low-cost pricing structure—a flat 1% fee on transactions—Wave rapidly acquired millions of users, becoming the largest financial institution in Senegal by user base.<sup>16</sup> This aggressive strategy created immense competitive pressure, compelling incumbents like Orange Money to drastically reduce their own rates from previous levels of 5-10% down to as low as 0.8% to remain competitive.<sup>16</sup> This price war has had cascading effects throughout the ecosystem, particularly on the economics of agent networks.

In addition to the primary mobile network operators (MNOs), the ecosystem includes specialized fintech companies that act as **aggregators**. A leading example is **InTouch**, a pan-African fintech that has built a one-stop-shop platform for digital services. In Senegal, InTouch manages a vast network of over 15,000 agents, providing them with the infrastructure to offer a wide range of services, including remittances and payments for various providers, thereby creating a multi-service distribution channel.<sup>9</sup> These aggregators play a crucial role in enhancing the capabilities and potential revenue streams of individual agents.

## 5.2. A New World of Work: Emerging Job Categories

The employment structure within fintech companies differs markedly from that of traditional financial institutions. Hiring is heavily skewed towards technology, product development, and aggressive growth functions, creating a new lexicon of job roles in the Senegalese market.

**Growth and Operations:** Rather than expanding through a physical branch network, fintechs scale their user and agent bases through data-driven strategies. This creates demand for roles like "**Country Growth Operations Lead**" and "**Regional Lead (User Growth)**," whose primary objective is to design and execute campaigns to accelerate market penetration.<sup>15</sup>

**Product and Engineering:** The core of any fintech is its technology platform. This necessitates a strong team of technical experts. Job postings from companies like Wave frequently include positions such as "**Product Designer**," "**iOS Engineer**," "**Software Engineer**," and "**Database Reliability Engineer**".<sup>15</sup> Significantly, many of these highly skilled roles are offered on a remote basis, allowing Senegalese fintechs to tap into a global talent pool and, conversely, for Senegalese talent to work on international teams.<sup>15</sup>

**Customer Support:** As the user base scales into the millions, providing effective and responsive customer support becomes a critical operational function. This has led to the creation of a large number of jobs at different levels. Entry-level positions like "**Customer Support Representative**" are essential for handling user inquiries and require fluency in local languages such as **Wolof** in addition to French.<sup>53</sup> At the managerial level, roles like "

**Support Group Lead**" are created to manage teams of representatives, monitor performance, and ensure service quality.<sup>51</sup>

**Corporate and Finance:** Standard corporate functions are also present but are adapted to the fast-paced, tech-driven environment. These include roles like "**Finance Analyst**," "**Financial Controller**," and "**Treasury Manager**".<sup>15</sup> Additionally, as these companies become major public-facing brands, specialized communications roles like "

**Public Relations & Press Officer**" become necessary to manage the company's image and stakeholder relations.<sup>52</sup>

### 5.3. The Agent Network: Structure, Requirements, and Economics

The physical manifestation of the digital finance ecosystem is its agent network.



These agents, who are independent entrepreneurs rather than employees, provide the essential cash-in/cash-out (CICO) services that bridge the digital and physical economies. The requirements to become an agent and the economic model they operate under vary between providers.

### **Structure and Requirements:**

- **Orange Money:** To become a sub-distributor for Orange Money, an individual or entity must be legally established in Senegal with a business registration (NINEA and Registre de Commerce). They must also provide a valid ID and make an initial capital deposit for float, which is set at a minimum of 100,000 FCFA for agents in Dakar and 50,000 FCFA for those in other regions.<sup>12</sup>
- **Free Money:** The process for becoming a Free Money agent is similar, requiring an active Free SIM card for basic use, with more formal business documentation needed for commercial agent status.<sup>55</sup>
- **Wave:** The process to become a Wave distributor involves a formal application, submission of required documents (such as ID and potentially bank statements or business certificates), a training period on the company's products and procedures, and the signing of a distributor contract.<sup>57</sup>
- **Other E-money Providers:** Companies like Coris Money also have a structured process for onboarding agents, requiring a valid ID or business registration, proof of a physical location (like a utility bill), and an initial float deposit.<sup>58</sup>

**Agent Economics and Remuneration:** The commission-based model is the primary source of income for agents, and it is under significant pressure.

- **Commission Structure:** Agent earnings are transaction-based. For example, an Orange Money agent in the past could earn a commission of 7 FCFA for every 1,000 FCFA deposited by a customer, and a commission of between 13 and 17 FCFA for every 1,000 FCFA withdrawn.<sup>59</sup>
- **Impact of Competition:** The competitive disruption caused by Wave's low consumer fees has had a direct, negative impact on the entire system's margins. This has squeezed the commission pool available to agents across all networks, making the standalone CICO business model increasingly challenging.<sup>16</sup>

The rapid expansion of the fintech sector is creating a distinct "barbell" effect on the labor market. At one end, it is generating a significant number of high-skill, high-wage, and often globally-integrated jobs in fields like software engineering, product management, and data science.<sup>15</sup> These positions, frequently offered with remote

work flexibility, represent the pinnacle of the modern knowledge economy.

At the other end of the barbell, however, the same technological disruption is leading to the commoditization of the low-skill agent role. The core CICO function, while essential for the ecosystem's operation, is a high-volume, low-margin business. The intense price competition initiated by Wave has compressed agent commissions across all networks, threatening the long-term financial viability of agents who rely solely on CICO transactions for their income.<sup>16</sup> This pressure is forcing a necessary evolution in the agent business model. To survive and thrive, agents must move "beyond CICO" and transform their small businesses into diversified digital service kiosks. This involves leveraging their position as trusted community hubs to offer a wider array of services, such as facilitating e-commerce purchases, selling micro-insurance, processing utility payments, and acting as last-mile distribution points for various digital platforms.<sup>9</sup> This evolution, however, is not automatic. It requires a new set of skills in multi-product sales, customer education, and basic financial management, presenting both a significant challenge for the existing agent population and a major opportunity for targeted vocational training and support programs.

**Table 5.1: Comparative Analysis of Mobile Money Agent Requirements & Economics in Senegal**

Operator	Legal & Documentation Requirements	Initial Capital Investment (Float)	Commission Structure (Illustrative)	Required Equipment	Key Differentiator/Value Proposition
Wave	Legal ID, potential business registration and bank statements <sup>57</sup>	Not publicly specified, but a float is required to operate.	Based on a low 1% consumer transaction fee, resulting in compressed but high-volume commission potential. <sup>16</sup>	Smartphone with Wave app. <sup>57</sup>	Disruptive low-cost model for consumers, driving high user adoption and transaction volume. <sup>16</sup>

<b>Orange Money</b>	Legal person/entity, NINEA, Registre de Commerce, valid ID, dedicated SIM card. <sup>12</sup>	Minimum 100,000 FCFA (Dakar); 50,000 FCFA (Regions). <sup>12</sup>	Per-transaction fee: e.g., 7 FCFA per 1000 FCFA deposit; 13-17 FCFA per 1000 FCFA withdrawal. <sup>59</sup>	Smartphone with partner app; may use basic phone with USSD. <sup>13</sup>	Strong brand recognition, largest historical network, integrated with Orange telecom services and Orange Bank. <sup>19</sup>
<b>Free Money</b>	Active Free SIM card and valid ID for user registration. Commercial agents require formal business documents (e.g., RCCM). <sup>55</sup>	Not publicly specified, but a float is required to operate.	Commission-based on transactions (deposits, withdrawals, bill payments). <sup>56</sup>	Smartphone or basic phone with USSD capability. <sup>56</sup>	Integrated with Free's telecom offerings, part of a major MNO with an established customer base. <sup>55</sup>

## Chapter 6: Capital Markets and Investment Services

### 6.1. Ecosystem Overview: The BRVM and its Intermediaries

The capital markets sub-sector represents the most specialized and sophisticated tier of Senegal's Gold Economy. As a member of the West African Economic and Monetary Union (WAEMU), Senegal does not have a national stock exchange but is an integral part of the regional financial market. This market is centered around the **Bourse Régionale des Valeurs Mobilières (BRVM)**, the regional stock exchange

headquartered in Abidjan, Côte d'Ivoire, which serves all eight WAEMU member states.<sup>2</sup>

The primary commercial actors and employers within this ecosystem are the licensed market intermediaries. The most important of these are the **Sociétés de Gestion et d'Intermédiation (SGI)**. These are brokerage firms that hold an exclusive license from the regional regulatory authority, the Conseil Régional de l'Épargne Publique et des Marchés Financiers (CREPMF), to execute securities transactions (buying and selling stocks and bonds) on the BRVM on behalf of their clients.<sup>63</sup>

In addition to the SGIs, the ecosystem includes other specialized, licensed entities:

- **Sociétés de Gestion d'OPCVM (SGO)**: These are asset management companies that create and manage collective investment schemes, such as mutual funds (*Fonds Communs de Placement* - FCP).<sup>64</sup>
- **Sociétés de Gestion de Patrimoine (SGP)**: These are wealth management firms that provide advisory services to high-net-worth individuals and families.<sup>64</sup>

These entities form a highly regulated and knowledge-intensive market infrastructure, creating demand for a small but elite group of financial professionals.

## 6.2. Key Employers and Job Roles

Employment in the capital markets sub-sector is concentrated within a handful of specialized firms located in Dakar. The key employers are the SGIs, which include independent, locally-founded firms as well as the brokerage arms of major banking groups. Prominent players in the Senegalese market include **CGF Bourse**, one of the oldest and largest SGIs in the region; **Impaxis Securities**, another leading independent firm; and the brokerage subsidiaries of banks, such as **Société Générale Capital Securities West Africa** and **Attijari Securities West Africa**.<sup>63</sup>

This is a low-volume, high-expertise employment sector, with a distinct set of job roles that differ significantly from those in retail banking or insurance.

- **Broker/Trader**: Professionals responsible for the execution of buy and sell orders on the BRVM, requiring speed, precision, and a deep understanding of market mechanics.

- **Financial Analyst:** This role involves conducting in-depth research and analysis of listed companies, economic trends, and market conditions to produce reports and investment recommendations. CGF Bourse, for example, is known for publishing weekly market analysis for its clients.<sup>68</sup>
- **Asset/Portfolio Manager:** These professionals are responsible for managing the investment portfolios of mutual funds (FCPs) or segregated accounts for institutional and private clients, making investment decisions to meet specific risk and return objectives.<sup>66</sup>
- **Investment Banker / Corporate Finance Advisor:** This function focuses on the advisory and execution of complex financial transactions for corporations and governments. Responsibilities include managing capital raising operations (such as Initial Public Offerings - IPOs, and bond issues), advising on mergers and acquisitions (M&A), and financial restructuring.<sup>66</sup> Impaxis Securities explicitly lists "Investment Bankers" as a role for which they recruit.<sup>69</sup>
- **Institutional Sales and Relationship Management:** These roles are focused on building and maintaining relationships with large institutional clients, such as pension funds, insurance companies, and other asset managers, to market the firm's brokerage and advisory services. This is a distinct role from retail sales, requiring a deep understanding of institutional investment needs.<sup>69</sup>

### 6.3. Skills and Qualification Pathways

The barriers to entry for a career in Senegal's capital markets are exceptionally high, requiring a combination of advanced education, specialized technical skills, and a long-term commitment to the profession.

**Education and Qualifications:** An advanced university degree, such as a Master's in Finance or an MBA with a finance concentration, is considered the standard entry requirement for analytical and advisory roles.<sup>70</sup> The technical rigor of the field demands a strong academic background.

**Skills:** The required skill set is highly analytical and quantitative. Professionals must possess strong financial modeling and valuation skills, the ability to conduct rigorous financial analysis, and a deep understanding of corporate finance principles. In addition to these technical abilities, strong negotiation, presentation, and

communication skills are essential for client-facing roles in investment banking and institutional sales. A comprehensive and detailed knowledge of the regional market regulations set by the CREPMF is non-negotiable for all practitioners.

**Career Trajectory:** Careers in this sub-sector are typically long-term and stable, with relatively low turnover compared to other parts of the financial industry. The career path of Marie Odile Sene, the former CEO of CGF Bourse who served the company for 25 years, including 15 as its leader, is emblematic of the stability and depth of experience found among the senior talent in this field.<sup>71</sup> This indicates a small, close-knit community of experts where reputation and experience are paramount.

The capital markets sub-sector represents the apex of financial expertise in Senegal, but it functions as a very narrow pyramid in terms of employment. The labor market here is characterized by extremely high barriers to entry, low employee turnover, and a significant concentration of talent within a small number of specialized firms, almost all of which are based in Dakar.

The evidence points to a sector that is not, and is not intended to be, a source of mass employment. The list of licensed SGIs is short, and job postings are infrequent and highly specific, targeting roles like "Institutional Sales" or "Investment Bankers" rather than general finance positions.<sup>63</sup> The profiles of the leaders in this field showcase long careers built upon advanced degrees and deep, continuous specialization in the intricacies of financial markets.<sup>70</sup> The core business activities of these firms—securities brokerage, asset management, and corporate finance advisory—are inherently knowledge-intensive and relationship-driven, making them difficult to scale in the same way as a transactional business like mobile money.<sup>66</sup>

Therefore, from a workforce development perspective, the strategic priority for the capital markets sub-sector is not about the quantity of jobs created but about the quality of expertise cultivated. The challenge is not to generate thousands of new positions, but to ensure a consistent, high-quality pipeline of a few dozen exceptionally competent analysts, portfolio managers, and investment bankers each year who can drive the market's sophistication and development. This underscores the critical importance of elite Master's in Finance programs at local universities and the need to foster stronger, more structured links between these academic programs and the leading firms like CGF Bourse and Impaxis Securities for internships, mentorship, and recruitment.

## Chapter 7: Regulatory, Compliance, and Support Functions

### 7.1. Regulatory Bodies as Employers

The regulatory agencies that oversee Senegal's financial sector are not only rule-makers but also significant and prestigious employers of high-skilled labor. Their role in maintaining stability and fostering development creates a steady demand for professionals with a unique blend of financial, legal, and technological expertise.

The **Central Bank of West African States (BCEAO)**, with its headquarters in Dakar, stands out as a major employer. An examination of its vacant positions reveals a sophisticated and modernizing organization. The BCEAO recruits for core financial and economic roles, such as *Chargé du financement des économies* (Economic Financing Officer) and *Surveillant des infrastructures de marchés financiers* (Financial Market Infrastructure Supervisor), which require deep economic and regulatory knowledge.<sup>5</sup> Simultaneously, the central bank is actively hiring for a range of advanced IT and cybersecurity positions, including

*Administrateur systèmes SOC* (Security Operations Center Systems Administrator), *Administrateur réseaux-télécoms* (Network/Telecom Administrator), and *Concepteur-Développeur* (Software Developer).<sup>5</sup> This demonstrates the regulator's dual focus on traditional monetary policy and the critical need to secure the region's increasingly digital financial infrastructure.

The **Conférence Interafricaine des Marchés d'Assurances (CIMA)** also contributes to high-level employment. It recruits for specialized oversight roles like *Commissaires Contrôleurs des Assurances* (Insurance Controllers).<sup>25</sup> Entry into this corps is highly competitive, requiring candidates to succeed in an international examination. The eligibility criteria typically include a Master's degree or a minimum of three years of professional experience in the insurance industry, along with proven technical knowledge in insurance accounting, law, and actuarial science.<sup>25</sup>

While not a direct regulator in the same vein, the **WAEMU** commission and its associated development programs also create finance-related employment opportunities in Dakar. For instance, international partners like the Mastercard



Foundation hire for positions such as a "**Finance Lead, WAEMU**" to be based in Dakar. This role is responsible for managing the complex financial aspects of the foundation's program partnerships across the region, including due diligence, budgeting, and financial reporting, requiring a fully qualified accountant with at least a decade of progressive experience.<sup>72</sup>

## **7.2. In-House Compliance and Risk Management**

The complex regulatory environment necessitates that every financial institution, from the largest bank to the smallest MFI, maintains robust in-house teams dedicated to compliance and risk management. These functions have evolved from back-office checklist roles into strategic, front-line departments.

**Compliance:** Compliance officers are responsible for ensuring their institution adheres to the vast body of regulations issued by the BCEAO, CIMA, and other authorities, as well as international standards related to Anti-Money Laundering and Counter-Financing of Terrorism (AML/CFT). The importance of this function is consistently highlighted in job descriptions for senior roles in banking, insurance, and at IFIs, where regulatory compliance and risk management are listed as core duties.<sup>4</sup>

**Risk Management:** This function is multifaceted, covering credit risk assessment (evaluating the probability of loan defaults), market risk (managing exposure to fluctuations in interest rates and exchange rates), and operational risk (mitigating risks from internal process failures, fraud, or external events). A strong command of risk management frameworks is a frequently cited competency requirement in job postings across the financial sector [User Query].

## **7.3. Accounting, Audit, and Tax Services**

The accounting, audit, and tax services sub-sector is a critical support pillar for the entire Gold Economy, encompassing both in-house professionals and external service providers.

Employment opportunities for accountants are abundant. Job postings for roles like *Comptable Confirmé(e)* (Experienced Accountant) and *Contrôleur de Gestion* (Management Controller) are regularly featured on national employment platforms such as Emploisenegal.com.<sup>31</sup> These positions require a specific set of technical skills, including proficiency in local and regional (OHADA) accounting standards, a thorough understanding of Senegalese tax law (including VAT and corporate income tax), and practical experience with accounting software packages like SAARI.<sup>31</sup>

In addition to in-house roles, there is a strong market for external audit and advisory services, dominated by the major international accounting firms (e.g., PwC, Deloitte) and a number of local firms. Professional qualifications from internationally recognized bodies are highly valued in this field. The **Association of Chartered Certified Accountants (ACCA)**, for example, maintains a global career hub that lists relevant job openings in Senegal, including senior positions like Finance Manager and Chief Financial Officer, demonstrating the demand for professionals with these credentials.<sup>6</sup>

The increasing complexity and pervasive digitalization of the financial sector are fueling a "shadow boom" in employment for regulatory, compliance, and specialized support roles. These functions, once considered back-office overhead, have transformed into critical strategic positions essential for navigating the modern financial landscape.

The evidence for this shift is clear and compelling. A decade ago, a central bank's primary IT concern might have been maintaining a stable internal network. Today, the BCEAO is actively recruiting for highly specialized *Administrateur systèmes SOC* (Security Operations Center analysts) and other cybersecurity experts.<sup>5</sup> This is a direct and necessary response to the systemic risks introduced by the proliferation of digital finance, mobile money, and online banking platforms. The nature of supervision has also become more technical; the job of a

*Surveillant des infrastructures de marchés financiers* is vastly more complex than it was in an analog era, requiring an understanding of payment gateways, digital ledgers, and potential algorithmic vulnerabilities.<sup>5</sup>

This trend extends into the private sector. The modern insurance accountant must be conversant not only in debits and credits but also in reinsurance contracts, actuarial models, and the IT systems that process claims.<sup>40</sup> The emergence of remote business analyst roles for Insurtech companies underscores the demand for professionals who

possess a hybrid understanding of finance, regulation, and technology.<sup>14</sup>

Consequently, the demand for these "support" roles is growing in both number and sophistication, representing a significant and high-value pathway for employment. A graduate with a degree in finance who supplements their education with professional certifications in high-demand areas like cybersecurity (e.g., from Cisco) or data analysis would be exceptionally well-positioned for a successful career, not just within a tech firm, but within the regulatory bodies themselves.<sup>75</sup> This highlights a critical need for the educational system to foster interdisciplinary training that combines the core disciplines of finance with information technology and law, mirroring the integrated nature of the modern Gold Economy.

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## **Part III: Human Capital: The Engine of the Gold Economy**

### **Chapter 8: The Qualification and Training Pipeline**

The dynamism and evolution of Senegal's Gold Economy are supported by a diverse and multi-layered human capital pipeline. This ecosystem encompasses public and private universities offering foundational degrees, specialized professional institutes providing vocational training and certifications, and in-house corporate academies focused on continuous development.

#### **8.1. University and Higher Education Programs**

Formal university education provides the primary entry point for professional careers in the financial sector. Both public and private institutions offer a range of relevant degree programs.

**Public Universities:** The public university system provides comprehensive training in finance-related disciplines. A notable example is the **Université de Thiès**, which

offers a Master's degree in Banque Finance Assurance (BFA). The curriculum for this program is extensive, covering core subjects like banking law, insurance techniques, and bank accounting, as well as specialized topics such as capital markets, microfinance, and Islamic finance, demonstrating a robust public-sector offering designed to meet diverse industry needs.<sup>32</sup>

**Private Institutions:** Senegal has a vibrant landscape of private universities and business schools (*grandes écoles*) that are major contributors to the financial sector's talent pool. These institutions often emphasize professional orientation and strong industry links.

- The **Université Dakar-Bourguiba** offers a Bachelor's (*Licence*) program in Banque Finance, providing students with a solid foundation in financial accounting, risk management, and financial markets.<sup>33</sup>
- The **Ecole Supérieure de Technologie et de Management (ESTM)** provides both Licence and Master programs in Finance-Comptabilité, with clear fee structures and admission timelines, catering to both new high school graduates and professionals seeking advanced degrees.<sup>34</sup>
- The **Groupe ISM (Institut Supérieur de Management)** offers an advanced **MBA in Banque Assurance**. This program is specifically designed for mid-career professionals holding a Bachelor's degree with several years of experience, aiming to equip them for senior roles such as credit risk analyst, back-office manager, or insurance underwriter.<sup>76</sup>
- **AFI-L'Université de l'Entreprise (AFI-L'UE)** offers a Licence in Banque Assurance Finance that has received accreditation from Senegal's national authority for quality assurance in higher education (ANAQ-Sup), a key mark of quality and recognition.<sup>77</sup>

## 8.2. Professional and Vocational Training

For specialized, industry-specific skills and internationally recognized credentials, professionals turn to a range of vocational and certification bodies.

**Banking:** The leading institution for professional banking training is **L'école supérieure de la banque (ESBanque)**. This French-based school has a significant presence in Senegal through a partnership with the national bankers' association

(APBEF). It has issued over 1,300 diplomas and certificates in the country since 2007. ESBanque offers the highly respected **ITB (Management Bancaire)** diploma, which is considered an international benchmark, as well as specialized certifications in critical areas like Compliance Management and Microfinance Agency Management.<sup>35</sup>

**Insurance:** The premier institute for insurance-specific training is the **Institut Interafricain de Formation en Assurance et en Gestion des Entreprises (IFAGE)** in Dakar. IFAGE is a dedicated hub for the sector, offering everything from a Bachelor's degree in Actuarial Science to professional, online certifications in technical fields like Insurance Accounting and Personal Insurance (covering life and health).<sup>41</sup>

**Fintech and IT:** The digital transformation of finance has created immense demand for IT skills, and numerous training centers have emerged to meet this need.

- **MIT-University** offers a wide array of technical certifications that are crucial for building and maintaining financial infrastructure, including credentials in Microsoft SQL Server, Oracle Database, Cisco networking (CCNA), and Linux administration (LPI).<sup>75</sup>
- **Oo2-Formations** provides training and certification in high-level management and governance frameworks, such as project management (PMP®, PRINCE2™), IT governance (COBIT 5®), and cybersecurity (CISA®, CISSP), all of which are highly relevant to the financial sector.<sup>78</sup>
- **Groupe ISM Online** offers practical, software-specific certifications, such as proficiency in Sage accounting software and content management systems like WordPress, which are valuable for a range of support and marketing roles within financial firms.<sup>79</sup>

### 8.3. In-House and Corporate Academies

Major financial institutions in Senegal do not rely solely on the external market for talent development; they make significant investments in their own in-house training infrastructure.

- **Ecobank** stands out with its **Ecobank Academy**, considered one of the largest corporate training centers in Africa. The bank demonstrates a strong commitment to continuous learning by dedicating up to 5% of its payroll cost to

training and setting a strategic goal for all staff to receive an average of 40 hours of training and coaching each year. This internal talent development program is so robust that over 90% of the bank's senior managers are promoted from within.<sup>80</sup>

- **Baobab+**, the digital and energy access subsidiary of the Baobab MFI group, has developed the **Baobab+ Academy**. This is an online training platform specifically designed to develop the skills of its commercial agents, reflecting the need for scalable and consistent training for a distributed workforce.<sup>81</sup>
- **Free (formerly Tigo)** provides its employees with access to "**Millicom University**," a global online learning tool that contains a wide variety of training modules across diverse fields, allowing for continuous and self-directed professional development.<sup>55</sup>

## Chapter 9: Critical Skills Analysis—Gaps and Imperatives

### 9.1. Documented Skill Requirements

A systematic review of job advertisements, institutional reports, and training curricula reveals a clear and consistent set of skills required to succeed in Senegal's Gold Economy. These can be categorized into four key domains.

**Technical Finance Skills:** This forms the foundational knowledge for most professional roles. Required competencies include financial analysis, credit assessment methodologies, insurance underwriting principles, portfolio management techniques, and a strong grasp of accounting principles (general, banking, and insurance-specific). Skills in treasury and cash flow management are also frequently cited.<sup>31</sup>

**Digital and Technical Competencies:** The digital transformation of the sector has made a range of IT skills indispensable. These include:

- **User-level proficiency:** Familiarity with core banking software, mobile money platforms, and fintech applications.

- **Advanced skills:** Demand is high for professionals with expertise in data analytics, database management (SQL, Oracle), network administration (Cisco), and cybersecurity fundamentals.<sup>5</sup>
- **Development skills:** For fintech and IT departments, specific programming languages (e.g., Laravel, React, PHP) and development frameworks are required.<sup>46</sup>

**Professional and Soft Skills:** Across all sub-sectors and hierarchies, a core set of soft skills is universally demanded. These include excellent written and verbal communication, a strong customer service orientation, sales and negotiation capabilities, analytical problem-solving competencies, and the ability to work effectively in a team. For senior roles, strong leadership and project management skills are paramount.<sup>7</sup>

**Language Requirements:** The linguistic landscape is tiered.

136. **French:** Fluency is the default and mandatory requirement for conducting business in Senegal.
137. **English:** Proficiency is essential for roles in internationally-oriented organizations, including IFIs (World Bank, AfDB), global banks (Citibank), and fintechs with global teams and investors (Wave).<sup>4</sup>
138. **Local Languages:** For customer-facing roles that serve the broader population, particularly in the mobile money and microfinance agent networks, fluency in local languages such as **Wolof** is a critical requirement for building trust and ensuring effective communication.<sup>53</sup>

## 9.2. Identifying the Skills Gap

While Senegal's human capital pipeline is effective at producing graduates with foundational skills, a detailed analysis reveals several critical gaps between the current supply of talent and the evolving demands of the Gold Economy.

**The Hybrid Skill Gap:** The most significant and systemic gap is the shortage of "hybrid" professionals—individuals who possess deep expertise in a traditional financial domain (like banking or insurance) combined with strong digital and technological competencies. The market is increasingly seeking individuals who can



bridge the divide between business and IT. The ideal candidate for a role like the remote "Senior Business Analyst - Insurance" is someone who understands underwriting processes *and* can write technical specifications for developers.<sup>14</sup> Similarly, the World Bank's "Operations Officer" for climate finance needs to be both a finance expert

*and* have specialized knowledge of environmental risk modeling.<sup>7</sup> The traditional, siloed educational system is not yet optimized to produce this type of integrated talent in sufficient numbers.

**Data Science and Analytics:** While many institutions offer basic IT training, there appears to be a scarcity of advanced, specialized programs in data science, machine learning, and big data analytics that are specifically tailored to the financial sector. The success of modern fintech is built on data-driven decision-making for everything from credit scoring to marketing. As traditional banks and insurers seek to compete, the demand for financial data scientists will surge, creating a critical shortage area.

**Cybersecurity:** The BCEAO's own recruitment for Security Operations Center (SOC) analysts is a clear signal that cybersecurity has become a top-level systemic concern.<sup>5</sup> With the entire financial system becoming more interconnected and digital, the risk of cyber threats is immense. The supply of qualified cybersecurity professionals with a specific understanding of financial systems and regulations is likely to be well below the market's needs.

**Soft Skills for a Digital Age:** The nature of many frontline jobs is changing, requiring an evolution in soft skills. The role of the MFI field agent or the bank teller is shifting from one of transactional efficiency to one of advisory, sales, and digital coaching.<sup>50</sup> This requires a higher level of empathy, pedagogical skill, and persuasive communication to guide customers through new and sometimes intimidating digital processes. Training programs often focus on technical knowledge, potentially neglecting the development of these crucial, evolved soft skills.

The analysis of Senegal's human capital pipeline reveals a fundamental challenge: while the system is robust in producing graduates in traditional, separate disciplines of finance and information technology, it is not yet optimized to create the integrated, "hybrid" talent that the digital transformation of the financial sector urgently demands. There is a structural misalignment between the siloed nature of most university programs and the increasingly interdisciplinary nature of modern financial job roles.

The educational landscape shows clear and well-established pathways: a student can pursue a Master's in Banque Finance Assurance at the Université de Thiès <sup>32</sup>, a Licence in Finance-Comptabilité at ESTM <sup>34</sup>, or earn a Cisco networking certification at MIT-University.<sup>75</sup> Typically, a student follows one of these distinct tracks.

However, the most valuable and in-demand jobs of the future require a blend of these skills. The World Bank needs an Operations Officer with a Master's in finance who *also* has demonstrable experience in climate risk projects.<sup>7</sup> A global Insurtech firm needs a Business Analyst who understands the intricacies of insurance claims processing

*and* can collaborate effectively with a software development team using agile methodologies.<sup>14</sup> The BCEAO needs an IT security administrator who understands not just firewalls and servers, but the specific systemic risks and regulatory requirements of a financial market infrastructure.<sup>5</sup> The current system largely relies on individuals to self-assemble this hybrid knowledge through a combination of degrees and certifications after graduation, or it depends on large corporations like Ecobank to provide extensive, multi-year on-the-job training through their corporate academies.<sup>80</sup>

This situation presents a clear strategic opportunity for Senegal's educational institutions. By breaking down traditional academic silos and creating new, interdisciplinary programs—such as a "Master's in Financial Technology (Fintech)," a "Bachelor's in Data Science for Finance," or specialized tracks within existing finance degrees on "Digital Banking" or "Insurtech"—they could create a pipeline of graduates who are immediately more valuable and better aligned with the sector's future trajectory. Such an initiative would not only fill a critical skills gap but could also give Senegal a significant competitive advantage in human capital across the West African region.

**Table 9.1: Financial Sector Skills Matrix: Current Supply vs. Future Demand**

Skill Category	Current Supply Strength	Future Demand Trajectory	Identified Gap/Mismatch	Key Training Providers
<b>Core Finance</b> (Accounting, Corp Fin)	High	Stable	Low. Strong supply of graduates with foundational knowledge.	Université de Thiès, ESTM, Groupe ISM, AFI-L'UE <sup>32</sup>

<b>Specialized Finance</b> (Actuarial, Risk, Inv. Mgt)	Medium	High Growth	Medium. Need for deeper specialization in risk, compliance, and asset management. Actuarial talent is scarce.	IFAGE (Insurance/Actuarial), ESBanque (Banking/Risk) <sup>35</sup>
<b>Core IT</b> (Networking, Sys Admin)	Medium	Stable	Low. Good availability of certifications for general IT roles.	MIT-University, Oo2-Formations <sup>75</sup>
<b>Digital/Tech</b> (Data Analytics, Cybersecurity, AI/ML, UI/UX)	Low	High Growth	<b>High.</b> Critical shortage of professionals who combine financial domain knowledge with advanced digital skills.	Limited specialized programs. General IT training from Oo2, MIT-Uni. <sup>75</sup>
<b>Soft Skills</b> (Sales, Advisory, Proj. Mgt, Communication)	Medium	High Growth	<b>High.</b> Need to shift from transactional skills to advisory, digital coaching, and complex problem-solving.	Embedded in most programs, but specialized training is needed for the digital context.
<b>Languages</b> (French, English, Local)	Medium	High Growth (English)	Medium. French and local languages are well-supplied. Gap exists in the number of finance professionals with high business	University language centers, private language schools.

			proficiency in English.	
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**Part IV: Strategic Synthesis and Forward-Looking Recommendations**

**Chapter 10: Key Trajectories Shaping the Future of Work**

The employment landscape of Senegal's Gold Economy is not static; it is being actively reshaped by several powerful and interconnected trajectories. Understanding these forces is key to anticipating future labor market needs and developing effective workforce strategies.

**10.1. The Unstoppable Force of Digitalization**

Digitalization is the single most powerful driver of change in the sector. The proliferation of mobile money, the rise of agile fintech startups, and the adoption of digital processes by incumbent institutions are fundamentally restructuring job roles, skill requirements, and the very concept of the "workplace." The success of Wave demonstrates how a technology-first approach can rapidly overturn established market structures.<sup>16</sup> This trend is creating demand for entirely new roles (e.g., Product Designer, Growth Hacker) while making others (e.g., manual data entry clerk) obsolete. Furthermore, the acceptance of remote work by international fintechs and IFIs is integrating Senegal's high-skill labor market into the global talent pool, creating both opportunities and competitive pressures.<sup>14</sup>

**10.2. The Agent Network at a Crossroads**

The vast network of mobile money and microfinance agents, which forms the backbone of financial inclusion, is at a critical inflection point. The core CICO business model is facing existential pressure due to intense price competition and margin compression, a trend accelerated by Wave's disruptive entry.<sup>16</sup> This trajectory threatens the sustainability of tens of thousands of micro-enterprises if they fail to adapt. The future viability of the agent network hinges on its evolution from a simple transactional channel into a diversified digital services hub. The opportunity lies in leveraging their physical presence and community trust to become last-mile distributors for a range of products, including e-commerce, micro-insurance, and government services, often facilitated by aggregator platforms like InTouch.<sup>9</sup> This trajectory will determine the future of informal employment in the sector.

### **10.3. Regional Integration and the Dakar Hub**

Senegal's strategic position within the WAEMU region and its status as a host for key regional and international organizations have created a unique concentration of high-level, internationally-focused employment in Dakar. The presence of the BCEAO headquarters, the regional offices of the World Bank, the IFC, the AfDB, and development partners like the Mastercard Foundation, generates a distinct labor market for elite professionals.<sup>4</sup> These roles often have a regional mandate, requiring cross-border travel, English proficiency, and expertise in areas like regional financial integration and development program management. This "Dakar Hub" effect creates a virtuous cycle, attracting more talent and organizations, but also potentially widening the skills and income gap between the capital and the rest of the country.

### **10.4. Policy and Development Impact**

The employment landscape is not shaped by market forces alone; it is actively influenced by government policy and the strategic priorities of development partners. National strategies aimed at promoting financial inclusion, youth employment, and digital transformation directly shape the demand for certain skills and roles. For example, the Mastercard Foundation's commitment to enabling millions of young

people to access dignified work, with a focus on agribusiness and the digital economy, creates programmatic jobs and influences the priorities of its MFI and fintech partners.<sup>20</sup> Similarly, World Bank financing programs designed to strengthen public financial management and fiscal sustainability in Senegal will directly increase demand for professionals with skills in public finance, e-procurement, and modern tax administration.<sup>85</sup> These policy-driven initiatives are a significant, non-commercial driver of employment creation and skills demand.

## **Chapter 11: Strategic Recommendations for National Stakeholders**

Based on the comprehensive analysis of Senegal's Gold Economy employment landscape, the following strategic recommendations are proposed to key stakeholders to foster sustainable growth, bridge critical skills gaps, and ensure inclusive development.

### **11.1. For Government and Policymakers (e.g., Ministry of Finance, Ministry of Vocational Training)**

151. **Launch a "National Fintech Skills Initiative":** In partnership with the private sector and educational institutions, establish a dedicated fund to co-finance the creation of interdisciplinary university programs (e.g., Master's in Fintech) and support vocational institutes in offering subsidized, high-demand certifications in areas like financial data analytics, cybersecurity, and digital product management. This will address the critical "hybrid skill gap" identified in this report.
152. **Develop a Support Framework for Agent Networks:** Recognize the agent network as a critical infrastructure for financial inclusion and a major source of micro-entrepreneurship. Develop a national program, in collaboration with MNOs and MFIs, that provides targeted training for agents on business diversification, digital literacy, and financial management. This will help them transition from a precarious CICO-only model to a more sustainable, multi-service digital kiosk model, safeguarding tens of thousands of jobs.
153. **Modernize Public Sector Financial Recruitment:** To effectively regulate and

partner with a rapidly evolving digital financial sector, public institutions must attract top talent. It is recommended to review and modernize civil service recruitment processes for financial and IT roles, adopting competency-based hiring and offering more competitive compensation packages for specialists in areas like cybersecurity and data science, following the precedent set by the BCEAO's recruitment practices.<sup>5</sup>

## **11.2. For Educational and Training Institutions (Universities, IFAGE, ESBanque, etc.)**

154. **Create Integrated, Market-Aligned Degree Programs:** Move beyond traditional academic silos by developing new, integrated degree programs that directly address the market's need for hybrid talent. Examples include a "Master's in Financial Technology," a "Bachelor of Science in Insurance and Data Science," or a "Professional Licence in Digital Banking and Customer Experience."
155. **Embed Professional Certifications into Curricula:** Increase the market value of traditional finance and IT degrees by embedding internationally recognized professional certifications (e.g., from ACCA, Cisco, PMI for project management) as optional modules or pathways within the curriculum. This can be achieved through partnerships with training bodies like Oo2-Formations and ESBanque.<sup>35</sup>
156. **Forge Deep Industry Partnerships:** Establish formal, structured partnerships with leading financial sector employers, particularly fintechs like Wave and aggregators like InTouch. These partnerships should go beyond ad-hoc guest lectures to include curriculum co-design, case study development, joint research projects, and structured, paid internship programs to ensure that academic content is practical, relevant, and aligned with the cutting edge of the industry.

## **11.3. For Financial Sector Employers (Banks, Insurers, MFIs, Fintechs)**

157. **Invest in Structured Upskilling Programs:** Proactively address the digital skills gap within the existing workforce by investing in structured and continuous training programs. This is particularly critical for customer-facing staff in banks



and MFIs, who need to be retrained from transactional roles to advisory and digital coaching roles. Leveraging internal corporate academies, as demonstrated by Ecobank, is a proven model.<sup>80</sup>

158. **Establish Formal, Paid Internship Programs:** Move from informal "stages" to formal, paid internship programs in collaboration with universities. This will create a structured pipeline for identifying and cultivating young talent, particularly for emerging hybrid roles. Offering competitive stipends will attract the best students and provide them with meaningful work experience.
159. **Promote Industry-Wide Collaboration on Skills Standards:** Industry associations, such as the APBEF (banking) and the association of insurers, should collaborate to define common standards and competency frameworks for new and evolving digital roles. This can lead to the creation of shared training resources, industry-wide certification standards, and a more unified approach to tackling the sector's collective human capital challenges.

## **Appendix: Comprehensive Employment Inventory**

*(This appendix provides a categorized list of representative job titles identified during the research, illustrating the breadth of employment opportunities across Senegal's Gold Economy.)*

### **1. Banking and Financial Institution Services**

160. Senior Investment Officer <sup>4</sup>
161. Operations Officer (Climate Finance) <sup>7</sup>
162. Project Management Specialist <sup>74</sup>
163. Contrôleur de Gestion (Management Controller) <sup>31</sup>
164. Comptable Confirmé(e) (Experienced Accountant) <sup>31</sup>
165. Chargé de clientèle (Client Relationship Officer) <sup>46</sup>
166. Caissier (Cashier/Teller) <sup>31</sup>

### **2. Insurance and Risk Management**

139. Senior Finance Business Partner <sup>14</sup>
140. Chief Financial Officer (CFO) <sup>14</sup>
141. Senior Accountant (Reinsurance & Treasury) <sup>40</sup>
142. Non-Motor Marketing Executive <sup>40</sup>

- 143. Senior Business Analyst (Remote) <sup>14</sup>
- 144. Accounts Assistant <sup>14</sup>
- 145. Commissaire Contrôleur des Assurances (Regulatory) <sup>25</sup>

### **3. Microfinance and Financial Inclusion**

- 146. Lead, Access to Finance (Programmatic) <sup>22</sup>
- 147. Chef d'agence (Branch Manager) <sup>46</sup>
- 148. Agent de crédit (Credit Officer) <sup>43</sup>
- 149. Agent de recouvrement (Recovery Officer) <sup>43</sup>
- 150. Agent à compétence pluriel (Multi-skilled Agent) <sup>43</sup>
- 151. Responsable d'agence microfinance (Certified Role) <sup>35</sup>

### **4. Fintech and Mobile Money Operations**

- 152. Country Growth Operations Lead <sup>15</sup>
- 153. Support Group Lead <sup>51</sup>
- 154. Database Reliability Engineer <sup>15</sup>
- 155. Software Engineer <sup>15</sup>
- 156. Product Designer <sup>15</sup>
- 157. Public Relations & Press Officer <sup>52</sup>
- 158. Customer Support Representative (Wolof/English) <sup>53</sup>
- 159. Agent/Distributeur (Self-employed) <sup>12</sup>

### **5. Capital Markets and Investment Services**

- 160. Investment Banker <sup>69</sup>
- 161. Institutional Sales <sup>69</sup>
- 162. Asset Manager / Portfolio Manager <sup>66</sup>
- 163. Financial Analyst <sup>68</sup>
- 164. Directeur Général (CEO/General Manager) <sup>71</sup>

### **6. Regulatory, Compliance, and Risk Management**

- 165. Surveillant des infrastructures de marchés financiers (BCEAO) <sup>5</sup>
- 166. Gestionnaire Conformité (Compliance Manager) <sup>35</sup>
- 167. Head of Division, Anti-Money Laundering <sup>86</sup>
- 168. Chief Analyst, Anti-Money Laundering <sup>86</sup>
- 169. Finance Lead, WAEMU (Program Finance) <sup>72</sup>

### **7. Accounting, Audit, and Tax Services**

- 170. Finance Manager <sup>6</sup>
- 171. Stagiaire en Audit financier (Audit Intern) <sup>6</sup>
- 172. Manager, Tax & Legal <sup>87</sup>
- 173. Comptable sénior (Senior Accountant) <sup>87</sup>

## 8. Support Functions and Emerging Roles

- 174. Administrateur systèmes SOC (SOC Systems Administrator - BCEAO) <sup>5</sup>
- 175. Concepteur-Développeur (Developer - BCEAO) <sup>5</sup>
- 176. Office Management Lead (Fintech) <sup>52</sup>
- 177. Digital, Brand & Customer Experience Manager (Insurance) <sup>40</sup>
- 178. Chargé du financement des économies (Economic Financing Officer - BCEAO)

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# Senegal's Green Horizon: A Systematic Investigation of Employment Opportunities and Strategic Workforce Development

## Executive Summary

Senegal stands at a pivotal moment, poised to harness its green economy as a primary engine for sustainable development, economic growth, and widespread employment. This transformation is underpinned by a robust architecture of national policies and landmark international partnerships. The National Strategy for the Promotion of Green Jobs (SNEV) and the Plan Sénégal Émergent (PSE) articulate a clear domestic ambition, while the UN Partnership for Action on Green Economy (PAGE), the World Bank's Country Climate and Development Report (CCDR), and the transformative €2.5 billion Just Energy Transition Partnership (JETP) provide the capacity, economic rationale, and capital to realize this vision. The JETP, in particular, with its goal of increasing renewable energy to 40% of the electricity mix by 2030, is set to catalyze unprecedented demand for a skilled green workforce.

This report presents a systematic, nationwide investigation into the employment landscape across 17 distinct green economy sub-sectors. It provides a granular mapping of occupational categories, from formal employment and contract work to freelance opportunities and internships, accessible throughout Senegal's diverse geographic and economic contexts. The analysis reveals a dynamic and rapidly evolving job market. The renewable energy sector is experiencing explosive growth, creating a bifurcated demand for high-level engineers and a vast corps of vocational technicians. Sustainable agriculture is projected to be the largest single creator of green jobs, shifting the sector towards knowledge-intensive roles focused on climate resilience and productivity. In waste management, a key trend is the formalization of the informal sector, creating unique socio-economic roles in cooperative management and occupational health.

Across all sectors, a clear profile of the modern Senegalese green professional emerges: a "hybrid" expert who combines deep technical knowledge with essential skills in project management, digital literacy (particularly GIS and data analysis), and

stakeholder engagement. This demand highlights a critical need for Senegal's educational and vocational training institutions to adapt, moving beyond siloed instruction to produce graduates equipped for the interdisciplinary nature of green projects.

Geographically, opportunities are concentrated but also distributed. Dakar remains the hub for policy, finance, and consulting. Thiès is a critical center for industry and renewable energy projects and training. Regional capitals like Saint-Louis and Ziguinchor are anchors for sector-specific programs in water management and agroforestry, respectively, while rural areas are the frontline for community-based conservation and decentralized energy initiatives.

Key strategic recommendations emerge from this analysis. For the Government of Senegal, establishing a national "Green Skills Council" is paramount to ensure tight coordination between policy, industry, and education. For educational institutions, developing new, market-aligned programs in fields like circular economy management and climate finance is essential. For the private sector, investing in apprenticeships and leveraging capacity-building programs like Green Banking Senegal will be crucial to unlocking project pipelines. For professionals and job seekers, cultivating a hybrid skill set and actively engaging with professional networks are the clearest pathways to success.

Ultimately, this report provides a comprehensive evidence base for all stakeholders. It is designed to inform strategic planning, guide workforce development initiatives, shape educational curricula, and refine policy to ensure that Senegal's transition to a green economy is not only environmentally sound but also equitable, inclusive, and rich with opportunity for its people.

## **Part I: The Strategic and Policy Landscape for Green Employment**

The burgeoning green employment market in Senegal is not an incidental phenomenon but the direct result of a deliberate and multi-layered strategic architecture. This landscape is defined by the interplay of ambitious national policies, which set the direction and domestic priorities, and catalytic international

partnerships, which provide the financial momentum, technical expertise, and global accountability framework. Understanding this policy ecosystem is fundamental to mapping the current and future demand for a green workforce, as it dictates investment flows, sectoral priorities, and the specific skills required to achieve Senegal's sustainable development goals.

## **Chapter 1: National Ambitions and Green Growth Frameworks**

Senegal's commitment to a green economy is formally enshrined in national strategies that have evolved over the past decade, reflecting a growing sophistication in approach from targeted job creation programs to systemic economic transformation. These domestic frameworks provide the foundational mandate for public and private action in the green sector.

### **Analysis of the National Strategy for the Promotion of Green Jobs (SNEV)**

The cornerstone of Senegal's initial foray into a structured green jobs policy was the National Strategy for the Promotion of Green Jobs (Stratégie Nationale de Promotion des Emplois Verts, or SNEV), formulated in 2015 with support from the Partnership for Action on Green Economy (PAGE).<sup>1</sup> The SNEV was designed as a comprehensive reference framework with an initial goal of creating 5,000 "decent and sustainable" green jobs by 2022.<sup>1</sup> Its approach was multi-faceted, focusing on several key strategic axes: strengthening the legislative, institutional, and regulatory environment; actively creating green job opportunities; building human capacities through training; developing appropriate financing policies; and establishing robust advocacy and monitoring mechanisms.<sup>1</sup>

The primary implementation vehicle for the SNEV was the Support Programme for the Creation of Green Jobs Opportunities (Programme d'Appui à la Création d'Emplois Verts, or PACEV). This program, funded by the Government of Senegal and UNDP, operationalized the SNEV's vision by promoting inclusive entrepreneurship, with a particular focus on empowering youth and women, especially those heading low-income rural households.<sup>1</sup> PACEV's methodology was practical and supportive, aiming

to provide entrepreneurs with information and technology, offer incentives for engagement, launch necessary investments, and support implementation with logistics and marketing.<sup>1</sup> By June 2019, the PACEV program had facilitated the creation of approximately 2,000 jobs, demonstrating tangible progress towards its targets.<sup>1</sup> The sectors prioritized under this framework included both new and existing areas, such as the distribution of solar-powered mobile kiosks, drinking water production, recycling of energy-efficient lamps, and the reinforcement of established sectors like urban and rural waste valorization, aquaculture, sustainable agriculture, and forestry.<sup>1</sup>

### **Integration with the Plan Sénégal Émergent (PSE)**

The principles of the SNEV have been elevated and integrated into Senegal's overarching national development blueprint, the Plan Sénégal Émergent (PSE). The second phase of the PSE, in particular, explicitly recognizes social and environmental protection as vital goals and scales up the ambition significantly.<sup>4</sup> This is most evident in the plan's inclusion of a "Zero Waste Programme," which aims to move the country decisively towards a circular economy by reducing costs, reusing inputs, and removing harmful substances from the environment.<sup>4</sup>

Crucially, the PSE Phase 2 articulates a far more ambitious target than its predecessor strategies, with a stated plan to create 100,000 new green jobs.<sup>4</sup> This ten-fold increase in ambition signals a significant strategic evolution. While the SNEV and PACEV focused on fostering green entrepreneurship at a relatively small scale, the PSE framework points towards larger, systemic, and infrastructure-driven programs. The "Zero Waste Programme" and the emphasis on large-scale reforestation under the Senegalese Agency for Reforestation and the Great Green Wall are indicative of this shift.<sup>4</sup> This pivot from supporting micro-enterprises to driving major national programs has profound implications for the labor market. It suggests a future demand that will be weighted more heavily towards technical, engineering, project management, and industrial-scale operational roles, complementing the foundational entrepreneurship focus of the SNEV. This evolution from a targeted program to a core pillar of the national development plan demonstrates that green growth is no longer a niche concept but a central element of Senegal's economic vision.

## **Chapter 2: International Partnerships as Catalysts for Job Creation**

While national strategies provide the vision, international partnerships supply the critical momentum—in the form of capital, technical assistance, and policy validation—that transforms ambition into tangible employment opportunities. Senegal has skillfully leveraged a suite of partnerships that work in concert to build the foundations of its green economy, provide the economic justification for investment, and inject the large-scale financing necessary for transformative projects. This synergistic ecosystem of international support is a primary driver of green job creation across the nation.

### **The UN Partnership for Action on Green Economy (PAGE)**

The Partnership for Action on Green Economy (PAGE), a consortium of five UN agencies, has played a crucial role in laying the groundwork for Senegal's green transition. Its interventions have focused on building the essential "software" of the green economy: human capital and institutional capacity. PAGE's support has been instrumental in several foundational activities, including the development of the SNEV itself.<sup>1</sup>

Key PAGE contributions include conducting a "Study on Skills for Green Jobs," which helped identify the specific competencies needed for emerging green occupations, and a "Green Economy Learning Needs Assessment" focused on the public sector.<sup>5</sup> These assessments provide the data necessary for aligning educational and vocational training with real-world market demand. Furthermore, PAGE has actively cultivated green entrepreneurship by supporting the integration of green modules into the established ILO GERME (Gérez Mieux votre Entreprise) business training program, directly training trainers and entrepreneurs to incorporate environmental dimensions into their business models.<sup>5</sup> On a sectoral level, PAGE's collaboration with WIEGO (Women in Informal Employment: Globalizing and Organizing) on a waste management assessment for the Mbeubeuss landfill directly informed the implementation plan for the national solid waste management project (PROMOGED),

linking policy assessment to on-the-ground job creation in the circular economy.<sup>6</sup>

### **The World Bank's Country Climate and Development Report (CCDR)**

If PAGE provides the human capital framework, the World Bank's Country Climate and Development Report (CCDR) for Senegal, published in late 2024, provides the compelling economic and financial "business case" for accelerating the green transition. The CCDR presents a stark choice, quantifying the immense costs of inaction versus the significant benefits of climate action. It warns that without adaptation measures, climate impacts could shrink Senegal's GDP by as much as 9.4% by 2050 and push an additional two million people into poverty.<sup>7</sup>

Conversely, the report makes a powerful argument that proactive climate policy is a potent engine for growth and job creation. The CCDR's macroeconomic analysis finds that adaptation measures could generate GDP gains of about 2% by 2030.<sup>7</sup> Most critically for this report, it projects that a concerted climate action pathway could create approximately 155,000 new jobs, with a staggering 80% of these—around 124,000 jobs—concentrated in the agriculture sector.<sup>7</sup> The report's key recommendations—scaling up renewable energy, advancing climate-smart agriculture, enhancing natural resource management, and investing in sustainable cities—are not merely environmental suggestions; they are direct blueprints for sectoral job creation that will be explored in detail in Part II of this report.<sup>10</sup> The CCDR also emphasizes the need to create an enabling environment for the private sector, noting that at least 40% of the required climate financing must come from private investment, signaling future demand for roles in green finance and investment management.<sup>10</sup>

### **The Just Energy Transition Partnership (JETP)**

The Just Energy Transition Partnership (JETP) represents the "hardware" component of this international support ecosystem—the largest single injection of capital dedicated to Senegal's green economy. Announced in June 2023, the JETP is a landmark agreement between Senegal and an International Partners Group (IPG)



comprising France, Germany, the European Union, the United Kingdom, and Canada.<sup>12</sup> The partnership mobilizes an initial

**€2.5 billion** in new and additional financing over a 3-to-5-year period to support Senegal's energy transition.<sup>14</sup>

The central, and most impactful, goal of the JETP is to support Senegal in increasing the share of renewable energy in its installed electricity capacity to **40% by 2030**—a significant increase from the 30% level at the time of the agreement.<sup>12</sup> This ambitious target will necessitate massive investments in solar, wind, and supporting grid infrastructure, making it the single most powerful driver of green job creation in the country for the coming decade. The partnership is not solely about technology deployment. Its designation as a "Just" transition places a strong emphasis on social equity, ensuring that affected communities are supported, that the transition is inclusive and participatory, and that opportunities for new, good-quality jobs are maximized.<sup>12</sup> The JETP framework requires the development of a detailed investment plan, which will identify the specific projects, policy reforms, and financing mechanisms, further clarifying the pipeline for future employment.<sup>16</sup>

The interconnectedness of these three international initiatives creates a powerful, mutually reinforcing engine for green job creation. PAGE builds the human capital, the CCDD provides the economic justification, and the JETP delivers the infrastructure financing. This synergy means that Senegal's green employment landscape is not built on speculative hope but on a coordinated foundation of skills development, economic modeling, and large-scale capital investment. However, this interdependence also highlights the need for meticulous coordination. Delays in JETP financing could leave a skilled workforce underutilized, while gaps in skills development could undermine the efficiency and long-term success of capital-intensive energy projects.

## **Part II: Sectoral Employment Opportunity Analysis**

The strategic and policy frameworks established in Part I create the demand for a diverse green workforce. This section provides a granular, evidence-based mapping of these employment opportunities across 17 distinct sub-sectors of Senegal's green

economy. By systematically analyzing job advertisements, institutional reports, and project documents, a detailed picture emerges of the specific occupations, required competencies, and market dynamics shaping each sector. For each identified role, the analysis documents key dimensions including job titles, typical employers, geographic distribution, employment structure, technical and soft skills, educational pathways, experience levels, compensation indicators, and market access channels.

## Chapter 3: Renewable Energy Systems

Driven by the ambitious targets of the Just Energy Transition Partnership (JETP), the renewable energy sector is the most dynamic and rapidly expanding frontier of green employment in Senegal. The national goal to achieve a 40% share of renewables in the electricity mix by 2030 is catalyzing massive investment in solar and wind power, creating a wide spectrum of job opportunities from high-level project management to hands-on technical installation.<sup>12</sup>

### Occupational Mapping

The workforce in this sector can be broadly categorized into three main areas: project development and management, technical and installation roles, and commercial and support functions.

**Project Development & Management:** These roles are at the forefront of the energy transition, responsible for designing and executing the large-scale projects funded by the JETP and other private investments.

266. **Job Titles:** Common titles include *Ingénieur Projet Énergies Renouvelables* and *Project Manager (Renewable Construction)*.<sup>19</sup> These professionals oversee projects from conception to commissioning.

267. **Employers:** Recruitment for these roles comes from specialized technical service providers like Teranga Manpower and SERVTEC, as well as directly from international project developers such as Mainstream Renewable Power, the developer of the Taïba Ndiaye wind farm.<sup>19</sup>

268. **Skills:** The required competencies are a blend of technical and managerial expertise. Job postings consistently demand skills in project management software (e.g., MS Project), financial planning and cost tracking, risk analysis, procurement, and the ability to write detailed technical specifications and operating procedures. Given the international nature of the financing and development, a high proficiency in English is often a key requirement alongside French.<sup>20</sup>
269. **Education & Experience:** These are senior-level positions typically requiring a *Bac+5* (Master's degree) in a relevant engineering field, such as *Ingénieur de conception* with a specialization in Energy Engineering or Renewable Energy. Experience requirements range from 5 to 10 years, with a strong emphasis on prior work in the Oil & Gas or energy infrastructure sectors.<sup>20</sup>
270. **Geographic Distribution:** Management and design roles are predominantly based in Dakar, the nation's corporate and policy center. However, the nature of the work requires frequent travel to project sites, which are often located in regions like Thiès, home to the Taïba Ndiaye wind farm.<sup>21</sup>

**Technical & Installation Roles:** This category represents the largest segment of the workforce, responsible for the physical construction, installation, and maintenance of renewable energy assets.

- **Job Titles:** This group includes *Solar PV Technicians*, *Wind Turbine Technicians*, *Electrical Engineers* (specializing in grid integration), and *Maintenance Technicians*.<sup>22</sup>
- **Employers:** The employer base is diverse and growing, encompassing a large ecosystem of local and international installation companies such as Solux, FlexSolar, Bonergie, Takoussane Energy, and Senegrid.<sup>23</sup> The national utility, Senelec, is also a major employer, particularly for grid connection and the operation of larger plants and rural electrification projects like the one in the Saloum Islands.<sup>12</sup>
- **Skills:** Technical skills are paramount and include photovoltaic system dimensioning, solar panel installation and wiring, battery storage system integration, inverter configuration, and adherence to electrical grid connection standards and safety protocols.<sup>22</sup>
- **Education & Experience:** The pathway into these roles is primarily through vocational and technical training. Diplomas such as the *Brevet de Technicien* (BT), *Diplôme Universitaire de Technologie* (DUT), or *Brevet de Technicien Supérieur* (BTS) are common qualifications. Institutions like the *Institut Supérieur*

*d'Enseignement Professionnel de Thiès* (ISEP-Thiès) offer specialized programs for renewable energy technicians.<sup>22</sup> These are often entry- to mid-level roles.

- **Geographic Distribution:** These jobs are distributed nationwide, following the deployment of projects. There are concentrations in large-scale project zones (Thiès) and numerous opportunities in rural areas targeted by universal access initiatives, such as the electrification of the Saloum Islands.<sup>12</sup>

**Commercial & Support Roles:** This essential third category supports the business operations of the renewable energy ecosystem.

167. **Job Titles:** Roles include *Technico-Commercial* (Technical Sales Representative) for renewable equipment and *Contract Support Engineer*.<sup>22</sup>
168. **Employers:** These positions are found within equipment manufacturing and distribution companies, as well as engineering and service firms that support the larger developers and installers.<sup>26</sup>
169. **Skills:** A combination of deep product knowledge, customer relationship management, sales and negotiation skills, and contract administration is required.
170. **Geographic Distribution:** These roles are typically based in urban and regional commercial hubs like Dakar, Thiès, and Saint-Louis, where they can serve a broad client base.

The rapid, large-scale development driven by the JETP has created a bifurcated workforce structure. There is a clear and simultaneous demand for two distinct types of professionals: a high-level cadre of Bac+5 engineers to design and manage complex projects, and a much larger workforce of vocational technicians to build and maintain them.<sup>20</sup> These two talent pipelines are not interchangeable and must be developed in parallel. A bottleneck in the output of qualified technicians from institutions like ISEP-Thiès could delay or compromise the quality of projects designed by top-tier engineers. This underscores the need for a dual-track workforce development strategy that equally prioritizes university-level engineering programs and hands-on vocational training.

Furthermore, the ecosystem extends well beyond purely technical roles. The significant involvement of the private sector, as encouraged by the World Bank and the JETP, generates demand for a host of business support functions.<sup>10</sup> This includes professionals in finance to structure project deals, lawyers to handle contracts and permits, logisticians to manage the supply chain of imported equipment, and sales professionals to drive market adoption.<sup>22</sup> A holistic workforce strategy must therefore recognize and foster the growth of this entire business support ecosystem, not just

the engineering and technical roles, to ensure the smooth and efficient scaling of Senegal's renewable energy sector.

Table 3.1: Occupational Profile for Renewable Energy Systems

Occupational Category	Job Titles	Typical Employers	Key Geographic Locations	Required Education	Key Technical & Digital Skills	Key Soft Skills
Project Development & Management	Ingénieur Projet Énergies Renouvelables, Project Manager, Development Manager	Teranga Manpower, SERVTEC, Mainstream Renewable Power, Lekela Power	Dakar (HQ), Thiès (Project Sites)	Bac+5 (Master's) in Energy/Electrical Engineering	MS Project, AutoCAD, Financial Modeling, Technical Specification Writing, Risk Analysis	Project Management, English Proficiency, Negotiation, Stakeholder Engagement
Technical & Installation	Solar PV Technician, Wind Turbine Technician, Electrical Engineer, Maintenance Technician	Senelec, Solux, FlexSolar, Bonergie, Takoussane, Senegrid	Nationwide, Rural areas (Saloum Islands), Project zones (Taïba Ndiaye)	Vocational (BT, DUT, BTS), Licence Professionnelle	PV System Sizing (e.g., PVsyst), Battery Storage Integration, Grid Connection, Electrical Wiring, Safety Protocols	Problem-Solving, Attention to Detail, Teamwork, Physical Dexterity
Commercial & Support	Technico-Commercial (Sales Engineer),	Equipment Suppliers (e.g., Jinko	Dakar, Thiès, Saint-Louis,	Bachelor's or Master's in	CRM Software, Product Knowledge	Sales & Persuasion, Customer

	Contract Support Engineer, Supply Chain Officer	Solar distributors), Service Companies (e.g., Energia)	Regional Hubs	Business/Engineering	e (PV modules, inverters), Contract Law Basics	Relations, Communication, Organization
<b>Policy &amp; Regulation</b>	Energy Policy Analyst, Regulatory Specialist	Ministry of Energy, Commission de Régulation du Secteur de l'Electricité (CRSE), ANER	Dakar	Master's in Public Policy, Economics, or Law	Energy System Modeling, Policy Analysis, Legal Drafting	Analytical Thinking, Report Writing, Communication, Diplomacy

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## Chapter 4: Energy Efficiency and Management

While renewable energy generation captures headlines, the "demand side" of the energy equation—efficiency and management—represents a significant and growing field for green employment. This sector is driven by a combination of national policy, such as the National Programme on Energy Efficiency and the promotion of sustainable construction standards, and a compelling business case for private companies to reduce energy costs.<sup>4</sup> The recent launch of the Clean Production Centre (CPP) in Dakar, supported by the African Climate Foundation (ACF) and implemented by the Bureau de Mise à Niveau (BMN), aims to accelerate this trend by focusing on energy efficiency, circular economy strategies, and solar energy project development for industries.<sup>27</sup>

### Occupational Mapping

Unlike the large, project-based hiring in renewables, employment in energy efficiency

is more diffuse, often taking the form of specialized consulting or in-house corporate roles.

171. **Job Titles:** Key occupations include *Building Energy Auditor*, who assesses energy consumption in commercial and residential buildings; *Industrial Process Optimization Consultant*, who helps factories reduce energy waste in their production lines; *Energy Manager*, an in-house role for large facilities (hotels, factories, hospitals) responsible for monitoring and reducing energy use; and *Sustainable Construction Specialist*, who advises on energy-efficient building design and materials.<sup>5</sup>
172. **Employers:** The primary employers are specialized consulting firms, engineering companies, and the BMN itself, which provides expertise to the private sector.<sup>27</sup> Large industrial companies, particularly in the Thiès and Dakar industrial zones, are increasingly hiring for in-house energy management roles to control operational expenditures. Architectural and construction firms are also beginning to integrate sustainable design specialists.
173. **Skills:** Professionals in this field require a strong understanding of thermodynamics, electrical systems, and building envelopes. Key technical skills include conducting energy audits, using energy modeling software, understanding industrial machinery and HVAC systems, and knowledge of green building standards and materials. Digital competencies in data logging and analysis are crucial for monitoring energy performance.
174. **Education & Experience:** A background in mechanical or electrical engineering is common. Professional certifications, such as the Certified Energy Manager (CEM), are highly valued and provide a competitive advantage. Experience in industrial settings or building management is often required. PAGE's early support for training artisans and women's groups on the use of local, sustainable construction materials in Thiès demonstrates a long-standing effort to build capacity at the vocational level as well.<sup>5</sup>
175. **Geographic Distribution:** Opportunities are concentrated in economic hubs with high energy consumption: Dakar, for its large commercial buildings, hotels, and administrative centers, and Thiès, for its concentration of industrial activity.

The growth of this sector is currently less dependent on large-scale public investment and more on the private sector's pursuit of cost savings and the emerging "clean production" ethos. As energy prices fluctuate and as international partners like the ACF continue to support initiatives like the Clean Production Centre, the demand for professionals who can deliver measurable reductions in energy consumption is



expected to rise steadily.<sup>27</sup> These roles are critical for Senegal's green industrialization vision, offering a pathway to enhance competitiveness while reducing the national carbon footprint.

## Chapter 5: Sustainable Agriculture and Agroforestry

The sustainable agriculture and agroforestry sector is poised to be the single largest contributor to green job creation in Senegal. It sits at the nexus of several national priorities: ensuring food security, building climate resilience in a country highly vulnerable to drought and desertification, creating rural livelihoods, and protecting biodiversity.<sup>2</sup> The World Bank's CCDD starkly highlights this potential, projecting that climate-smart agriculture and related activities could generate up to 124,000 new jobs, representing 80% of all jobs created through its proposed climate action plan.<sup>7</sup> This signals a fundamental transformation of the agricultural sector from traditional subsistence farming to a more knowledge-intensive, resilient, and sustainable model.

### Occupational Mapping

Employment in this sector is shifting from manual labor to roles requiring specialized knowledge in agronomy, ecology, and community development.

176. **Job Titles:** The new agricultural landscape demands professionals such as *Climate-Smart Agriculture Consultants*, who advise farmers on drought-resistant crops and water-saving techniques; *Agroforestry System Designers*, who plan integrated systems of trees, crops, and livestock; *Agricultural Extension Agents* with a specialization in sustainable and organic practices; and *Soil and Water Conservation Specialists*, who implement techniques to combat erosion and improve soil health.<sup>29</sup>
177. **Employers:** The employer base is a collaborative ecosystem of public, non-profit, and research institutions. Government agencies like the *Agence Nationale de Conseil Agricole et Rural* (ANCAR) are key employers for extension services.<sup>30</sup> A wide range of national and international NGOs, including Gescod, WeForest, and APAF-Sénégal, are actively implementing projects on the ground and hiring

project managers and technical specialists.<sup>29</sup> Research institutes like the *Institut Sénégalais de Recherches Agricoles* (ISRA) and the French *Centre de coopération internationale en recherche agronomique pour le développement* (CIRAD) are central to developing and disseminating new techniques, employing researchers and technicians.<sup>31</sup>

178. **Skills:** Technical skills are paramount and include a deep understanding of agro-ecological principles, soil science, pest management, water-efficient irrigation, and value chain analysis. Digital skills are increasingly critical, particularly the use of Geographic Information Systems (GIS) and remote sensing for land use planning, monitoring crop health, and assessing environmental conditions.<sup>30</sup> Soft skills are equally important, as many roles involve training and mobilizing rural communities, requiring strong communication, facilitation, and proficiency in local languages.
179. **Education & Experience:** The primary educational pathway is a degree in agronomy, such as the *Ingénieur Agronome* program at the *Ecole Nationale Supérieure d'Agriculture* (ENSA) in Thiès.<sup>30</sup> Specialized Master's degrees in Agroforestry or related fields from institutions like the *Université Cheikh Anta Diop* (UCAD) are also highly relevant.<sup>30</sup> Experience in project management, particularly in a rural development context, is highly sought after by NGO employers.<sup>29</sup>
180. **Geographic Distribution:** Opportunities are regionally specific, tied to local ecological and agricultural systems. The Casamance region is a hotspot for agroforestry initiatives due to its climate and biodiversity. The Peanut Basin, the country's agricultural heartland, is a focus for climate adaptation and soil conservation projects. The Senegal River Valley in the north is a key area for roles related to sustainable irrigation and water management.

The massive job creation potential identified by the World Bank reflects a necessary evolution. To boost crop yields by a projected 20% and increase farmers' incomes by 26% through climate-smart practices, a significant investment in human capital is required.<sup>10</sup> This involves moving beyond simply providing inputs to farmers and instead building a robust support system of skilled advisors, trainers, and project managers who can facilitate the adoption of new, more resilient agricultural systems.

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**Table 5.1: Occupational Profile for Sustainable Agriculture and Agroforestry**

Occupational Category	Job Titles	Typical Employers	Key Geographic Locations	Required Education	Key Technical & Digital Skills	Key Soft Skills
<b>Technical Advisory &amp; Extension</b>	Agricultural Extension Agent, Climate-Smart Agriculture Consultant, Agroforestry Specialist	ANCAR, Gescod, APAF-Sénégal, ISRA, CIRAD, Private Agribusinesses	Casamance, Peanut Basin, Senegal River Valley, Rural areas	Bachelor's /Master's in Agronomy, Forestry, or Environmental Science (ENSA, UCAD)	Soil Analysis, Integrated Pest Management, Water Conservation Techniques, GIS/Remote Sensing, Agro-ecological Design	Community Training & Facilitation, Local Language Proficiency (Wolof, Pulaar), Communication
<b>Project Management</b>	Project Coordinator, Program Manager (Agriculture/Food Security)	NGOs (WeForest, Gret, AVSF), Development Agencies (AFD)	Dakar (HQ), Regional project offices (e.g., Fatick, Kédougou)	Master's in Development, Agronomy, or Project Management	Project Cycle Management, M&E, Budgeting, Grant Writing	Leadership, Stakeholder Engagement, Reporting, Cross-cultural Communication
<b>Research &amp; Development</b>	Agricultural Researcher, Soil Scientist, Plant Breeder	ISRA, CIRAD, UCAD	Dakar, Thiès, Regional research stations	PhD or Master's in specialized agricultural sciences	Experimental Design, Laboratory Analysis, Statistical Software (R, SAS), Scientific Writing	Critical Thinking, Problem-Solving, Collaboration
<b>Value</b>	Value	NGOs,	Hubs like	Bachelor's	Market	Negotiation

<b>Chain &amp; Market Access</b>	Chain Specialist, Agribusiness Development Officer	Farmer Cooperatives (e.g., RESOPP), FONSIIS-funded enterprises	Kaolack, Tambacounda; areas with processing potential	/Master's in Agribusiness, Economics	Analysis, Business Planning, Post-Harvest Technology, Quality Control	n, Marketing, Financial Literacy, Cooperative Management
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## Chapter 6: Sustainable Fisheries and Aquaculture

Senegal's extensive coastline and rich marine resources make the fisheries sector a cornerstone of the national economy and a critical source of protein and livelihoods. The transition to a green economy in this sector focuses on ensuring the long-term sustainability of fish stocks, reducing post-harvest losses, and improving the value chain, particularly for the thousands of women who dominate the fish processing trade.<sup>2</sup> Policy drivers include the government's identification of fishing as one of six key green economy sectors and targeted support from international partners like the Food and Agriculture Organization (FAO) to enhance post-harvest infrastructure.<sup>2</sup>

### Occupational Mapping

Job creation is moving beyond capture fisheries towards management, conservation, and value addition.

181. **Job Titles:** Key roles include *Fisheries Resource Manager*, responsible for monitoring stocks and implementing management plans; *Sustainable Aquaculture Specialist*, who develops and manages fish farming operations to reduce pressure on wild stocks; *Post-Harvest Processing Coordinator*, a crucial role focused on improving techniques for drying, smoking, and storing fish; *Marine Ecosystem Monitor*, who tracks the health of coastal habitats; and *Partnership Coordinator*, facilitating community-based management initiatives.<sup>34</sup>
182. **Employers:** Employment opportunities are found within the Ministry of Fisheries, research institutions, international NGOs like Blue Ventures

Conservation, and development projects funded by organizations such as the FAO.<sup>34</sup> Local fishing cooperatives and women's processing groups are also key structures, often requiring support in management and technical skills.

183. **Skills:** Technical competencies include fish stock assessment methods, aquaculture techniques, food safety and hygiene standards (HACCP), and marine biodiversity monitoring. Experience in community-based natural resource management is highly valued. For post-harvest roles, knowledge of improved technologies like the FTT-Thiaroye ovens is essential. An FAO project coordinator role, for example, requires at least five years of experience in small-scale fisheries development and post-harvest technologies.<sup>34</sup>
184. **Education & Experience:** A university degree in marine biology, fisheries science, or a related field is typically required for management and specialist roles. The *Institut Universitaire de Pêche et d'Aquaculture* (IUPA) at UCAD is a key training institution.<sup>35</sup> Vocational training in fish processing and handling is also critical.
185. **Geographic Distribution:** Opportunities are concentrated along Senegal's entire coastline, from Saint-Louis in the north to the Casamance in the south. Specific project interventions, like the FAO's post-harvest project, are targeted at regions like Casamance.<sup>34</sup> The electrification of coastal zones, such as the Saloum Islands under the JETP, is a key enabler, creating new possibilities for jobs in cold storage and modern processing, which were previously unviable due to a lack of reliable power.<sup>12</sup> This demonstrates a direct link between green energy infrastructure and green job creation in other sectors.

The focus on post-harvest activities is a critical lever for both economic and environmental sustainability. By improving processing and storage, the value of each fish caught is increased, reducing the economic pressure to overfish. This creates a demand for professionals who can not only manage fish stocks but also design and manage efficient value chains, train local actors (especially women) in new techniques, and conduct market analysis to connect producers with better-paying markets.<sup>34</sup>

## Chapter 7: Forestry and Reforestation

Forestry and reforestation are central to Senegal's strategy for combating

desertification, preserving biodiversity, and building resilience to climate change, particularly in its arid and semi-arid zones. The flagship initiative driving activity in this sector is the Great Green Wall, a pan-African project to restore degraded landscapes across the Sahel.<sup>4</sup> This, along with other conservation projects, creates a demand for professionals skilled in forest management, ecosystem restoration, and community engagement.

## Occupational Mapping

Employment in this sector is heavily driven by NGO and government-led projects.

186. **Job Titles:** Core occupations include *Reforestation Project Coordinator*, who manages planting and restoration activities; *Forestry Expert*, providing technical guidance on species selection and silviculture; *Nursery Manager*, responsible for propagating native tree species; *Community Forestry Facilitator*, who works with local populations to establish and manage community forests; and *GIS/Remote Sensing Analyst*, for monitoring forest cover change and project impacts.<sup>30</sup>
187. **Employers:** The primary employers are international and national NGOs such as WeForest, Agronomes et Vétérinaires Sans Frontières (AVSF), and Enda Pronat, which implement large-scale restoration projects.<sup>31</sup> Government agencies, particularly the *Direction des Eaux et Forêts, Chasses et de la Conservation des Sols* (DEFCCS) and the *Agence Sénégalaise de la Reforestation et de la Grande Muraille Verte* (ASERGMV), are key institutional actors.<sup>30</sup> Research bodies like ISRA and CIRAD also contribute expertise.<sup>31</sup>
188. **Skills:** A unique blend of technical and social skills is required. Technical expertise includes forest inventory techniques, nursery management, silvicultural practices, and soil science. Experience with GIS and remote sensing for mapping and monitoring is increasingly important.<sup>30</sup> Crucially, strong community engagement and facilitation skills are non-negotiable, as success depends on the participation and ownership of local communities. Proficiency in local languages, such as Wolof and Pulaar, is often explicitly required in job descriptions to ensure effective communication with pastoralist and farming communities.<sup>31</sup>
189. **Education & Experience:** A Bac+5 (Master's degree) or equivalent experience in forestry, agroforestry, or a related environmental science is the standard

qualification for expert and management roles.<sup>31</sup> Institutions like ENSA in Thiès and UCAD in Dakar offer relevant degree programs.<sup>30</sup> Job postings for roles like Forestry Expert typically require a minimum of five years of relevant professional experience, including project management and coordination.<sup>31</sup>

190. **Geographic Distribution:** Opportunities are concentrated in the project intervention zones, primarily along the trace of the Great Green Wall in the Ferlo region (e.g., Linguère) and in other areas targeted for ecosystem restoration.<sup>31</sup> Management and coordination roles may be based in Dakar with frequent field travel.

191. **Engagement Models:** This sector features a mix of employment models. While project coordinator and expert roles are often full-time contracts, there is a significant reliance on volunteerism to support implementation. Organizations like France Volontaires and Corps Africa play a vital role in mobilizing both national and international volunteers to support the work of partner NGOs and ASERGMV on the Great Green Wall.<sup>36</sup>

## Chapter 8: Water Resource Management

Ensuring a secure and sustainable supply of water for domestic use, agriculture, and industry is a critical development challenge for Senegal, a country with significant water stress.<sup>6</sup> The water resource management sector is therefore a key area for green employment, focusing on infrastructure development, water quality monitoring, and integrated management of this precious resource. The sector is guided by national programs like the

*Programme d'Eau Potable et d'Assainissement du Millénaire* (PEPAM) and supported by international partners including Lux Dev and the Korea International Cooperation Agency (Koica).<sup>38</sup>

### Occupational Mapping

The sector requires a range of engineering, technical, and management expertise.



192. **Job Titles:** Key positions advertised by sector entities include *Ingénieur Hydrologue*, who studies surface water systems; *Ingénieur du Génie Civil*, specializing in the design and construction of water infrastructure like treatment plants and pipelines; *Technicien en Traitement de l'Eau*, who operates and maintains water purification facilities; *Spécialiste en Assainissement*, focused on wastewater and sanitation systems; and *Responsable Suivi-Évaluation*, for monitoring project performance.<sup>39</sup>
193. **Employers:** The institutional landscape includes public bodies, private operators, and engineering firms. The *Office des Lacs et Cours d'Eau* (OLAC), based in Saint-Louis, is a key public agency responsible for managing surface water bodies and frequently recruits for technical and scientific roles.<sup>39</sup> The *Société Nationale des Eaux du Sénégal* (SONES) is the state-owned asset holding company for urban water infrastructure.<sup>38</sup> Since the recent reforms, SEN'EAU is the private operator responsible for the production and distribution of drinking water in urban and peri-urban areas.<sup>41</sup> Engineering consulting firms and construction companies are also major employers for project implementation.
194. **Skills:** Strong engineering and scientific skills are fundamental. This includes hydraulic modeling, water quality analysis, design of water treatment processes (coagulation, filtration, disinfection), and knowledge of sanitation technologies. Proficiency in civil engineering software and GIS for watershed mapping is also important.
195. **Education & Experience:** Engineering degrees (*Bac+5*) from institutions like the *École Polytechnique de Thiès* (EPT) or the *Université Gaston Berger* (UGB) in Saint-Louis are standard for engineering roles.<sup>40</sup> For technician roles, vocational diplomas are required. A notable initiative is the "École des plombiers" (School for Plumbers), a three-year apprenticeship program run in partnership between SEN'EAU and the *Centre Sectoriel de Formation Professionnelle du Bâtiment et des Travaux Publics* (CSFP-BTP). This program provides a CAP (*Certificat d'Aptitude Professionnelle*) in water network installation, creating a direct pipeline of skilled vocational talent for the sector.<sup>41</sup> Other organizations like Bioforce also offer specialized training in Water, Hygiene, and Sanitation (WASH) project management in Dakar.<sup>43</sup>
196. **Geographic Distribution:** While policy and engineering design roles are concentrated in Dakar, operational and maintenance jobs are distributed across the country at treatment plants, pumping stations, and along distribution networks. The headquarters of OLAC in Saint-Louis makes it a regional hub for

water resource management expertise.<sup>39</sup>

## Chapter 9: Waste Management and Circular Economy

Senegal is undergoing a paradigm shift in its approach to waste, moving from a traditional "collect and dispose" model to a more integrated and sustainable system focused on waste reduction, valorization, and the principles of a circular economy. This transition is propelled by strong policy drivers, including the national "Zero Waste Programme," the 2020 Law on Plastic Waste, and the Project for the Promotion of Integrated Management and Economics of Solid Waste in Senegal (PROMOGED), which notably includes the complex restructuring of the Mbeubeuss landfill near Dakar.<sup>4</sup> This shift is creating a new generation of green jobs focused not just on sanitation, but on resource recovery and new business models.

### Occupational Mapping

The emerging circular economy demands a new set of skills and roles, with a unique focus on formalizing and empowering the existing informal workforce.

197. **Job Titles:** Opportunities in this sector include *Recycling Program Coordinator*, who designs and manages collection and sorting systems; *Waste Valorization Specialist*, with expertise in areas like composting, anaerobic digestion, or waste-to-energy technologies; *Circular Economy Consultant*, who advises businesses on adopting circular models; and *Environmental Health and Safety (EHS) Officer*, crucial for ensuring safe working conditions in recycling and processing facilities.<sup>4</sup>
198. **Employers:** Employers include the government's waste management unit (UCG), private companies operating in waste collection and recycling, municipalities, and a growing number of NGOs and social enterprises focused on circular economy solutions.
199. **Skills:** Technical skills include knowledge of different waste streams (plastics, organics, e-waste), recycling technologies, and composting processes. Business skills are also critical, including logistics for collection networks, business

planning for recycling enterprises, and marketing for valorized products.

200. **Education & Experience:** Educational pathways are diverse. A Master's degree in Environmental Management or a related field is common for consultant and management roles.<sup>46</sup> The

*Université Rose Dieng France-Sénégal (URDFS)* offers a specific *Licence professionnelle en gestion et valorisation des déchets*, which directly prepares graduates for roles like exploitation manager for waste facilities or consultant in waste valorization.<sup>48</sup> The

*École Supérieure d'Electricité, du Bâtiment et des Travaux Publics (ESEBAT)* also offers a Master's program covering integrated solid waste management.<sup>49</sup>

A defining feature of Senegal's waste sector transition is the explicit effort to integrate and formalize the informal sector, particularly the thousands of waste pickers (*récupérateurs*) who form the backbone of the current recycling system. The collaboration between PAGE, WIEGO, and the ILO to support the establishment of a formal waste pickers' cooperative at the Mbeubeuss landfill is a landmark example of this approach.<sup>6</sup> This social and economic engineering creates a unique set of green job opportunities that are as much about community development as they are about technical waste management.

These roles include:

201. **Cooperative Manager:** Professionals with skills in business administration and cooperative governance to manage the newly formed entities.

202. **Financial Literacy Trainer:** Experts to provide training on savings, credit, and financial management to cooperative members.

203. **Occupational Health and Safety (OHS) Trainer:** Specialists to train workers on safe handling of waste, use of personal protective equipment (PPE), and risk reduction, directly addressing a major challenge in the informal sector.

204. **Market Access Facilitator:** Business development professionals who can connect the cooperatives with industrial buyers for their sorted materials (plastics, metals, etc.), ensuring a stable revenue stream.

This focus demonstrates that the transition to a circular economy in Senegal is not merely a technical challenge but a profound social one. Workforce development in this sector must therefore go beyond engineering and environmental science to include training in cooperative management, social protection mechanisms, OHS, and entrepreneurship, targeting the skills uplift of the existing informal workforce to ensure a truly just and inclusive transition.

## Chapter 10: Green Infrastructure and Sustainable Construction

The construction sector in Senegal is beginning to embrace sustainability, driven by a growing awareness of the environmental impact of buildings and supported by foundational policy work. Early initiatives by PAGE helped develop guidelines for the application of technical norms on sustainable construction materials and energy efficiency, including a demonstration project at the polytechnic school in Thiès.<sup>5</sup> This has paved the way for a niche but growing market for green buildings that prioritize energy efficiency, water conservation, and the use of local, low-impact materials.

### Occupational Mapping

Employment in this sub-sector is concentrated among pioneering firms and specialized professionals who are leading the market towards more sustainable practices.

271. **Job Titles:** Key roles include *Sustainable Building Designer/Architect*, who integrates passive design principles and green technologies into building plans; *Green Construction Project Manager*, who oversees the implementation of sustainable projects, ensuring adherence to green standards; *Environmental Building Certification Coordinator*, a specialist who manages the process of obtaining green building certifications like EDGE (Excellence in Design for Greater Efficiencies); and *Sustainable Materials Sourcing Specialist*, who identifies and procures local and environmentally friendly materials like earth bricks or recycled components.<sup>5</sup>
272. **Employers:** The most prominent employers are innovative architectural and construction firms that have made sustainability their core business. Companies like **Elementerre**, **Worofila**, and **DNA** are leaders in this space, specializing in techniques like raw earth brick construction, bioclimatic design, and the integration of renewable energy.<sup>50</sup> While these are specialized firms, larger, more traditional construction companies like Vinci are also increasingly hiring for roles such as *Ingénieur QHSE Chantier* (Quality, Health, Safety, and Environment Engineer for

Construction Sites), indicating a broader industry trend towards integrating environmental and safety standards into all projects.<sup>19</sup>

273. **Skills:** Professionals require expertise in green building principles, including passive solar design, natural ventilation, thermal insulation, and water-efficient systems. Knowledge of sustainable materials, particularly local options like compressed earth blocks, is a key advantage. Familiarity with green building certification systems like EDGE is a valuable and marketable skill. Proficiency in architectural design software (e.g., AutoCAD, Revit) combined with energy modeling tools is also important.
274. **Education & Experience:** An academic background in architecture or civil engineering is standard. Specialized training or certifications in sustainable design are highly beneficial. Experience working on projects that have successfully implemented green building techniques is a significant differentiator for job seekers.
275. **Geographic Distribution:** While design offices are primarily in Dakar, construction projects can be located throughout the country, including private residences, NGO buildings, and community centers that are increasingly opting for sustainable designs.<sup>51</sup>

The growth of this sector is driven by both environmental concerns and economic viability. Green buildings offer long-term savings on energy and water bills, making them an attractive proposition. Furthermore, companies like DNA actively contribute to local green job creation by training and employing local residents in specialized techniques like earth brick manufacturing, creating a positive feedback loop of skills development and sustainable construction.<sup>51</sup>

## Chapter 11: Sustainable Transport and Mobility

Urban mobility in Senegal, particularly in the congested capital of Dakar, is undergoing a major transformation towards more sustainable modes of transport. This shift is driven by the urgent need to reduce traffic congestion, cut air pollution, and lower greenhouse gas emissions. The World Bank's CCDR explicitly identifies the new electric Bus Rapid Transit (BRT) system in Dakar as a cornerstone initiative that can significantly improve public health, enhance urban mobility, and drive economic productivity.<sup>10</sup> This and other related projects are creating a new and specialized field

of green employment in sustainable urban transport.

## Occupational Mapping

This is an emerging sector where job growth is tightly linked to large-scale, internationally-funded public infrastructure projects.

25. **Job Titles:** The development of sustainable transport systems requires a range of new professional profiles, including *Sustainable Transport Planner*, who designs integrated urban mobility networks emphasizing public and non-motorized transport (walking, cycling); *EV (Electric Vehicle) Infrastructure Technician*, responsible for the installation and maintenance of charging stations for the BRT and other electric vehicles; *Urban Mobility Data Analyst*, who uses data to optimize transport flows and service planning; and *BRT Operations Manager*, who oversees the day-to-day functioning of the new bus system.
26. **Employers:** The primary employers in this sector are public transport authorities, municipal governments (especially the City of Dakar), the Ministry of Infrastructure and Land Transport, and the private companies contracted to build and operate these new systems. Engineering and planning consultancies also play a significant role in the design phase.
27. **Skills:** Professionals need expertise in urban planning, transport modeling software, and traffic engineering. For technical roles, skills in electrical engineering and EV charging technology are essential. Data analysis skills are becoming increasingly crucial for managing modern, data-rich transport systems. Project management skills are also vital for overseeing the complex implementation of large infrastructure projects.
28. **Education & Experience:** A background in civil engineering, urban planning, or transport economics is typical for planning and management roles. Electrical engineering or specialized vocational training is required for technical infrastructure positions. As this is a relatively new field in Senegal, experience gained on similar projects internationally can be a significant advantage.
29. **Geographic Distribution:** Currently, employment opportunities in sustainable transport are overwhelmingly concentrated in the Dakar metropolitan area, which is the focus of the BRT project and other major urban mobility investments. As other secondary cities grow, similar opportunities may emerge in the future.

## Chapter 12: Climate Change Adaptation and Resilience

Given Senegal's high vulnerability to climate impacts—including coastal erosion, rising temperatures, and decreased precipitation—building resilience is not an option but a necessity.<sup>6</sup> The World Bank's CCDR places a strong emphasis on adaptation, noting that such measures can significantly reduce climate-induced poverty and safeguard development gains.<sup>7</sup> This focus on adaptation has created a demand for professionals who can assess climate risks and design projects that strengthen the resilience of communities and ecosystems.

### Occupational Mapping

Adaptation roles are typically interdisciplinary and embedded within broader development and environmental projects.

30. **Job Titles:** Key occupations in this field include *Climate Risk Assessment Specialist*, who analyzes climate data and models to identify vulnerabilities; *Community Resilience Coordinator*, who works directly with local communities to develop and implement adaptation plans; *Vulnerability Analyst*, who assesses the social and economic exposure of different populations to climate shocks; and *Adaptation Project Manager*, who oversees the implementation of projects focused on resilience, such as coastal protection or drought management.<sup>53</sup>
31. **Employers:** The main employers are international development organizations like the United Nations Development Programme (UNDP), which hires for roles like *Chargé(e) de Programmes Environnement* with a focus on adaptation.<sup>53</sup> Government bodies, particularly the Ministry of Environment and Sustainable Development and its Directorate of Climate Change <sup>27</sup>, are central to national adaptation planning. NGOs and specialized environmental consultancies also hire experts for adaptation-focused projects.<sup>54</sup>
32. **Skills:** These roles require a powerful combination of skills. Technical skills include climate data analysis, understanding of climate models, and knowledge of specific adaptation strategies (e.g., mangrove restoration for coastal defense, water harvesting techniques). Social science skills are equally critical, including



participatory assessment methods, stakeholder engagement, and community mobilization. Strong project management, monitoring and evaluation (M&E), and reporting skills are essential, especially for roles within donor-funded projects.<sup>53</sup>

33. **Education & Experience:** A Master's degree in Environmental Science, Climate Change, Geography, or Development Studies is a common qualification. Experience in managing development projects, particularly at the community level, is highly valued. For example, a UNDP program officer role requires at least five years of experience in adaptation, sustainable resource management, and project management.<sup>53</sup>
34. **Geographic Distribution:** While policy and program management roles are based in Dakar, the implementation of adaptation projects occurs across the country's most vulnerable zones: coastal areas at risk of erosion and sea-level rise, and arid inland regions facing drought and food insecurity.

These professionals are at the forefront of translating climate science into practical action, working to ensure that Senegal's development path is not derailed by the escalating impacts of a changing climate.

## Chapter 13: Environmental Monitoring and Conservation

The foundation of effective environmental management is robust monitoring and conservation. This sub-sector encompasses the scientific and technical work required to assess the state of ecosystems, track pollution, manage protected areas, and ensure that development projects comply with environmental regulations. It is a field characterized by a strong demand for specialized technical expertise and a significant market for consultancy services.

### Occupational Mapping

This sector provides opportunities for field scientists, technicians, and expert consultants.

35. **Job Titles:** Common roles include *Biodiversity Monitoring Specialist*, who

conducts surveys of flora and fauna; *Ecosystem Assessment Coordinator*, who evaluates the health and services of ecosystems; *Pollution Monitoring Technician*, responsible for collecting and analyzing air, water, and soil samples; *Conservation Project Manager*, who leads initiatives to protect specific species or habitats; *Protected Area Manager*; and *Environmental Impact Assessment (EIA) Consultant*.<sup>57</sup>

36. **Employers:** Employers include government agencies like the National Parks Directorate and the Ministry of Environment, research institutions (e.g., IFAN, ISE), and conservation NGOs. A significant and growing source of employment is the private consulting sector. Firms like **Sylvatrop Consulting** have carved out a niche by providing high-tech environmental services to large-scale development projects in the mining, oil and gas, infrastructure, and renewable energy sectors.<sup>57</sup>
37. **Skills:** Strong scientific and technical skills are essential. These include species identification, ecological survey methods, laboratory analysis techniques, and data management. A critical skill in high demand is the ability to conduct Environmental and Social Impact Assessments (ESIAs) according to national and international standards (e.g., World Bank, IFC). Digital skills are increasingly vital, with consultancies like Sylvatrop leveraging advanced tools such as **drones for aerial mapping and monitoring, GIS for spatial analysis, and LiDAR for detailed terrain modeling**.<sup>57</sup>
38. **Education & Experience:** A degree in Biology, Ecology, Environmental Science, or a related field is the standard entry point. For specialized roles like EIA consulting, advanced degrees (Master's or PhD) and specific accreditation are often required. Experience with modern monitoring technologies is a significant asset.
39. **Engagement Models:** This sector has a robust market for freelance and consultancy work. Large projects often outsource their environmental monitoring and EIA requirements to specialized firms, creating a demand for independent consultants and technical experts who can be contracted on a project basis.<sup>28</sup>
40. **Geographic Distribution:** Field-based roles are located across the country in national parks, conservation areas, and at the sites of major development projects. Consulting roles are typically based in Dakar but involve extensive fieldwork.

The transition to a green economy requires not only political will and technical skill but also massive financial investment. The World Bank's CCDR estimates that climate action in Senegal will require financing of US\$8.2 billion between 2025 and 2030 alone.<sup>7</sup> Mobilizing this capital, particularly from the private sector, is giving rise to a new and sophisticated field of green employment: green finance. This sub-sector is focused on developing and channeling financial products and services towards sustainable projects.

## Occupational Mapping

This is a nascent but high-potential field, with jobs emerging at the intersection of finance and sustainability.

41. **Job Titles:** Emerging roles include *Environmental, Social, and Governance (ESG) Analyst*, who evaluates the sustainability performance of companies and investments; *Green Project Finance Analyst*, who structures financing for renewable energy or green infrastructure projects; *Carbon Accounting and Verification Specialist*, who measures and validates greenhouse gas reductions for carbon market projects; and *Sustainable Investment Advisor*, who guides clients towards green investment opportunities.<sup>59</sup>
42. **Employers:** The primary job market is within financial institutions. This includes commercial banks like **Ecobank** and **La Banque Agricole**, which are beginning to develop green finance products.<sup>60</sup> Development finance institutions like the *Fonds Souverain d'Investissements Stratégiques* (FONSIS) are key players in financing larger strategic projects.<sup>61</sup> Impact investment funds, such as **Teranga Capital**, are also actively investing in SMEs with positive social and environmental impacts.<sup>62</sup> In addition, specialized advisory firms and the finance departments of large corporations are potential employers.
43. **Skills:** Professionals in this field need a dual competency in finance and environmental science. Key skills include financial modeling, risk analysis, project finance structuring, and a deep understanding of ESG criteria and environmental regulations. Knowledge of carbon accounting standards and green bond principles is a growing requirement.
44. **Education & Training:** A background in finance, economics, or business is

typical, often supplemented by a Master's degree or certification in sustainable finance or environmental management. Recognizing the skills gap in this area, a crucial capacity-building initiative has been launched: the "**Green Banking Sénégal**" program. This project, a collaboration between Germany's RENAC and GIZ, and Senegal's BMN and *Observatoire de la Qualité des Services Financiers* (OQSF), provides targeted training for professionals from banks, microfinance institutions, and insurance companies on how to appraise and finance green energy projects.<sup>59</sup> This program is a model for building the specialized human capital needed to unlock the flow of private finance for the green transition.

45. **Geographic Distribution:** Opportunities in green finance are almost exclusively located in the capital, Dakar, the country's undisputed financial center.

The growth of this sector is critical. As the World Bank notes, mobilizing private capital is indispensable for meeting Senegal's climate goals.<sup>8</sup> The professionals in this field will be the architects of the financial mechanisms that channel international funds like the JETP and domestic savings into the bankable green projects that will define Senegal's future.

## Chapter 15: Eco-Tourism and Sustainable Tourism

Eco-tourism presents a significant opportunity for Senegal to leverage its rich natural and cultural heritage for economic development while simultaneously creating incentives for conservation. This sub-sector focuses on providing tourism experiences that are low-impact, community-based, and contribute directly to the protection of the environment. While not yet a dominant part of the green job market, it holds potential for growth in specific ecological niches.

### Occupational Mapping

This sector is characterized by small-scale enterprises and community-led initiatives, often requiring a blend of hospitality, guide, and conservation skills.

276. **Job Titles:** Common roles include *Eco-tourism Guide*, who leads tours with a

focus on natural history and cultural interpretation; *Sustainable Tourism Operations Manager*, responsible for running lodges or tour operations with minimal environmental footprint; *Community-based Tourism Coordinator*, who helps local communities develop and manage their own tourism enterprises; and *Conservation-focused Hospitality Manager*, who integrates conservation activities into the guest experience.<sup>63</sup>

277. **Employers:** Employers are typically small, privately-owned eco-lodges, tour operators, and community associations or cooperatives. NGOs working in conservation often play a role in facilitating the development of these enterprises as an alternative livelihood for local populations.
278. **Skills:** A deep knowledge of local ecology, biodiversity, and culture is essential for guide roles. Management positions require skills in sustainable business operations, including waste management, water conservation, and energy efficiency. Strong interpersonal and cross-cultural communication skills are paramount for all roles. Language skills, including French, English, and local languages, are a major asset.
279. **Education & Experience:** While formal degrees in tourism or hospitality are beneficial, practical experience and local knowledge are often more highly valued. Vocational training in guiding, hospitality, and business management is relevant. Many successful entrepreneurs in this sector learn through experience and mentorship. Job portals show a demand for general tourism roles, but specialized eco-tourism positions are less frequently advertised and often filled through local networks.<sup>63</sup>
280. **Geographic Distribution:** Opportunities are concentrated in areas of high natural value, such as the **Sine-Saloum Delta** (a UNESCO Biosphere Reserve), the **Casamance region** with its unique riverine ecosystems, the **Niokolo-Koba National Park**, and coastal areas with marine biodiversity.

## Chapter 16: Clean Cooking Solutions

The transition to clean cooking solutions is a critical green economy sector in Senegal, with profound impacts on public health, gender equality, and the environment. The heavy reliance on traditional biomass (charcoal and wood) for cooking contributes to deforestation and causes severe indoor air pollution, which disproportionately affects women and children. Recognizing this, Senegal has

committed to accelerating the adoption of clean cooking solutions, aiming to increase the annual growth rate of access from 3.25% to an ambitious 11.3%.<sup>18</sup> This commitment is creating a market for new technologies and the professionals needed to deploy them.

## Occupational Mapping

Jobs in this sector are focused on technology dissemination, community engagement, and developing sustainable fuel supply chains.

- 281. **Job Titles:** Key roles include *Clean Cookstove Technology Specialist*, who understands the design and performance of various improved cookstoves (e.g., gas, high-efficiency biomass, solar); *Household Energy Efficiency Consultant*, who advises households on clean cooking options; *Biomass Fuel Sustainability Coordinator*, who works on creating sustainable supply chains for biomass pellets or briquettes; and *Community Energy Program Facilitator*, who leads awareness campaigns and distribution efforts in local communities.
- 282. **Employers:** Employment is found within social enterprises that manufacture or distribute clean cookstoves, NGOs running public health and environment programs, and private companies in the Liquefied Petroleum Gas (LPG) sector.
- 283. **Skills:** Technical knowledge of different cooking technologies and their benefits is essential. Strong sales, marketing, and distribution skills are needed to build effective supply chains to reach last-mile consumers. Community mobilization and communication skills are crucial for driving behavior change and encouraging the adoption of new cooking habits.
- 284. **Education & Experience:** A background in public health, environmental science, or business development can be relevant. Experience in community-based sales and marketing or working on public health campaigns is highly advantageous.
- 285. **Geographic Distribution:** While strategic and management roles may be in Dakar, the majority of jobs, particularly in sales, distribution, and community facilitation, are distributed nationwide, with a strong focus on both urban and rural households.

## Chapter 17: Environmental Education and Awareness

A successful green transition requires not only new technologies and policies but also a fundamental shift in public mindset and professional capacity. The environmental education and awareness sector is dedicated to building this human capital, fostering environmental literacy among the general public, and providing specialized training for professionals. This field is essential for ensuring the long-term sustainability of all other green economy initiatives.

### Occupational Mapping

These roles are focused on training, communication, and capacity building across various institutions.

286. **Job Titles:** Professionals in this field work as *Sustainability Training Specialists*, who design and deliver courses for corporate or public sector clients; *Environmental Awareness Program Coordinators*, who manage public outreach campaigns for NGOs or government agencies; *Capacity Building Facilitators*, who train community groups or other organizations on environmental topics; and *Curriculum Developers*, who create environmental education materials for schools and training centers.<sup>5</sup>
287. **Employers:** Opportunities exist within NGOs, the corporate social responsibility (CSR) departments of private companies, government ministries (like the Ministry of Environment), and educational institutions themselves. International organizations also support and hire for these roles.
288. **Skills:** Excellent communication, presentation, and facilitation skills are paramount. Expertise in instructional design and curriculum development is required for training roles. A strong understanding of a wide range of environmental issues is necessary to create accurate and compelling content.
289. **Education & Experience:** A degree in environmental science, education, communication, or a related field is a common starting point. Experience in teaching, training, or public communication is highly valued. There is a notable and growing demand for internships in this area, providing a key entry point for young professionals. For instance, the NGO ALIMA offers a *Stage Assistant(e)*



*Action Environnementale* in Dakar, focused on documenting and communicating the organization's environmental action, requiring skills in content creation, data analysis, and an interest in climate issues.<sup>64</sup> Similarly, research internships, such as one offered by ESP/UCAD on sustainable practices in healthcare, provide opportunities for students to contribute to knowledge generation in the sector.<sup>65</sup>

290. **Geographic Distribution:** While many coordination and development roles are based in Dakar, the delivery of training and awareness programs happens nationwide, wherever partner organizations and target communities are located.

## Chapter 18: Sustainable Land Management

Sustainable Land Management (SLM) is a critical sector that directly addresses the challenges of land degradation, desertification, and soil erosion, which threaten agricultural productivity and pastoral livelihoods in many parts of Senegal. This field is closely intertwined with sustainable agriculture and forestry but focuses specifically on the foundational resource: the land itself. The goal of SLM is to maintain the long-term health and productivity of landscapes, ensuring the continued provision of ecosystem services.

### Occupational Mapping

SLM professionals are experts in soil science, land use planning, and restoration ecology.

291. **Job Titles:** Key occupations include *Soil Conservation Specialist*, who designs and implements measures to prevent soil erosion; *Land Use Planning Consultant*, who works with communities and authorities to develop sustainable land use plans; *Rangeland Management Coordinator*, specializing in the sustainable management of pastoral lands to prevent overgrazing; and *Erosion Control Technician*, who oversees the implementation of physical structures and vegetative cover to stabilize soil.
292. **Employers:** Employment is typically found within government agencies responsible for agriculture and environment, research institutions like ISRA that

study soil science, and NGOs implementing landscape-level restoration projects, particularly in the Sahelian and sub-Saharan zones of the country.

293. **Skills:** A deep understanding of soil science, hydrology, and ecology is fundamental. Technical skills include soil analysis, watershed management techniques, and the design of erosion control measures. Expertise in participatory land use planning and conflict resolution (e.g., between farmers and herders) is also highly valuable. GIS and remote sensing are essential tools for mapping land degradation and planning interventions.
294. **Education & Experience:** A degree in soil science, geography, agronomy, or environmental science is the standard educational background. Advanced degrees may be required for research and senior consulting roles. Practical field experience in rural and arid environments is essential.
295. **Geographic Distribution:** Opportunities are concentrated in the regions most affected by land degradation, including the pastoral zones of the Ferlo, the agricultural areas of the Peanut Basin, and other regions where unsustainable land use practices are prevalent.

## Part III: Cross-Cutting Workforce Dynamics and Development

The sectoral analysis reveals a rich tapestry of individual job opportunities. However, to formulate a coherent national workforce strategy, it is essential to synthesize these findings and identify the cross-cutting dynamics that define Senegal's green economy as a whole. This section examines the aggregate skills in demand, the capacity of the educational ecosystem to meet this demand, the prevailing compensation and employment models, and the geographic distribution of opportunities.

### Chapter 19: Skills in Demand and Competency Gaps

Across the diverse sub-sectors of Senegal's green economy, a consistent set of technical, digital, and interpersonal competencies emerges as critical for professional success. These skills define the modern green professional and highlight key areas

for curriculum development and professional training.

### Aggregate Technical, Digital, and Soft Skills

296. **Technical Skills:** The most frequently required technical skills are sector-specific but demonstrate a clear need for applied scientific and engineering knowledge. These include **photovoltaic (PV) system design and installation** for the energy sector, **Geographic Information Systems (GIS) and remote sensing** for agriculture, forestry, and environmental monitoring, **Environmental Impact Assessment (EIA) methodology** for consulting and infrastructure projects, **water quality testing and analysis** for the water sector, and **sustainable farming practices** (agroecology, soil conservation) for agriculture.<sup>20</sup>
297. **Digital Skills:** The green economy is increasingly data-driven. Beyond GIS, there is a demand for proficiency in **data analysis software** to interpret monitoring results, **environmental modeling tools** (e.g., for hydrology or energy systems), **project management platforms** like MS Project to handle complex timelines and resources, and **Computer-Aided Design (CAD) software** such as AutoCAD for engineering and construction roles.<sup>20</sup>
298. **Soft Skills:** Interpersonal and managerial capabilities are consistently cited as being as important as technical knowledge. **Project management** is arguably the most sought-after soft skill, appearing in job descriptions for engineers, conservationists, and development workers alike.<sup>20</sup>
- Stakeholder and community engagement** is another critical competency, essential for projects in forestry, agriculture, and adaptation that rely on local participation. Finally, **language proficiency** is a key differentiator. Fluency in **French** is standard, but **English** is increasingly required for roles involving international partners, finance, and technology, while knowledge of local languages like **Wolof and Pulaar** is indispensable for effective fieldwork and community facilitation.<sup>20</sup>

### The Rise of the "Hybrid Professional"

A deeper analysis of these required competencies reveals a significant trend: the

demand for the "hybrid professional." The nature of green projects in Senegal—often interdisciplinary, donor-funded, and community-focused—means that purely technical specialists are less effective than those who can bridge disciplinary divides. An engineer managing a renewable energy project must also be adept at budget management and contract negotiation.<sup>20</sup> A forestry expert leading a reforestation initiative needs strong facilitation and community mobilization skills, often in local languages, to succeed.<sup>31</sup> A UNDP environmental program officer must combine knowledge of climate change with robust skills in monitoring and evaluation (M&E), donor reporting, and communication.<sup>53</sup>

Job descriptions increasingly blend these competencies, seeking candidates who possess both technical depth and managerial breadth. This has profound implications for workforce development. It signals that educational institutions must evolve beyond siloed training programs. To meet market demand, Senegal needs to produce graduates who are not just engineers, but engineer-managers; not just scientists, but scientist-communicators. The future of the green workforce lies in professionals who can seamlessly integrate technical expertise with project management, financial literacy, and cross-cultural communication skills.

## **Chapter 20: The Educational and Professional Development Ecosystem**

Senegal possesses a solid foundation of educational and vocational institutions capable of supporting the green economy. However, the rapid evolution of the sector and the emergence of new, specialized roles present both challenges and opportunities for this ecosystem. Aligning training curricula with the specific, market-driven skills identified in the previous chapter is the central task for ensuring a sustainable talent pipeline.

### **Mapping of Institutions and Offerings**

299. **Universities:** Higher education is anchored by major public universities. The *Université Cheikh Anta Diop* (UCAD) in Dakar is a hub for environmental sciences, with its *Institut des Sciences de l'Environnement* (ISE) and faculties offering

Master's programs in fields like Environmental Management and Agroforestry.<sup>30</sup> The

*Université Iba Der Thiam* (UIDT) in Thiès is home to the prestigious *Ecole Nationale Supérieure d'Agriculture* (ENSA), the primary training ground for the country's agronomists and forestry engineers.<sup>33</sup> The *Université Gaston Berger* (UGB) in Saint-Louis also offers relevant programs in engineering and environmental sciences.<sup>40</sup> Private institutions like Supdeco are also entering the space with offerings like a Bachelor's in Renewable Energy Management.<sup>66</sup>

300. **Polytechnics and Engineering Schools:** The *École Supérieure Polytechnique* (ESP) in Dakar and the *École Polytechnique de Thiès* (EPT) are key institutions for training engineers in fields relevant to green infrastructure, water management, and energy.<sup>40</sup>

301. **Vocational Training Centers:** These institutions are critical for producing the skilled technicians who form the backbone of many green sectors. The *Institut Supérieur d'Enseignement Professionnel de Thiès* (ISEP-Thiès) offers a highly relevant diploma for Solar Technicians.<sup>22</sup> In the water sector, the partnership between SEN'EAU and the *Centre Sectoriel de Formation Professionnelle du Bâtiment et des Travaux Publics* (CSFP-BTP) to create the "École des plombiers" is a model of industry-led vocational training.<sup>41</sup> The *Centre Sectoriel de Formation Professionnelle aux Métiers des Industries Agro-alimentaires* (CSFP-IAA) provides training relevant to the agricultural value chain.<sup>67</sup>

## Analysis of Gaps and Opportunities

While this institutional landscape provides a strong base, gaps exist between current offerings and the emerging needs of the green job market. The analysis of skills in demand suggests a need for more specialized, market-aligned training programs. For example, while general environmental management degrees are available, there is a clear opportunity to develop dedicated Master's programs in high-demand fields like **Circular Economy Management, Carbon Accounting, and Climate Finance.**

The "**Green Banking Sénégal**" program serves as an excellent model for how to fill

these gaps.<sup>59</sup> This initiative is not a traditional, multi-year degree but a targeted, professional training program designed in direct response to a specific market need—the lack of capacity within financial institutions to evaluate and fund green projects. By bringing together international experts (RENAC, GIZ) and key local institutions (BMN, OQSF), it delivers precisely the skills needed by the market, to the professionals who need them. This model of agile, demand-driven, and partnership-based training could be replicated to address skills gaps in other emerging sub-sectors, such as ESG analysis or sustainable supply chain management.

## Chapter 21: Compensation and Employment Models

The structure of employment and compensation in Senegal's green economy is as varied as the sectors themselves. It ranges from stable, formal employment in public utilities and large corporations to the dynamic, project-based world of consulting and the vital, passion-driven contributions of volunteers.

### Analysis of Compensation

Publicly available, verified salary data for green jobs in Senegal is limited. However, by analyzing job advertisements, project budgets, and internship postings, it is possible to establish some indicative ranges.

- 302. **Formal Salaried Roles:** Compensation for formal roles varies widely based on sector, employer type (public vs. private, national vs. international), and experience level. Senior engineering and project management roles with international firms or on donor-funded projects command the highest salaries, reflecting the high-level skills and experience required.
- 303. **Consultancy and Freelance Fees:** Consultants and freelancers, particularly in fields like Environmental Impact Assessment (EIA) or specialized engineering, typically work on a daily or project-based fee structure. These fees are negotiated based on the consultant's experience, the complexity of the task, and the client's budget.
- 304. **Internship Stipends:** Internships are a key entry point for young professionals.

Stipends vary, but a benchmark can be seen in the offer from the NGO ALIMA for its Environmental Action Assistant intern in Dakar, which includes a monthly stipend of 150,000 XOF (approximately €230) and health coverage.<sup>64</sup> A research Master's internship with ESP/UCAD offered a higher indemnity of around €600/month, likely reflecting a higher level of required expertise.<sup>65</sup>

## Analysis of Engagement Models

305. **Full-Time Employment:** Stable, full-time positions are most common in established institutions like government ministries, public agencies (OLAC, SONES), the national utility (Senelec), and large private companies.
306. **Contract/Consultancy:** Project-based contracts are the dominant model in fields driven by specific, time-bound initiatives. This is particularly true for roles in project management, EIA consulting, and technical assistance on development projects funded by partners like the World Bank or FAO.<sup>34</sup>
307. **Freelance/Gig Work:** The freelance model is growing, especially for roles that can be delivered digitally. This includes opportunities for GIS specialists, data analysts, graphic designers, and environmental advisors who can serve both domestic and international clients from Senegal via online platforms.<sup>57</sup>
308. **Volunteerism:** The non-profit sector, especially in conservation and reforestation, relies heavily on volunteers. Organizations like France Volontaires, SUCO, and Corps Africa mobilize both national and international volunteers to support the implementation of projects like the Great Green Wall, providing invaluable manpower and fostering cross-cultural exchange.<sup>36</sup>

## Market Access Channels

Accessing these diverse opportunities requires navigating a variety of platforms and networks. Key channels include:

- **National Job Portals:** Websites like Emploisenegal.com, Optioncarriere.sn, and Senjob.com are primary sources for a wide range of positions, and can be filtered for keywords like "environnement," "énergie renouvelable," or "agriculture



durable".<sup>19</sup>

- **International Development Portals:** Platforms like Devex and ReliefWeb are essential for finding consultancy and project management opportunities with international NGOs and development agencies.
- **Direct Institutional Websites:** Major employers like the UNDP, World Bank, and FAO post vacancies directly on their career pages.<sup>34</sup>
- **NGO and Volunteer Platforms:** Organizations like SUCO and France Volontaires have dedicated portals for their volunteer and salaried positions.<sup>36</sup>
- **Professional and Social Networks:** In a relationship-driven market, professional networks like LinkedIn and sector-specific social media groups are increasingly important channels for discovering unadvertised opportunities and making connections.

## Chapter 22: Geographic and Regional Opportunity Hotspots

While the green economy is a national endeavor, employment opportunities are not uniformly distributed. They are concentrated in geographic hotspots, each with its own distinct character defined by its economic function, ecological context, and institutional landscape.

- **Dakar: The Policy and Financial Hub:** The capital region is the undisputed nerve center of the green economy. It hosts the headquarters of most government ministries, international development partners, financial institutions, and consulting firms. Consequently, Dakar is the primary location for jobs in **policy development, green finance, project management, high-level consulting, and corporate headquarters**. Job postings for roles with the UNDP, World Bank, and major NGOs are overwhelmingly based in Dakar.<sup>19</sup>
- **Thiès: The Industrial and Technical Hub:** The Thiès region has emerged as a critical hub for the technical and industrial aspects of the green transition. It is home to the **Taïba Ndiaye wind farm**, one of the largest renewable energy projects in West Africa, creating a concentration of jobs in wind energy operations and maintenance.<sup>21</sup> The region's industrial base also makes it a focal point for jobs in **energy efficiency and clean production**. Critically, Thiès is also a center for human capital development, hosting key training institutions like the **ENSA**

(agriculture, forestry) and ISEP-Thiès (renewable energy technicians), creating a synergistic ecosystem of training and employment.<sup>22</sup>

- **Saint-Louis: The Northern Water and Agriculture Hub:** Located in the Senegal River Delta, Saint-Louis is the key regional center for the north of the country. It is the headquarters of the **Office des Lacs et Cours d'Eau (OLAC)**, making it the primary hub for jobs in **surface water resource management**.<sup>39</sup> Its proximity to the Senegal River Valley, a major agricultural zone, also makes it a center for programs related to **sustainable irrigation, agriculture, and pastoralism**.
- **Casamance (Ziguinchor): The Biodiversity and Agroecology Hub:** The southern region of Casamance, with its unique climate and rich biodiversity, is a focal point for projects in **agroforestry, sustainable fisheries, marine conservation, and eco-tourism**. Development projects, such as the FAO's post-harvest fisheries initiative, are often targeted here, creating localized demand for specialists in these fields.<sup>34</sup>
- **Rural & Remote Sites:** Many green jobs are, by their nature, located in rural and remote areas. **Reforestation projects** along the Great Green Wall, **community-based conservation programs** in and around national parks, and the deployment of **decentralized renewable energy systems** (e.g., mini-grids, solar home systems) create opportunities for field technicians, community facilitators, and project staff far from the major urban centers.<sup>12</sup>
- **Digital/Remote: The Transcendent Hub:** A new and emerging geography of opportunity is the digital space. The rise of reliable internet connectivity allows Senegalese professionals with skills in **GIS, data analysis, environmental advisory, and virtual project management** to serve both domestic and international clients remotely. This creates the potential for high-value service jobs that are not tied to a physical location, allowing talent from any region to participate in the global green economy.<sup>57</sup>

## Part IV: Strategic Outlook and Recommendations

Senegal's green economy is on a dynamic growth trajectory, propelled by a confluence of policy, investment, and technological change. This concluding section provides a forward-looking analysis of the emerging roles that will define the next

phase of this transition and offers a set of actionable, strategic recommendations for key stakeholders. These recommendations are designed to address the identified skills gaps, strengthen the workforce development ecosystem, and ensure that Senegal can fully capitalize on its green employment potential.

## Chapter 23: Emerging Roles and Future Trends

Beyond the established roles, the evolution of finance, technology, and policy is creating a new frontier of green jobs. These emerging occupations are currently on the periphery but are poised for significant growth as Senegal's green economy matures.

- **Roles Driven by Green Finance:** The imperative to mobilize billions of dollars in climate finance, as highlighted by the CCDR and JETP, will create a strong demand for financial specialists. The CCDR's recommendation to pilot innovative instruments like sustainability-linked bonds and to align carbon prices will require professionals such as **Carbon Accounting and Verification Specialists** to quantify emissions reductions, **ESG Analysts** within banks and investment funds to assess project sustainability, and **Green Bond Specialists** to structure and market these new financial products.<sup>8</sup>
- **Roles Driven by Technology:** Technology is fundamentally changing how environmental resources are managed. This "datafication" of environmental management is creating a new layer of digital green jobs. The use of GIS and remote sensing is already established, but the next wave of roles will include **Drone Pilots** for high-resolution agricultural and environmental monitoring, **Smart Grid Engineers** to manage the integration of variable renewable energy sources into the national grid, and **Circular Economy Data Scientists** to analyze material flows and optimize recycling systems. The complexity of the analyses in the CCDR and the advanced services offered by firms like Sylvatrop Consulting are early indicators of this trend.<sup>7</sup> This shift demands a workforce that is not only environmentally literate but also highly proficient in data science and digital tools.
- **Roles Driven by Policy and Social Justice:** The "Just" component of the JETP and the focus on formalizing informal sectors like waste management will create demand for roles at the intersection of social policy and environmental management. These include **Social Safeguards Specialists** to ensure that large

infrastructure projects do not harm local communities, **Community Benefits Agreement Negotiators** to formalize the commitments of project developers to local populations, and **Cooperative Business Advisors** to provide the managerial and financial expertise needed to make newly formalized entities, like the Mbeubeuss waste-pickers' cooperative, viable and successful.<sup>6</sup>

These emerging roles signal a clear direction: the future of green employment in Senegal will be more specialized, more digital, and more integrated with social and financial systems. Preparing the workforce for this future requires proactive and strategic action today.

## **Chapter 24: Strategic Recommendations for Action**

Based on the comprehensive analysis of Senegal's green employment landscape, the following strategic recommendations are proposed for key stakeholders to accelerate workforce development and maximize the benefits of the green transition.

### **For Government & Policymakers (Ministry of Environment, Ministry of Vocational Training, etc.)**

- **Recommendation 1: Establish a National "Green Skills Council".** To address the coordination challenge inherent in the "synergistic triad" of international support, the government should create a formal body that brings together the Ministry of Vocational Training, the Ministry of Environment, key industry associations (e.g., renewable energy, construction), educational institutions, and representatives from the JETP and PAGE programs. This council's mandate would be to continuously monitor labor market trends, identify emerging skills gaps in real-time, and provide binding recommendations for curriculum updates and the creation of new training programs, ensuring that the supply of skills is always aligned with market demand.
- **Recommendation 2: Develop a National Certification and Licensing Framework.** To ensure quality, safety, and professionalism in critical technical roles, the government should work with industry to establish a mandatory

national certification and licensing system for occupations such as **Solar PV Installers, Building Energy Auditors, and Environmental Impact Assessment Practitioners**. This would standardize competencies, protect consumers, and increase the credibility and mobility of Senegalese technicians and consultants.

### **For Educational & Training Institutions (Universities, Polytechnics, Vocational Centers)**

- **Recommendation 1: Launch Interdisciplinary, Market-Aligned Graduate Programs.** Universities like UCAD and UGB should partner with industry actors (e.g., BMN, FONSIS, private banks) to develop and launch new, specialized Master's programs in high-demand, emerging fields. Priority areas include **"Circular Economy Management,"** focusing on logistics, industrial symbiosis, and policy; and **"Climate Finance and Investment,"** covering project finance, ESG analysis, and carbon markets.
- **Recommendation 2: Integrate "Hybrid Professional" Skills into Core Curricula.** All core environmental science, agriculture, and engineering degree programs must be updated to integrate mandatory modules in **project management, financial literacy, community engagement, and digital tools (GIS, data analysis)**. This will ensure that graduates possess the "hybrid" skill set that the modern job market demands, moving beyond purely technical training to produce well-rounded, effective professionals.

### **For Private Sector & Investors (Companies, Banks, Investment Funds)**

- **Recommendation 1: Invest in Apprenticeships and Industry-Led Training.** The private sector should take a proactive role in building its own talent pipeline. This can be achieved by establishing formal apprenticeship programs for vocational roles, modeled on the successful SEN'EAU "École des plombiers".<sup>41</sup> Partnering with vocational centers like ISEP-Thiès to co-design curricula and provide internship opportunities will ensure that graduates are job-ready from day one.
- **Recommendation 2: Build Internal Green Finance Capacity.** To unlock the

private finance potential highlighted by the World Bank <sup>10</sup>, commercial banks and investment funds should proactively enroll their credit analysts, risk managers, and investment officers in the

**Green Banking Sénégal** training program.<sup>59</sup> Building this internal capacity to confidently evaluate and finance green projects is the most direct way to overcome bottlenecks in project financing and capitalize on the opportunities presented by the JETP.

## For Job Seekers & Professionals

- **Recommendation 1: Pursue a "Hybrid" Skill Set.** To stand out in a competitive market, professionals should actively cultivate a hybrid profile. Technical degrees should be complemented with professional certifications in project management (e.g., PMP), data analysis, or languages. This demonstrates the blend of technical depth and managerial breadth that employers are seeking.
- **Recommendation 2: Actively Cultivate Professional Networks.** The analysis shows that many opportunities, particularly in consultancy and with NGOs, are accessed through professional networks. Job seekers should actively engage with industry associations like the *Agence Nationale pour les Energies Renouvelables* (ANER), attend seminars and workshops, and connect with professionals in their target field on platforms like LinkedIn. In a relationship-driven market, a strong professional network is a crucial career asset.<sup>71</sup>

By implementing these coordinated strategies, Senegal can build the skilled, adaptable, and forward-looking workforce required to turn its green ambitions into a reality, paving the way for a future that is both sustainable and prosperous.

## Appendices

### Appendix A: Directory of Green Economy Training Institutions

Institution	Location	Key Green Economy Programs	Source(s)
<b>Universities</b>			
Université Cheikh Anta Diop (UCAD)	Dakar	Master in Environment & Mining Waste Management, Master in Environmental Sciences, Master in Natural Resource Management, Agroforestry Programs	30
Université Iba Der Thiam (UIDT)	Thiès	Ingénieur Agronome (ENSA), Specializations in Forestry, Soil Science, etc.	33
Université Gaston Berger (UGB)	Saint-Louis	Engineering programs in Hydraulics, Hydrogeology, Environment	40
Université Rose Dieng France-Sénégal (URDFS)	Diamniadio	Licence Professionnelle in Waste Management and Valorization	48
<b>Polytechnics &amp; Engineering Schools</b>			
École Supérieure Polytechnique (ESP)	Dakar	Engineering, Research Internships in Circular Economy	40
École Polytechnique de Thiès (EPT)	Thiès	Engineering programs in	40



		Hydraulics, Hydrogeology	
École Supérieure de Management et de Télécommunications (ESTM)	Dakar	Licence & Master in Electrical Engineering & Renewable Energies	76
Supdeco	Dakar	Bachelor in Renewable Energy Management	66
<b>Vocational &amp; Specialized Training Centers</b>			
Institut Supérieur d'Enseignement Professionnel (ISEP- Thiès)	Thiès	Diploma for Renewable Energy Technicians (Photovoltaic)	22
SEN'EAU / CSFP-BTP	Dakar	École des plombiers (CAP Canalisateur Réseau Eau Potable)	41
Bioforce	Dakar	Training in WASH Project Management	43
RENAC / GIZ / BMN / OQSF	Dakar	Green Banking Sénégal (Professional training for finance sector)	59
École Supérieure d'Electricité, du Bâtiment et des Travaux Publics (ESEBAT)	Dakar	Master in Waste Management & Sanitation Techniques	49
Centre Sectoriel de Formation Professionnelle aux Métiers des Industries Agro- alimentaires (CSFP-	Dakar	Agro-industrial skills training	67

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## Appendix B: Directory of Key Employers, Professional Networks, and Associations

Organization Type	Name of Organization	Sector(s) of Operation	Source(s)
<b>Government Agencies</b>	Agence Nationale pour les Energies Renouvelables (ANER)	Renewable Energy	71
	Agence Sénégalaise de la Reforestation et de la Grande Muraille Verte (ASERGMV)	Forestry, Reforestation	36
	Office des Lacs et Cours d'Eau (OLAC)	Water Resource Management	39
	Société Nationale des Eaux du Sénégal (SONES)	Water Resource Management	38
	Commission de Régulation du Secteur de l'Electricité (CRSE)	Energy Regulation	23
	Institut Sénégalais de Recherches Agricoles (ISRA)	Agriculture, Forestry Research	30
<b>Private Sector Companies</b>	SEN'EAU	Water Management	41
	Mainstream Renewable Power /	Wind Energy Development	21

	Lekela Power		
	Takoussane Energy	Solar Energy Installation	24
	Vinci / Sogea-Satom	Green Construction, Infrastructure	19
	Sylvatrop Consulting	Environmental Consulting, EIA, Drones	57
	Elementerre, Worofila, DNA	Sustainable Construction	50
<b>NGOs &amp; Associations</b>	WeForest	Forestry, Reforestation	31
	France Volontaires	Volunteerism (esp. Great Green Wall)	36
	SUCO	Agriculture, Climate Resilience, Volunteerism	69
	Jeunes Volontaires pour l'Environnement (JVE) Sénégal	Environmental Awareness, Youth Engagement	75
	Oceanium	Marine Conservation, Waste Management	73
	Enda Pronat	Agroecology, Advocacy	36
	RESOPP (Réseau des Organisations Paysannes et Pastorales du Sénégal)	Sustainable Agriculture, Cooperatives	77
<b>Financial Institutions</b>	Fonds Souverain d'Investissements Stratégiques (FONSIS)	Impact Investment, Green Finance	61

	Teranga Capital	Impact Investment (SMEs)	62
	Ecobank, La Banque Agricole	Green Finance	60

## Appendix C: Source and Methodology Documentation

This report was compiled through a systematic investigation of publicly available data sources reflecting the employment market and strategic landscape of Senegal's green economy as of mid-2025. The research methodology involved several key steps:

- **Policy and Framework Analysis:** A thorough review of strategic documents from the Government of Senegal (PSE, SNEV) and its key international partners, including the United Nations (PAGE reports), the World Bank (CCDR), and the Just Energy Transition Partnership (JETP declarations). This step established the high-level drivers of green job creation.
- **Systematic Platform Analysis:** Comprehensive searches were executed across a wide range of digital platforms using targeted keywords in both French and English. Sources included:
  1. **National Job Portals:** Emploisenegal.com, Optioncarriere.sn, Senjob.com.
  2. **International Development Portals:** Devex, ReliefWeb, UNDP Jobs, UN Jobs.
  3. **Freelance Marketplaces:** Upwork, Freelancer.com.
  4. **Institutional Websites:** Direct career pages of NGOs, government agencies, and private companies.
  5. **Educational & Training Databases:** Catalogs from Senegalese universities and vocational centers.
- **Cross-Platform Validation and Triangulation:** Findings were cross-referenced across multiple sources to validate occupational titles, skill requirements, and employer information. The frequency of similar job postings was used as an indicator of market demand.
- **Data Extraction and Structuring:** For each identified occupation, data was systematically extracted and structured according to the eleven core dimensions

outlined in the research objective, covering position identification, geographic distribution, employment structure, competency requirements, educational pathways, experience levels, industry context, compensation, certification, and market access channels.

- **Confidence and Currency Standards:** All source materials were documented with their publication or access dates to ensure data currency. A distinction was maintained between verified data (e.g., a specific salary from a job posting) and estimated ranges or qualitative assessments based on aggregated industry analysis. The analysis prioritizes information published from 2022 to mid-2025 to reflect the most current market conditions. The report explicitly cites the source for each major data point, allowing for full traceability of the information presented. No primary data collection (surveys, interviews) was conducted for this report; all findings are based on the analysis of existing secondary sources.

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# **Mapping Senegal's Iron Economy: A Framework for Industrial Development, Workforce Planning, and Infrastructure-Led Growth**

## **Part I: The Strategic Imperative: Senegal's Development Vision and the Iron Economy**

This report provides a comprehensive mapping of the employment landscape across Senegal's foundational industrial sectors—termed the "Iron Economy"—comprising manufacturing, logistics, construction, utilities, and emerging technologies. It aims to furnish structured datasets and analytical insights to support national industrial development objectives, coordinate workforce planning, and guide the effective implementation of infrastructure projects. The analysis is framed within the context of Senegal's overarching national development strategies, providing a strategic tool for policymakers to align labor market dynamics with long-term economic ambitions.

### **1.1 The Plan Sénégal Émergent (PSE) and Vision 2050: A Mandate for Structural Transformation**

Senegal's economic trajectory for the coming decades is charted by a series of ambitious national strategies, principally the Plan Sénégal Émergent (PSE) and its long-term successor, "Sénégal 2050." These are not merely plans for incremental growth; they are mandates for a profound structural transformation of the national economy. Their success is fundamentally contingent upon the robust development and performance of the Iron Economy sectors.

The PSE is constructed upon three strategic axes: (1) Structural Transformation of the

Economy and Growth, (2) Human Capital, Social Protection, and Sustainable Development, and (3) Governance, Institutions, Peace, and Security.<sup>1</sup> The first axis, which is the primary engine of the plan, sets formidable targets, including sustaining an annual Gross Domestic Product (GDP) growth rate of 7-8% and, critically, creating over 600,000 formal jobs.<sup>1</sup> The long-term "Sénégal 2050" vision elevates this ambition, aiming to triple the per capita income from approximately \$1,691 USD in 2023 to \$4,500 USD by 2050. Achieving this goal necessitates sustained high growth and will be fueled by massive capital injections, with the government projecting investments of up to \$21 billion over the five-year period from 2025 to 2029.<sup>3</sup>

The architecture of the PSE explicitly prioritizes the Iron Economy. Flagship projects outlined in the plan include the establishment of a "Hub Logistique et Industriel Régional" (Regional Logistics and Industrial Hub), the strategic modernization of the energy and infrastructure sectors, and the targeted development of agriculture, agro-alimentary industries, and the mining sector.<sup>1</sup> The financing for these transformative goals is a composite of public expenditure, support from international financial partners (Partenaires Techniques et Financiers - PTF), and a significant reliance on Public-Private Partnerships (PPPs). The Priority Action Plan (Plan d'Actions Prioritaires - PAP) allocates a commanding 66.3% of its total financing to the first axis of structural transformation and growth, underscoring the centrality of industrial and infrastructure development.<sup>4</sup>

However, these ambitious goals confront the stark reality of Senegal's current economic structure. The economy is heavily dominated by the services sector, which accounted for 61% of value added between 2014 and 2018, and is characterized by a vast informal sector where an estimated 95% of businesses operate.<sup>5</sup> The PSE's target of creating 600,000

*formal* jobs is a direct challenge to a status quo in which the formal private sector employs less than 5% of the active population.<sup>7</sup> This highlights that the PSE is not an incremental adjustment but a plan for economic revolution. Its viability hinges entirely on the nation's ability to catalyze a fundamental reallocation of labor and capital from low-productivity informal services into higher-productivity, formal industrial sectors—the very essence of the Iron Economy.

This ambitious transformation is further complicated by its financing model. The government explicitly relies on future revenues from oil, gas, and gold to underwrite the "Sénégal 2050" vision.<sup>3</sup> While these resources provide a critical source of capital,

they also introduce a high-risk dependency on volatile global commodity markets. This reliance presents long-term vulnerabilities, as global energy transitions, price fluctuations, or geological depletion could undermine this crucial funding stream.<sup>3</sup> This situation creates a strategic race against time. It is imperative that revenues from the extractive sector are strategically and urgently channeled into building the non-extractive pillars of the Iron Economy—manufacturing, logistics, construction, and value-added services. Doing so will create a more resilient and diversified economic base capable of sustaining growth long after any commodity boom has faded. Failure to manage this transition effectively risks trapping the nation in a "resource curse" scenario, where temporary resource wealth fails to translate into sustainable, broad-based development.

## 1.2 The Infrastructure Backbone: Mapping the Drivers of the Iron Economy

The tangible catalysts for activating the Iron Economy are the massive infrastructure projects planned or underway across Senegal. These projects are not ends in themselves; they are the foundational investments intended to unlock industrial potential and generate widespread employment. Their financing and implementation models, heavily reliant on international partnerships and private sector engagement, are as critical as the physical infrastructure itself.

A central pillar of this development is the modernization of the **transport sector**. Key projects are reshaping the country's logistical landscape. The Dakar Toll Road has been extended by 17 kilometers to connect the capital's center with the new Blaise Diagne International Airport (AIBD) and the economically significant city of Thiès.<sup>8</sup> This project, a flagship Public-Private Partnership (PPP) in West Africa, was supported by the World Bank Group, including the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA), and the African Development Bank (AfDB).<sup>8</sup> Complementing this is the development of the new deep-water Port of Ndayane, an \$800 million project in partnership with global logistics giant DP World, and the strategic redéploiement of a national and international rail network, including a crucial link to Mali.<sup>10</sup>

In the **energy sector**, the government has set a goal of achieving universal electricity access by 2025.<sup>12</sup> This ambition is backed by substantial international support,

including a \$495 million World Bank project aimed at connecting 200,000 households, 600 health centers, and 200 schools to the grid.<sup>12</sup> A cornerstone of the energy strategy is the Just Energy Transition Partnership (JETP), an initiative with international partners (France, Germany, EU, UK, Canada) designed to increase the share of renewable energy in Senegal's electricity mix to 40% by 2030, mobilizing up to €2.5 billion in financing.<sup>15</sup>

To foster industrial growth and decongest the capital, the government is also spearheading the development of new **urban and industrial zones**, most notably the integrated urban pole of Diamniadio, which is designed to host new industrial and administrative capacities.<sup>18</sup>

The realization of this infrastructure agenda relies heavily on a robust institutional framework for attracting and managing investment. The World Bank and the AfDB are central partners, providing not only financing but also crucial technical assistance in structuring complex PPPs and ensuring projects are bankable.<sup>9</sup> The AfDB's support, in particular, has been instrumental in bringing transformative PSE projects like the Dakar Toll Road, the Regional Express Train (TER), and the Blaise Diagne International Airport to fruition.<sup>9</sup>

While this infrastructure boom is essential, it creates a significant workforce planning challenge. The construction phases of these mega-projects generate a massive, but temporary and geographically concentrated, demand for specific Iron Economy skills—construction workers, civil engineers, electricians, heavy equipment operators, and logisticians. Once these projects are completed, the demand for this specific skill set will plummet, while a new demand for long-term operations and maintenance (O&M) roles will emerge. This dynamic risks creating a "boom-bust" employment cycle. This presents a dual challenge for policymakers: first, meeting the immediate, high-volume demand for construction skills, and second, planning for the systematic transition of this workforce into sustainable, long-term employment in O&M, manufacturing, or other industrial roles once the construction phase ends. Without a clear and proactive strategy for workforce transition, Senegal could face significant regional unemployment and a surplus of now-redundant skills after the current wave of mega-projects is complete.

**Table 1.2: Major Infrastructure Projects and Linkages to Iron Economy Sectors**

Project	Lead	Total	Financi	Primar	Secon	Key	Key	Status/
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Name	Ministry/Agency	Investment (FCFA/USD)	Financing Model	Primary Iron Economy Sector Impacted	Primary Sector Impacts	Job Roles Generated (Construction Phase)	Job Roles Generated (Operational Phase)	Timeline
<b>Dakar-AIBD-Thiès Toll Road Extension</b>	Ministère des Infrastructures et des Transports terrestres et aériens / Ageroute	Approx. \$173 Million	PPP (Gov't of Senegal, Eiffage, IFC, AfDB, MIGA)	Transport, Logistics	Construction, Tourism	Civil Engineers, Construction Workers, Equipment Operators, Project Managers	Toll Collectors, Maintenance Technicians, Road Safety Patrols, Logistics Coordinators	Operational <sup>8</sup>
<b>Ndayane Deep Water Port</b>	Ministère des Infrastructures et des Transports terrestres et aériens / DP World	\$800 Million	PPP	Logistics, Transport	Construction, Manufacturing, Trade	Port Construction Specialists, Dredging Operators, Civil Engineers, Electricians	Port Operators, Crane Operators, Customs Agents, Warehouse Managers, Logistics Planners	Construction started Feb 2023 <sup>11</sup>
<b>Region</b>	Ministère	Phase	Public /	Transport	Construction	Railway	Train	Phase

<b>al Express Train (TER)</b>	re des Infrastr ucture s et des Transp orts terrest res et aériens	1: €1 Billion+	Donor Financ e (AfDB, France )	ort, Utilities	uction, Urban Develo pment	y Engine ers, Track Layers, Signal Techni cians, Electric ians, Constr uction Manag ers	Drivers , Station Staff, Mainte nance Engine ers (Rolling Stock & Track), Ticketi ng Staff	1 Operat ional <sup>9</sup>
<b>Diamni adio Indust rial Park</b>	Ministère de l'Indust rie et de la Petite et Moyen ne Industr ie / APROS I	Variabl e	Public / PPP	Manuf acturin g, Logisti cs	Constr uction, Utilities , Real Estate	Industr ial Archite cts, Constr uction Worker s, Utility Installe rs (Water, Power)	Factor y Worker s, Produc tion Manag ers, Logisti cs Staff, Mainte nance Techni cians, Securit y	Ongoin g Develo pment <sup>18</sup>
<b>Seneg al Energy y Acces s Scale- Up Projec t</b>	Ministère de l'Energi e, du Pétrole et des Mines / Senelec	\$495 Million (WB portion )	Donor Financ e (World Bank)	Utilities (Energy)	Constr uction, Health, Educ ation	Electric al Engine ers, Linemen, Project Manag ers, Solar	Grid Mainte nance Techni cians, Meter Reader s, Custo mer	Ongoin g <sup>12</sup>

						Technicians	Service Agents, Energy Auditors	
<b>Just Energy Transition Partnership (JETP)</b>	Ministère de l'Énergie, du Pétrole et des Mines	Up to €2.5 Billion	Blended Finance (Public, Donor, Private)	Utilities (Renewable Energy)	Manufacturing, Construction, R&D	Wind Turbine Technicians, Solar Farm Installers, Electrical Engineers, Environmental Scientists	Plant Operators, Maintenance Technicians, Grid Integration Specialists, R&D Personnel	2023-2030 <sup>15</sup>

### 1.3 The Regional Context: AfCFTA and UEMOA Integration

Senegal's industrial ambitions are not unfolding in a vacuum but within the dynamic and competitive context of regional and continental economic integration. Frameworks like the African Continental Free Trade Area (AfCFTA) and the West African Economic and Monetary Union (UEMOA) present both significant opportunities and profound challenges for the nation's Iron Economy.

The AfCFTA represents a transformative opportunity for Senegal. Economic modeling projects that it could deliver a significant boost to the country's GDP per capita and help narrow its chronic trade deficit by creating a larger, more accessible market for Senegalese goods and services.<sup>2</sup> Data already indicates that intra-African trade is on an upward trend, a movement spurred in part by the initial implementation phases of

the AfCFTA.<sup>23</sup>

However, the promise of AfCFTA is accompanied by considerable risks that require careful policy navigation. Concerns have been raised by civil society organizations that, without protective measures, the agreement could further marginalize smallholder farmers and entrench the dominance of large multinational agribusinesses, threatening local food sovereignty.<sup>24</sup> Furthermore, the technical negotiations around crucial details like Rules of Origin (RoO) are of paramount importance. The design of these rules will determine whether the AfCFTA fosters the development of genuine regional value chains and deep industrialization or simply becomes a conduit for trans-shipment and superficial trade, bypassing the core objective of structural transformation.<sup>25</sup>

Historically, Senegal's industrial base has been oriented towards the UEMOA regional market. Yet, even within this more established bloc, its industries face intense competitive pressure. A significant challenge has been the influx of massive imports, particularly from Asia, which often circumvent trade regulations through fraud and smuggling, undercutting local producers.<sup>26</sup>

This regional context reframes Senegal's national ambition to become a "Hub Logistique et Industriel Régional".<sup>1</sup> This is not a goal to be achieved in isolation but a direct race against other aspiring regional powerhouses. The success of this vision depends less on the existence of the AfCFTA agreement itself and more on the

*relative competitiveness* of Senegal's domestic Iron Economy. The creation of a larger, more integrated market means that Senegal is competing not just against global imports but directly against established and emerging hubs in Côte d'Ivoire, Ghana, and Nigeria for foreign direct investment, manufacturing contracts, and logistics dominance in West Africa. The massive investments in physical infrastructure—ports, rail, airports—are necessary but ultimately insufficient conditions for victory in this regional competition. The true and lasting competitive advantage will be built on "soft infrastructure": the skill level and productivity of its logisticians and factory workers, the efficiency of its customs and port operations, the reliability of its energy supply, and the quality of its digital backbone. Therefore, workforce development and skills enhancement are not merely social policy goals; they are fundamental pillars of national economic competitiveness in the AfCFTA era.

## **Part II: The Senegalese Workforce: A Cross-Sectoral Profile**

Moving from the macro-strategic context to the micro-reality of the labor market, this section provides a detailed portrait of the Senegalese workforce. It examines the deep structural duality between formal and informal employment, maps current labor demand, analyzes the geographic distribution of work, and assesses the critical role of gender dynamics.

### **2.1 The Duality of the Labor Market: Formal vs. Informal**

The single most defining characteristic of Senegal's employment landscape is its profound structural duality—a small, formal economy existing alongside a vast, dominant informal sector. Understanding this divide is crucial for any realistic and effective workforce planning and industrial policy.

Quantitatively, the scale of the informal economy is immense. An estimated 95% of all businesses in Senegal operate informally.<sup>6</sup> This translates into an overwhelming share of employment, with the informal sector accounting for approximately 72% of all non-agricultural jobs.<sup>27</sup> Even within urban centers, where formal employment is typically more concentrated, between 56% and 65% of all workers are engaged in the informal economy.<sup>28</sup> In stark contrast, the formal private sector is exceptionally small, providing employment for less than 5% of the nation's active population.<sup>7</sup>

The qualitative differences between these two spheres are just as stark. Informal employment is characterized by a near-total lack of regulation and social protection, leaving workers without access to health insurance, pensions, or formal safety nets. This precarity is coupled with lower and significantly less stable incomes, which perpetuates high rates of working poverty.<sup>27</sup> Informal enterprises themselves are typically micro-sized, operating with minimal capital stock, which leads to low productivity. They face severe constraints in accessing formal finance, hindering their ability to invest, grow, and create more and better jobs.<sup>7</sup> The construction sector, which has experienced rapid growth of 15.4% annually between 2014 and 2017 and absorbs a large share of total investment, is a particularly significant employer of informal labor due to its low barriers to entry for manual work.<sup>7</sup>

This reality presents a fundamental challenge to the government's stated policy goals. The PSE's headline target of creating 600,000 formal jobs <sup>1</sup> is profoundly misaligned with an economy that overwhelmingly generates informal work. With up to 300,000 young people entering the labor market each year <sup>6</sup>, the formal sector, in its current state, lacks the capacity to absorb this influx. It is mathematically improbable that formal job creation alone can solve Senegal's employment challenge in the short to medium term.

This necessitates a paradigm shift in policy. A successful national employment strategy cannot focus exclusively on the difficult and slow process of formalization. It must adopt a dual-pronged approach that also seeks to increase the *productivity, safety, and income levels* within the informal sector itself. The informal Iron Economy—comprising countless small-scale welders, independent construction crews, micro-logistics operators, and artisanal manufacturers—will remain the primary source of employment for the majority of Senegalese for the foreseeable future.

Therefore, policy interventions must be tailored to this reality. This includes creating clear and accessible pathways to formality for the most capable and growth-oriented informal enterprises. Simultaneously, it requires policies that improve conditions *within* the informal economy. This could involve establishing systems for skills certification that recognize practical experience, developing micro-finance products tailored for the purchase of tools and equipment, and creating mechanisms to include informal operators in public procurement for small-scale projects. The "New Deal Technologique's" stated goal of digitizing the informal economy represents a key potential lever for achieving these objectives, as it can enhance market access and operational efficiency for these micro-enterprises.<sup>30</sup>

**Table 2.1: Key Characteristics of Formal vs. Informal Employment in Senegal's Iron Economy**

Characteristic	Formal Sector	Informal Sector	Data Source Snippet(s)
Share of Total Employment	< 5% of active population (private sector)	72% of non-agricultural employment; 95% of businesses	<sup>6</sup>

<b>Average Monthly Wage</b>	Higher, more stable	Lower, volatile, contributes to working poverty	27
<b>Access to Social Protection</b>	Generally covered (pension, health)	Generally absent; no regulated protection	27
<b>Access to Bank Finance</b>	Possible, though challenging for SMEs	Extremely limited; reliance on micro-finance or personal funds	7
<b>Average Firm Size</b>	Includes 80 large enterprises; average firm after 20 years has < 70 employees	Overwhelmingly micro-enterprises, often self-employed or family-based	7
<b>Productivity (Sales per worker)</b>	High; formal firms with 5+ employees are ~7x more productive than average	Low due to minimal capital and limited technology adoption	7
<b>Key Sectors of Operation</b>	Agro-industry, Chemicals, Cement, Banking, Telecoms	Construction, Retail Trade, Transport, Artisanal Manufacturing	26
<b>Gender Distribution</b>	Male-dominated in technical/industrial roles	Higher proportion of women's employment overall is informal (79% vs 68% for men)	27

## 2.2 Mapping Labor Demand: A Real-Time Snapshot

To move beyond broad statistics and understand the specific needs of the Iron Economy, an analysis of real-time labor market data from online job portals provides a granular snapshot of the roles, skills, and qualifications currently in demand by Senegalese employers.



In the **logistics sector**, there is a clear and consistent demand for both technicians and engineers. Job postings frequently seek *Techniciens Logistique* and *Ingénieurs Logistique*.<sup>34</sup> The required skill sets are practical and specific, encompassing supply chain management, procurement, inventory control, and, crucially, proficiency with customs and port management software such as Orbus 2000 and Gaindé 2000.<sup>34</sup> Educational requirements for these roles span a wide spectrum, from a

*Brevet de Technicien Supérieur* (BTS) to Bachelor's (*Licence*) and Master's degrees, indicating opportunities at multiple entry levels.<sup>34</sup>

The **construction and heavy industry sectors** exhibit a strong demand for skilled trades and experienced supervisors. There is a notable need for certified welders (*Soudeurs*), including those with specific skills in MIG/MAG processes, and for industrial electricians.<sup>37</sup> A key role is the

*Chef de Chantier Electricité Industrielle* (Industrial Electrical Site Manager), a position that demands not only a technical diploma like a *Certificat d'Aptitude Professionnelle* (CAP) or BTS but also a minimum of seven years of hands-on experience. The responsibilities for this role are extensive, covering the entire project lifecycle from site preparation and technical planning to execution, team management, and client relations.<sup>39</sup>

Within the **manufacturing and energy sectors**, particularly for international firms like MAN Energy Solutions, there is a demand for high-level engineering talent. Roles such as *Service Engineer* and *Superintendent Engineer* require a university degree in engineering combined with five or more years of relevant experience in demanding environments like heavy equipment manufacturing or power plant operations.<sup>41</sup>

A significant characteristic observed across many of these technical job profiles is the high degree of **geographic mobility**. Many candidates posting their CVs on platforms like Emploisenegal.com explicitly state their willingness to relocate and work across all 14 of Senegal's regions, and even internationally. This flexibility is a critical asset for the nation, as it indicates that the workforce is adaptable and can be mobilized to support the major infrastructure projects being deployed in remote and developing areas of the country.<sup>34</sup>

This analysis of the labor market reveals a potential structural imbalance. There is clear demand at two ends of the skills spectrum: high-level, university-educated engineers (Bac+5) and entry-to-mid-level technicians with vocational diplomas

(BTS/Licence). However, the pathway for an experienced technician to advance to a managerial position, or for a skilled artisan from the informal sector to gain the certified qualifications needed for a supervisory role, appears underdeveloped. The welder profiles, for instance, show a clear vocational training track (e.g., from CEP Thiès or Lycée Seydina Limamou Laye) but no obvious, structured path to a higher-level certification or a supervisory position without pursuing an entirely different academic degree.<sup>37</sup> Similarly, the requirement of 7+ years of experience for a

*Chef de Chantier* on top of a BTS suggests a long, slow progression based on accumulated experience rather than a formal, accelerated upskilling pathway.<sup>39</sup> This points to a "hollowing out" at the mid-skill level and a potential "glass ceiling" for workers on the vocational track. A key policy imperative should be the creation of modular, continuous training and certification programs that allow a skilled electrician or welder to formally upgrade their skills and qualifications to become a site supervisor or technical manager, thus bridging the gap between the workshop floor and the engineering office.

**Table 2.2: Top 20 In-Demand Technical and Professional Roles in the Iron Economy (Based on Online Job Market Analysis)**

Rank	Job Title	Key Sector(s)	Required Qualification Level	Top 3-5 Required Skills/Competencies	Average Geographic Mobility	Source Snippet(s)
1	Technicien Logistique	Logistics, Transport, Manufacturing	BTS, Licence	Supply Chain, Procurement, Inventory, Customs Software (Gaindé), Transport Planning	High	34
2	Ingénieur Logistique	Logistics, Transport	Master, Ingénieur	Supply Chain Optimization, Enterprise	High	35

				Managem ent, Energy Optimizati on, Maintenan ce		
3	Chef de Chantier (Construct ion/Électri cité)	Constructi on, Utilities	CAP, BTS (+ experienc e)	Site Managem ent, Team Leadershi p, Reading Technical Plans, Safety Standards , Client Relations	Medium- High	39
4	Soudeur (MIG/MAG , Industriel)	Constructi on, Manufact uring	CAP, Vocational Diploma	MIG/MAG Welding, Reading Structural Plans, Industrial Safety, Metal Fabricatio n	High	37
5	Électricien (Industriel/ Bâtiment)	Constructi on, Utilities, Manufact uring	Vocational Diploma	Industrial Wiring, Solar Installatio n, Maintenan ce, Adherenc e to Norms	High	34
6	Ingénieur Électromé	Manufact uring,	Ingénieur (Bac+5)	Industrial Maintenan	High	38

	canique	Utilities, Mining		ce, Automatio n, Project Managem ent, Teamwork		
7	Agent de Maintenan ce Industriell e	Manufact uring, Utilities	BTS, Licence	Electrome chanics, Preventive Maintenan ce, Diagnostic s, Technical Document ation	Medium	37
8	Ingénieur Génie Civil	Constructi on, Infrastruct ure	Ingénieur (Bac+5)	Structural Design, Project Managem ent, Site Supervisio n, AutoCAD/ Civil 3D	High	34
9	Opérateur de Productio n	Manufact uring	Varies (often basic training)	Quality Control, Machine Operation, Adherenc e to Procedure s, Teamwork	Low- Medium	37
10	Supervise ur Transport	Logistics, Transport	CDD, Prestation	Fleet Managem ent, Route Planning, Team Supervisio	High	42

				n, Logistics Coordinati on		
11	Ingénieur Technico- Commerci al	Manufact uring, Technolog y	Ingénieur, Master	Technical Sales, Client Relations, Product Knowledg e, Negotiatio n	High	36
12	Chauffeur Poids Lourd / Camion Benne	Logistics, Constructi on, Mining	Profession al License	Heavy Vehicle Operation, Safety Protocols, Basic Maintenan ce	High	42
13	Ingénieur Hydraulici en / Électromé canique	Utilities, Constructi on	Ingénieur (Bac+5)	Water Systems, Electrome chanical Systems, Pumping Stations, Project Design	Medium	36
14	Technicie n en Maintenan ce des Voies Ferrées	Transport (Rail)	DISEP (Bac+2)	Track Maintenan ce, Welding, Rail Infrastruct ure, Safety Standards	High	44

15	Technicien en Énergies Renouvelables	Utilities (Energy)	DISEP (Bac+2)	Solar/Wind Installation, Maintenance, Energy Audits, System Sizing	High	44
16	Ingénieur des Mines	Mining	Ingénieur (Bac+5)	Mining Operations, Geology, Safety Management, Environmental Compliance	High (site-based)	32
17	Steel Industry Engineer	Manufacturing (Metals)	Ingénieur (Bac+4/5)	Project Management, Metallurgy, Quality Control, Technical Support	Medium-High	46
18	Superintendent Engineer (Heavy Industry)	Manufacturing, Energy	Ingénieur (+ experience)	Team Supervision, Field Engineering, SOP Preparation, Project Timelines	High	41
19	Technicien Supérieur en	Construction	DISEP (Bac+2)	Quality Control, Building Codes,	High	44

	Contrôle Technique (BTP)			Materials Testing, Site Inspection		
20	Développeur Web & Mobile	Emerging Technology	DISEP, Licence	Programming Languages, Database Management, Application Development	High	44

## 2.3 Geographic Distribution of Employment

The spatial distribution of industrial activity and employment in Senegal is marked by a historical and persistent concentration in the capital region, a reality that national development policy is now actively seeking to counterbalance.

For decades, the economic heart of Senegal has been Dakar. Analysis shows that the capital region has historically hosted nearly 90% of the country's industrial enterprises, accounting for a similarly dominant share of value-added, permanent industrial jobs, and wages paid.<sup>26</sup> This intense concentration has created significant regional imbalances and has stifled the economic potential of other parts of the country.

The Plan Sénégal Émergent and its associated infrastructure strategy represent a deliberate effort to break this pattern of centralization. Major new infrastructure projects are being strategically located outside the capital to serve as new poles of economic growth. The new international airport and associated economic zones in Thiès, the significant expansion of mining operations in the Kédougou region, and agro-industrial and energy projects along the Senegal River Valley are all designed to decentralize economic opportunity.<sup>8</sup>



The Senegalese workforce appears ready and willing to support this decentralization. Analysis of job seeker profiles on national employment portals reveals a high degree of "mobilité géographique".<sup>34</sup> Many technicians, engineers, and skilled workers explicitly state their willingness to work across all 14 of the country's regions, indicating that the labor force is adaptable and will follow opportunities wherever they emerge. The concentration of the mining industry in the Kédougou region, for example, has already demonstrated this dynamic, drawing a specialized workforce to the southeast of the country.<sup>32</sup>

This situation reveals a critical policy consideration: the success of regional industrialization hinges not just on building "hard infrastructure" like roads, ports, and factories, but on the concurrent development of "soft infrastructure" like training centers, housing, and social services. While the workforce may be mobile enough to move for a temporary construction job, attracting and, more importantly, *retaining* a skilled workforce for long-term industrial operations requires more than just a salary. It requires a viable community with adequate housing, quality schools for children, accessible healthcare, and other social amenities. Therefore, a successful regional development strategy must be holistic. The planning for a new industrial zone in Thiès or a new mining complex in Kédougou must be tightly integrated with a parallel plan for urban development, public service provision, and, crucially, the establishment of local vocational training centers. This integrated approach is necessary to create sustainable economic ecosystems in the regions, preventing the new industrial hubs from becoming mere transient work camps and ensuring that the benefits of decentralization are durable and broadly shared.

## **2.4 Gender Dynamics in the Workforce**

An analysis of gender dynamics within Senegal's labor market reveals a significant paradox: while female entrepreneurship is a powerful and substantial contributor to the national economy, women remain starkly underrepresented in the high-value, formal Iron Economy sectors that are the focus of national strategic investment. Addressing this gap is not only a matter of equity but a crucial lever for unlocking Senegal's full economic potential.

Overall, the formal labor force participation rate for women is low, at just 36%.<sup>6</sup> This

disparity is particularly acute in the core Iron Economy sectors. In the extractive industries (mining), for example, women hold a mere 8.1% of all jobs, a figure that changed little between 2018 and 2022.<sup>33</sup> This underrepresentation is often rooted in deeply ingrained social and cultural barriers. In fields like renewable energy, gender stereotypes that designate technical roles as "men's work," combined with the challenging physical conditions of remote construction sites, create significant obstacles for women seeking to enter and remain in the sector.<sup>49</sup>

Despite these barriers, female entrepreneurship is a vibrant and critical component of the Senegalese economy. A 2022 study estimated that businesses led by women contributed a remarkable 2,681 billion FCFA to the economy, equivalent to 22.1% of GDP in 2017.<sup>50</sup> However, this entrepreneurial activity is overwhelmingly concentrated in the informal sector, primarily in agriculture, local food processing, and trade.<sup>50</sup>

This creates a disconnect. While women are demonstrating immense entrepreneurial drive and making a massive contribution to the economy, they are largely operating outside of the high-growth, high-value sectors receiving the most strategic government and international investment—infrastructure, energy, mining, and formal manufacturing.

Recognizing this imbalance, a number of targeted initiatives have emerged to promote women's inclusion in these non-traditional sectors.

309. **Energy:** The National Strategy for the Promotion of Green Jobs (SNEV) has a strong focus on creating opportunities for youth and women.<sup>52</sup> Specific programs, often in partnership with NGOs like FAADEV, aim to boost women's involvement in the solar energy sector through tailored interventions like mobile training units for rural areas and mentorship programs.<sup>49</sup>
310. **Manufacturing:** A project supported by the ECOWAS Commission is underway to establish a sanitary napkin and diaper manufacturing unit in Senegal, an initiative explicitly designed to support local female entrepreneurship and address women's health needs.<sup>53</sup>
311. **Construction:** Inspirational stories of female entrepreneurs breaking barriers in the BTP (Bâtiment et Travaux Publics) sector are emerging.<sup>55</sup> Furthermore, community-led projects like the "Maison de la Femme" in Dakar plan to prioritize the use of local materials and solar technology in their construction, providing a platform for women's training and empowerment.<sup>57</sup>
312. **Mining:** The organization "Women in Mining Senegal" (WIM Sénégal) is actively working to promote female leadership, encourage young girls to pursue scientific

careers, and advocate for a more inclusive and equitable extractive sector.<sup>58</sup>

These initiatives are vital, but a broader policy shift is required. The focus must move beyond general support for "women's entrepreneurship" and toward creating specific, tangible pathways for female-led businesses to integrate into the supply chains of major Iron Economy projects. This could include preferential procurement policies, technical support to help women's businesses meet the quality standards of industrial clients, and financing mechanisms that support their scaling. Programs like Santander BEST Africa, which support women's groups in food processing and artisanry, offer a model that could be adapted and scaled to target industrial supply chains, thereby bridging the gap between women's demonstrated entrepreneurial capacity and the opportunities being created in the nation's most strategic economic sectors.<sup>59</sup>

## **Part III: Sectoral Employment Deep Dive: Mapping the Pillars of the Iron Economy**

This section provides a granular, sector-by-sector analysis of the employment landscape, applying the cross-cutting themes of formality, skills demand, geography, and gender to each of the five pillars of Senegal's Iron Economy.

### **3.1 Manufacturing**

Senegal's manufacturing sector is a cornerstone of its industrial ambitions, yet it is characterized by a fragmented structure, a concentration in specific sub-sectors, and the nascent development of strategic industries like iron, steel, and automotive assembly.

Structure and Employment Profile:

The industrial fabric of Senegal is dominated by Small and Medium-sized Enterprises (SMEs). In 2015, of the approximately 1,270 industrial enterprises in the country, a staggering 92.5% were SMEs, with only 80 classified as large enterprises.<sup>26</sup> This structure is concentrated in a few key areas: agro-industry (45% of firms), chemicals (12%), and various other

manufacturing activities (36%), including a strong presence in construction materials, particularly cement.<sup>18</sup> Major players like SOCOIM Industries, Dangote Cement, and Ciments du Sahel anchor the cement industry, which is a significant contributor to both domestic construction and sub-regional exports.<sup>32</sup>

The **iron and steel industry** is an emerging sector with growing importance. In 2023, Senegal's exports of iron and steel products reached \$190.66 million, indicating a developing industrial capacity.<sup>60</sup> Companies such as Aarti Steel Senegal, with multiple plants in Dakar's industrial zone, are key players in this market.<sup>61</sup> The growth of this sector is creating demand for highly skilled professionals. Recruitment agencies are actively seeking "Steel Industry Engineers" with advanced degrees (Bac+4/5) and substantial experience (5-10+ years), signaling a need for specialized expertise in metallurgy, project management, and quality control.<sup>46</sup>

The **automotive sector**, in contrast, is primarily focused on downstream activities. The market is characterized by sales, service and repair, and the distribution of spare parts, rather than large-scale vehicle manufacturing.<sup>62</sup> Employment opportunities reflect this structure, with demand for technical support advisors and customer service specialists for international automotive brands, as well as skilled tradespeople such as vehicle mechanics, diagnosticians, and electricians.<sup>63</sup>

The employment profile across the manufacturing sector is varied. While there is a clear demand for high-skill engineers to lead operations in heavy industry, such as the *Superintendent Engineers* sought by MAN Energy Solutions<sup>41</sup>, the bulk of employment within the dominant SME structure is likely concentrated in lower-skill production operator roles.

A critical analysis of the sector's structure reveals what can be termed a "missing middle." Senegal's manufacturing landscape features a few large, capital-intensive players at the top (e.g., in cement and phosphates) and a vast number of low-productivity micro-enterprises and informal artisans at the bottom. What is largely absent is a vibrant and dynamic cohort of mid-sized firms. Globally, it is these agile, growth-oriented medium-sized enterprises that are the primary drivers of broad-based, sustainable industrial employment. The significant challenges faced by Senegalese SMEs—including limited access to finance, high energy costs, and intense competition from the informal sector and illicit imports—stunt their growth, preventing them from scaling up and graduating into this crucial "middle" category.<sup>26</sup> This structural weakness inhibits the sector's ability to absorb labor at the scale envisioned by the PSE. The core policy challenge, therefore, is not simply to attract a few more large multinational corporations, but to create a nurturing and competitive

ecosystem—providing targeted finance, technical support, and market access—that enables promising small firms to grow into the medium-sized, job-creating powerhouses of the future.

### 3.2 Logistics and Transport

As an economy strategically positioned on the Atlantic coast of Africa, Senegal has identified logistics and transport as a key pillar for its emergence. The ambition to become a regional hub is driving massive infrastructure investment and creating significant demand for a skilled logistics workforce.

Strategic Importance and Workforce Demand:

The goal of establishing a "Hub Logistique et Industriel Régional" is a flagship project of the PSE, reflecting a national consensus on the strategic importance of this sector.<sup>1</sup> The newly reorganized Ministry of Infrastructure and Land and Air Transport is tasked with preparing and implementing policy in this domain, with a specific mandate to oversee the development of road and rail infrastructure and to promote the creation of efficient intermodal platforms.<sup>66</sup>

This strategic focus translates directly into labor market demand. Online job portals consistently feature openings for *Techniciens Logistique* and *Ingénieurs Logistique*, indicating strong and sustained hiring activity across the sector.<sup>34</sup> The required skills are diverse, spanning the entire supply chain. At the technical level, employers seek practical competencies in warehouse management, transport planning, and inventory control. A critical requirement is proficiency with specialized software used in Senegalese ports and customs, such as Gaindé and Orbus, which is essential for efficient import-export operations.<sup>34</sup> At the engineering and managerial level, the demand is for strategic skills in supply chain optimization, cost reduction, and enterprise management.<sup>35</sup>

The Training Ecosystem:

To meet this demand, a multifaceted training ecosystem has developed, offering qualifications at various levels.

313. **Vocational and Online Training:** For foundational skills, non-governmental organizations like Mercy Corps, in partnership with DisasterReady, offer free, online training programs in Logistics & Procurement. These courses are internationally accredited by the Chartered Institute of Logistics and Transport

(CILT) in the UK, providing a valuable and accessible entry point into the profession.<sup>68</sup>

314. **Higher Professional Education:** For more advanced qualifications, institutions like the Institut Supérieur d'Enseignement Professionnel de Thiès (ISEP-Thiès) play a crucial role. ISEP-Thiès has a dedicated Transport-Logistics department offering two-year post-baccalaureate diplomas for *Techniciens Supérieurs* in specializations like Transport, Logistics, and Urban Mobility, as well as railway-specific programs.<sup>44</sup>

While the physical infrastructure for a world-class logistics hub is being constructed, the "human infrastructure"—the skilled workforce needed to operate it efficiently—is developing in a fragmented and uncoordinated manner. The various training providers, from online NGOs to public vocational institutes and universities, appear to be operating in silos. There is little evidence of a national, overarching "Logistics Workforce Strategy" that standardizes curricula, establishes mutual recognition of certifications, and aligns training volumes with the specific, projected demand from the new port, airport, and industrial zones. This lack of coordination represents a significant competitive risk. A rival nation in the region with a more coherent and strategic approach to human capital development could potentially operate its logistics hub more efficiently and competitively, even with slightly inferior physical infrastructure. To mitigate this risk and maximize the return on its massive infrastructure investments, Senegal needs a national coordinating body—a task force or skills council—that brings together the Ministry of Transport, the Ministry of Education, TVET institutions, and private sector leaders. The mandate of this body would be to create a unified skills framework, ensure curricula are constantly updated to reflect industry needs (like new software or regulations), and strategically plan the development of the logistics workforce of the future.

### 3.3 Construction

The construction sector is arguably the most visible engine of Senegal's current economic expansion, serving as a primary driver of GDP growth and a critical absorber of labor. However, its reliance on a largely informal workforce presents significant challenges to quality, safety, and the long-term sustainability of the nation's new infrastructure.

#### High Growth and Labor Demand:

The BTP sector has been a star performer in the Senegalese economy, registering an impressive average annual growth rate of 15.4% between 2014 and 2017.<sup>7</sup> It has also been a major recipient of fixed capital investment, particularly in residential and non-residential buildings and structures.<sup>29</sup> This boom has created intense demand for a wide range of construction-related labor. At the management level, there is a strong need for experienced site managers (

*Chefs de Chantier*) with proven technical expertise in civil works and industrial electricity, often requiring seven or more years of experience on top of a technical diploma.<sup>39</sup> At the trade level, there is clear and consistent demand for skilled artisans, particularly certified welders (

*Soudeurs*) and industrial electricians, with training provided by a network of vocational centers across the country.<sup>37</sup>

#### The Challenge of Informality:

Due to its relatively low barrier to entry for manual labor, the construction sector is the primary destination for a large portion of Senegal's informal workforce. While this provides essential employment for hundreds of thousands of people, it comes at a cost. Work in the informal construction sector is often characterized by a lack of formal contracts, no access to social protection or health insurance, and inconsistent application of health and safety standards.<sup>27</sup>

This reliance on a largely informal workforce for the execution of major, state-of-the-art infrastructure projects creates a significant and often hidden risk. Senegal is investing billions of dollars in critical, long-lifespan assets like ports, power plants, bridges, and expressways. The quality, safety, and ultimate durability of these structures are critically dependent on the skill, precision, and adherence to standards of the workforce that builds them. A large, informal workforce, by its nature, often lacks formal, certified training in the latest construction techniques, modern safety protocols (Health, Safety, and Environment - HSE), and rigorous quality control procedures.

This creates a fundamental vulnerability in the national development strategy. While projects may be designed by world-class engineers and financed by international institutions, their physical execution by a workforce without standardized, certified skills could lead to latent defects, higher-than-expected long-term maintenance costs, and a reduced operational lifespan for these critical national assets. This points to an urgent policy need. The government and its international partners should consider mandating on-site, certified training programs for all workers—formal and



informal—engaged in public infrastructure projects. Such requirements, which could be embedded directly into PPP contracts and public procurement regulations, would serve to upskill the workforce, improve the quality and safety of construction, and ensure that the nation's multi-billion dollar investments deliver their full value for decades to come.

### **3.4 Utilities and Energy**

Senegal's energy sector is undergoing a profound transformation, driven by a dual strategy of leveraging domestic natural gas discoveries while aggressively pursuing a transition to renewable energy. This shift is reshaping the employment landscape, creating new "green jobs" while simultaneously posing challenges for the legacy workforce.

#### **The Energy Transition Strategy:**

The national energy policy, led by the Ministry of Energy, Petroleum and Mines (MEPM), is multifaceted.<sup>13</sup> On one hand, Senegal is set to become an oil and gas producer, with a clear strategy to use its newfound natural gas reserves to switch its power generation fleet away from expensive and polluting heavy fuel oil. This is expected to lower the cost of electricity and reduce emissions.<sup>17</sup> On the other hand, Senegal has made ambitious commitments to clean energy. As part of the Just Energy Transition Partnership (JETP), the country has pledged to increase the share of renewable energy to 40% of its installed electricity capacity by 2030.<sup>15</sup> This transition is supported by international partners like Germany's GIZ, which is assisting the MEPM in reforming regulations, promoting energy efficiency, and ensuring fair rural energy access.<sup>13</sup>

#### **The Rise of Green Jobs:**

This green transition is a central pillar of the country's employment strategy. Senegal's National Strategy for the Promotion of Green Jobs (SNEV), first launched in 2015, aims to create thousands of sustainable jobs, with a particular focus on empowering youth and women.<sup>52</sup> These "green jobs" are emerging in a variety of sectors, including the installation, operation, and maintenance of renewable energy facilities (solar and wind), the valorization of waste into energy, sustainable agriculture, and aquaculture.<sup>52</sup> Specific initiatives are already in place to train women as solar technicians, breaking gender barriers in a technical field.<sup>49</sup>

#### **Evolving Skills Demand:**

This energy revolution demands a new and different set of skills. The workforce of the future will need expertise in solar photovoltaics, wind turbine technology, grid integration of variable

energy sources, and energy efficiency auditing. Recognizing this, educational institutions are beginning to adapt. ISEP-Thiès, for instance, now offers a specialized two-year program for Techniciens Supérieurs in Renewable Energies.<sup>44</sup> The JETP political declaration itself explicitly acknowledges the critical need for investment in training, research and development, and the creation of a regional hub for renewable energy equipment manufacturing and grid modernization skills.<sup>16</sup>

However, this transition is not without its challenges. The very name of the "Just Energy Transition Partnership" implies a social contract that must be carefully managed. The national strategy to switch from heavy fuel oil to natural gas and renewables will inevitably lead to the phasing out of older, HFO-fired power plants. This will result in job displacement for workers whose skills are tied to the operation and maintenance of that specific legacy technology. A truly "Just" transition requires more than just building new solar farms; it demands a proactive plan to manage the social and labor consequences of the shift. Without a dedicated strategy for retraining and redeploying the workforce from the declining HFO sector into the new green energy jobs, the transition could create stranded workers, regional economic disruption, and social opposition. Therefore, a core component of the JETP implementation must be the allocation of dedicated funds for worker retraining programs, skills-matching services, and social support packages for the communities and workers affected by the phase-out of the legacy fossil fuel sector.

### **3.5 Emerging Technologies**

Senegal is making a strategic and well-funded push to harness the power of digital technology as a core driver of its economic emergence. The national digital transformation agenda is not only aimed at creating a new economic sector but also at acting as a powerful catalyst for productivity and innovation across all pillars of the Iron Economy.

The "New Deal Technologique":

The centerpiece of this agenda is the "New Deal Technologique," a comprehensive strategy launched in 2025 to guide the country's digital development through 2034.<sup>70</sup> This ambitious plan, which succeeds the earlier "Digital Senegal 2025" strategy, is backed by a projected budget of 1,105 billion FCFA (approximately \$1.7 billion) and aims to establish Senegal as a leading digital hub in the region.<sup>31</sup>

The strategy is built on several key pillars designed to create a robust digital

ecosystem. These include the comprehensive digitalization of public services through the implementation of a national electronic identity (e-ID) and digital signature (e-Sign) system; the deployment of foundational digital public infrastructure to ensure interoperability; a concerted effort to digitize the vast informal economy to improve its efficiency and integration; and the strengthening of national cybersecurity capabilities.<sup>30</sup>

#### Ambitious Job Creation and Skills Development Goals:

The "New Deal Technologique" sets bold targets for employment and human capital development. By 2034, the plan aims to directly create over 150,000 jobs in the digital economy, foster the growth of more than 500 certified technology startups, and oversee the training of 100,000 graduates in digital fields.<sup>30</sup> This recognizes that a successful digital economy requires a deep pool of local talent. The strategy explicitly calls for bridging the digital skills divide and reforming educational curricula to meet the demands of the market.<sup>72</sup> Educational institutions like ISEP-Thiès are contributing to this effort with relevant programs in Web & Mobile Development and Network & Systems Administration.<sup>44</sup>

While the direct creation of 150,000 tech jobs is a significant goal, the most profound employment impact of the "New Deal Technologique" may be its role as a "force multiplier" for the entire Iron Economy. The strategy's own documents highlight its potential to increase Senegal's overall GDP by 10% and reduce operating costs for traditional businesses by 20-30% through digitalization.<sup>72</sup> This productivity revolution is precisely what can enable traditional SMEs in manufacturing, logistics, and construction to become more competitive, to access new markets, and to grow and hire more people.

A construction firm that adopts project management software to reduce delays, a logistics company that uses a digital platform to track shipments in real-time, or a small manufacturer that leverages e-commerce to reach a wider customer base are all direct beneficiaries of this digital transformation. This reframes the policy imperative. The success of the "New Deal Technologique" should not be measured solely by the number of software developers or data scientists it produces. An equally important metric is the rate of digital technology adoption across the entire landscape of traditional SMEs. This suggests that policy and investment should focus not only on nurturing a vibrant startup ecosystem but also on actively driving and supporting the digital transformation of the existing firms that form the backbone of Senegal's Iron Economy.

## Part IV: The Human Capital Ecosystem: Aligning Supply with Demand

The success of Senegal's ambitious industrial and infrastructure agenda rests on a single, critical foundation: a skilled and adaptable workforce. This section assesses the capacity of the nation's human capital ecosystem—from vocational training to higher education—to produce the quantity and quality of talent required to power the Iron Economy, identifying key strengths, weaknesses, and areas for strategic intervention.

### 4.1 The TVET Landscape: Vocational and Professional Training

The Technical and Vocational Education and Training (TVET) system is the primary pipeline for the technicians and skilled artisans who form the operational backbone of the Iron Economy. Senegal's TVET landscape is diverse, encompassing a range of public and private institutions, but it faces challenges of fragmentation and responsiveness to rapid industrial change.

Key Institutions and Programs:

The system includes a spectrum of institutions, from local vocational training centers (Centres de Formation Professionnelle - CFP) and the national professional and technical training center (CNFPT) to more advanced higher professional institutes.<sup>74</sup> A standout institution is the

**Institut Supérieur d'Enseignement Professionnel de Thiès (ISEP-Thiès).** As a public institute, ISEP-Thiès offers two-year, post-baccalaureate programs that award a *Diplôme d'Institut Supérieur d'Enseignement Professionnel* (DISEP), producing highly sought-after *Techniciens Supérieurs* (Higher Technicians).<sup>44</sup> Its curriculum is directly aligned with the needs of the Iron Economy, with dedicated departments in Transport-Logistics (including rail specialties), Infrastructure (including public works and water management), Energy-Environment (including renewable energy), and Information Technology.<sup>44</sup> The institute's pedagogy is built on an "Approach by Competence" (

*Approche par Compétences* - APC), which emphasizes practical, hands-on skills. This

is reinforced by a strong network of partnerships with over 120 companies, facilitating internships and school-company alternation programs that ensure its training remains relevant to the workplace.<sup>44</sup>

Beyond ISEP-Thiès, the labor market is supplied by a variety of other specialized centers. Analysis of job seeker profiles reveals qualifications from institutions like the Centre de Formation Professionnelle et Technique (CFPT) Sénégal-Japon, the Lycée Technique Industriel Maurice Delafosse, the Centre de Formation aux Métiers Portuaires et à la Logistique (CFMPL), and various regional *Centres d'Enseignement Professionnel* (CEP), such as the one in Thiès which trains welders.<sup>35</sup>

To ensure quality across this diverse landscape, Senegal has developed a national framework of "Norms and Standards of Quality in Education and Formation." This framework applies to the TVET sector and sets benchmarks for key inputs and processes, including the quality of infrastructure, teacher qualifications, and the relevance of curricula.<sup>76</sup>

Despite these strengths, particularly the model provided by ISEP-Thiès, the overall TVET system appears fragmented. The signals from the labor market indicate a demand for very specific and rapidly evolving skills, such as proficiency in the latest versions of logistics software or expertise in new renewable energy technologies.<sup>16</sup> While the national quality framework provides a static set of standards, there appears to be no dynamic, system-wide mechanism to ensure that curricula across all institutions—public and private—are continuously and rapidly updated to reflect these changing industry needs. This creates a high risk of curricula becoming obsolete, producing graduates whose skills are misaligned with the market. ISEP-Thiès's close industry partnership model is an example of best practice, but it is not systemic. To address this, Senegal should consider establishing national, industry-led

**Sector Skills Councils** for each key pillar of the Iron Economy (e.g., a Logistics Skills Council, a Construction Skills Council). These bodies, composed of private sector leaders, union representatives, and education officials, would be empowered to continuously review labor market trends, define occupational standards, and guide the real-time adaptation of TVET curricula across the entire system, ensuring that the skills supply remains tightly synchronized with industrial demand.

**Table 4.1: Directory of Key TVET Institutions and Relevant Program Offerings for the Iron Economy**

Institution Name	Type	Location(s)	Key Relevant Departments/Filières	Diplomas Offered	Noted Industry Partnerships/Approach	Source Snippet(s)
<b>Institut Supérieur d'Enseignement Professionnel (ISEP-Thiès)</b>	Public	Thiès	Transport - Logistique , Infrastructure, Énergie- Environnement, Électronique- Informatique	DISEP (Bac+2)	"Approach by Competence," partnerships with 120+ companies for internships and alternation.	44
<b>Centre de Formation Professionnelle et Technique (CFPT) Sénégal-Japon</b>	Public	Dakar	Electromechanics, Automotive Mechanics, Industrial Maintenance	BT, BTS	Known for high-quality technical training and equipment .	74
<b>Lycée Technique Industriel Maurice Delafosse</b>	Public	Dakar	Construction Métallique , Ouvrage Métallique	CAP, BEP, BT	Historic provider of skilled tradespeople for industry.	38
<b>Centre de Formation aux Métiers Portuaires et à la Logistique</b>	Public/Sec toral	Dakar	Logistique , Transit, Transport	Technicien Supérieur	Specialized training for the port and logistics sector.	35

e (CFMPL)						
<b>Lycée Seydina Limamou Laye</b>	Public	Dakar (Guédiawa ye)	Soudage Industriel	Vocational Diploma	Provides specialized training for industrial welders.	37
<b>Centre d'Enseignement Professionnel (CEP) de Thiès</b>	Public	Thiès	Ouvrages Métallique , Mécanique Automobile	Vocational Diploma	Regional center for foundational vocational skills.	37
<b>Mercy Corps / DisasterReady</b>	NGO / Online	Online	Logistique & Approvisionnement, Gestion de parc de véhicules	Certificate (CILT UK accredited)	Free, accessible online training for foundational supply chain skills.	68
<b>Centre de Formation Professionnelle et Technique (CFPT) de Kédougou</b>	Public	Kédougou	Mining-related trades (inferred)	Varies	Crucial for supplying skills to the regional mining industry.	32

## 4.2 Higher Education and Elite Training



While the TVET system produces the technical workforce, Senegal's universities and elite *grandes écoles* are responsible for cultivating the high-level managerial, engineering, and administrative cadres needed to lead, innovate, and govern the Iron Economy.

At the apex of the public administration training system is the **École Nationale d'Administration (ENA)**. Directly attached to the office of the Prime Minister, ENA is the premier institution for training Senegal's senior civil servants, including the administrators, treasury and tax inspectors, diplomats, and economic investigators who will be responsible for designing, implementing, and regulating national industrial policy.<sup>79</sup> Its graduates populate the highest ranks of the ministries overseeing the Iron Economy.

For high-level technical and engineering expertise, institutions like the **École Polytechnique de Thiès (EPT)** are critical. The EPT is a key source of graduate engineers (*Ingénieurs de Conception*) in fields directly relevant to the Iron Economy, such as Electromechanics, Civil Engineering, and Computer Science, with its alumni sought after in the private sector.<sup>38</sup>

However, a persistent challenge, noted in multiple strategic analyses, is the perceived mismatch between the output of the broader university system and the specific needs of the labor market.<sup>5</sup> Curricula are often criticized for being too theoretical and disconnected from the practical realities and evolving demands of the private sector.

This points to a critical need to reform the training of the nation's future administrative elite. The effectiveness of complex industrial policies—such as managing PPPs, regulating the energy transition, or implementing the "New Deal Technologique"—depends on the civil servants in charge having a sophisticated and practical understanding of technology, global value chains, innovative financing structures, and the specific economic drivers of each industrial sector. Traditional public administration training, focused on law and administrative procedure, may not provide this specialized knowledge in sufficient depth.

Therefore, the curriculum of an institution like ENA should be strategically reformed to infuse it with deep, practical knowledge of industrial and technology policy. This could involve creating mandatory, in-depth modules on industrial strategy, technology policy, infrastructure finance, and the economics of the Iron Economy sectors. These modules could be co-designed and co-taught by seasoned industry professionals, international experts from institutions like the World Bank and AfDB,

and successful private sector entrepreneurs. Such a reform would equip Senegal's future administrative leaders with the specific, modern toolkit required to effectively steer the Plan Sénégal Émergent and navigate the complexities of a 21st-century industrial economy.

### 4.3 Identifying and Bridging the Skills Gap

Synthesizing the analysis of labor demand and the human capital supply system reveals a central challenge for Senegal: a significant and multifaceted skills gap. This gap is not simply a quantitative shortage of workers, but a qualitative mismatch between the pace of industrial and technological change and the capacity of the education and training system to respond. Bridging this gap requires a strategic, ecosystem-wide approach.

On the **demand side**, the Iron Economy requires a complex spectrum of skills. There is a clear need for high-level, university-educated engineers to design and manage complex projects <sup>41</sup>, a broad base of mid-level technicians to operate and maintain industrial systems <sup>34</sup>, and a large contingent of skilled tradespeople (welders, electricians, mechanics) to build and repair physical assets.<sup>37</sup> Critically, all of these roles increasingly require a layer of digital literacy, from using diagnostic software in a garage to operating enterprise resource planning systems in a factory.<sup>65</sup>

On the **supply side**, the education system, particularly at the university level, is frequently criticized for being misaligned with these market needs, producing graduates who lack practical, job-ready skills.<sup>5</sup> The TVET system, while containing pockets of excellence, is fragmented, with varying levels of quality and responsiveness across a multitude of public, private, and NGO providers.

The result is a **skills gap** that manifests in several ways: shortages of qualified personnel for specific technical roles, complaints from employers about the lack of practical skills in new hires, and a large pool of unemployed youth whose formal education has not prepared them for the available jobs.

Closing this gap requires moving beyond traditional, slow-moving education reform. A more agile, "ecosystem" approach is needed, one that tightly integrates formal education, industry-led training, and, crucially, a mechanism for recognizing the skills

that already exist within the vast informal economy. Such an approach would have three core pillars:

315. **Make Formal TVET More Agile:** The establishment of industry-led Sector Skills Councils, as proposed earlier, would institutionalize a rapid feedback loop, ensuring that the curricula of institutions like ISEP-Thiès and the various CFPs remain constantly aligned with real-world needs.
316. **Scale Up Industry-Led Training:** The government should incentivize and co-finance a massive expansion of short-cycle training, apprenticeships, and on-the-job upskilling programs designed and delivered by private sector companies themselves. This is the fastest and most effective way to impart the specific, practical skills that employers require.
317. **Recognize Informal Learning:** A vast reservoir of practical skills exists within the informal sector. An experienced informal mechanic or welder may possess deep expertise but lacks the piece of paper needed for a formal job. The government should establish a national system for the **Recognition of Prior Learning (RPL)**. Such a system would create pathways for experienced informal workers to have their skills formally assessed and certified, providing them with the qualifications needed to access better-paid, more secure jobs on major infrastructure projects and within the formal industrial sector. This approach not only bridges the skills gap but also creates a vital bridge between the informal and formal economies, offering a pathway to upward mobility for millions of workers.

## **Part V: Strategic Synthesis and Multi-Layered Policy Recommendations**

This report has mapped the complex terrain of Senegal's Iron Economy, analyzing the interplay between ambitious national strategy, a dualistic labor market, and a developing human capital ecosystem. The analysis reveals a pivotal moment for the nation, where strategic policy choices will determine whether the current infrastructure and investment boom translates into sustainable, inclusive, and broad-based industrial development. This final section synthesizes the core challenges and presents a matrix of concrete, multi-layered policy recommendations for consideration by national authorities.

## 5.1 Synthesizing the Core Challenges

Senegal's development trajectory is defined by a fundamental tension: a highly ambitious, infrastructure-driven national strategy (PSE) is being erected upon an economic foundation dominated by a low-productivity, informal labor market. This creates three core, interconnected challenges that must be addressed in a coordinated manner:

- 318. **The Industrial Gap:** The manufacturing and industrial base is structurally weak. It is fragmented and dominated by under-capitalized SMEs that struggle to scale, innovate, and compete. This "missing middle" of dynamic, job-creating firms limits the economy's capacity to absorb labor at the rate required to meet the PSE's formal employment goals.
- 319. **The Skills Gap:** The human capital development system is not producing the right quantity or quality of technical and managerial skills at the speed demanded by new infrastructure, new industries, and new technologies. There is a persistent mismatch between the output of the education system and the needs of the labor market, particularly in the critical TVET sector.
- 320. **The Coordination Gap:** Policies for industrial development, infrastructure implementation, and workforce planning are often operating in parallel silos. The lack of a unified, strategic coordination mechanism reduces the collective impact of these efforts, leading to missed opportunities for synergy between infrastructure investment and local economic and human capital development.

## 5.2 Recommendations for Industrial Development

### 321. **Policy 1: The SME "Scale-Up" Program.**

- 1. **Action:** Transition from broad, general support for all SMEs to a targeted, high-impact program focused on identifying and nurturing high-potential firms within the supply chains of the Iron Economy (manufacturing, construction, logistics, energy).
- 2. **Implementation:** This program, potentially managed by an agency like ADEPME or through a dedicated fund, would provide a bundled package of

support: (1) preferential access to finance, leveraging institutions like FONGIP<sup>81</sup>; (2) intensive technical assistance for productivity improvement, quality certification, and management upskilling; and (3) facilitated access to public and private procurement opportunities, particularly as subcontractors on major infrastructure projects.

**322. Policy 2: Mandate Local Content and Skills Transfer in PPPs and Public Contracts.**

1. **Action:** Revise the national Public-Private Partnership law (Law No. 2021-23) and public procurement regulations to include mandatory, measurable, and enforceable targets for local content and human capital development.
2. **Implementation:** All major infrastructure concessions and public works contracts above a certain value threshold should be required to: (1) meet specific targets for sourcing goods and services from local suppliers; (2) subcontract a defined percentage of work to qualified Senegalese SMEs; and (3) fund and implement on-site training and skills certification programs for the local workforce, including those hired from the informal sector.

### 5.3 Recommendations for Workforce Planning

**323. Policy 3: Establish National Sector Skills Councils.**

1. **Action:** Create permanent, industry-led Sector Skills Councils for the most critical pillars of the Iron Economy: (1) Logistics and Transport, (2) Construction and BTP, and (3) Energy and Utilities.
2. **Implementation:** These councils should be legally mandated bodies with representation from leading private sector companies, industry associations, labor unions, and key government bodies (Ministries of Education/TVET, Labor, Industry). Their core functions would be to continuously define occupational skills standards, accredit training programs, and provide real-time data and forecasts on labor market demand to guide the entire TVET and higher education system.

**324. Policy 4: Launch a National Digital Literacy Initiative for the Technical Workforce.**

- **Action:** Integrate mandatory digital skills modules into all traditional trade programs (e.g., welding, electricity, mechanics, construction) across the national TVET system.

- **Implementation:** The Ministry of TVET should develop a standardized curriculum that moves beyond basic computer use to include industry-specific digital competencies, such as the use of diagnostic software, digital measurement tools, mobile applications for project management, and online platforms for sourcing materials and collaborating.

325. **Policy 5: Implement a National Recognition of Prior Learning (RPL)**

**Framework.**

- **Action:** Create a robust, government-backed system to formally assess, validate, and certify the skills and competencies of experienced workers from the informal sector.
- **Implementation:** Establish accredited RPL assessment centers, particularly for high-demand trades in construction and manufacturing. An informal welder with 10 years of experience should be able to undergo a practical assessment and, if successful, receive a formal qualification equivalent to one from a TVET center. This would make a vast pool of existing talent eligible for formal employment on major projects and within industry.

## 5.4 Recommendations for Infrastructure Implementation and Social Inclusion

- **Policy 6: Integrate "Human Capital Plans" into all Major Project Approvals.**
  - **Action:** Mandate that any public or PPP infrastructure project over a specified investment threshold must develop and submit a detailed Human Capital Plan as a condition of its approval, alongside its technical and financial plans.
  - **Implementation:** This plan, to be reviewed by the relevant ministries and the new Sector Skills Councils, would be required to outline: (1) precise projections for local job creation (direct and indirect); (2) a clear strategy for hiring, training, and upskilling local labor; and (3) a concrete plan for workforce transition and redeployment following the completion of the construction phase.
- **Policy 7: Promote Gender-Inclusive Procurement and Training.**
  - **Action:** Move beyond general support for "women's entrepreneurship" to targeted inclusion in high-value industrial sectors.
  - **Implementation:** Implement procurement policies that provide preferential consideration or set-asides for certified women-owned businesses in the

supply chains of public infrastructure projects. Simultaneously, create dedicated scholarship and apprenticeship programs, in partnership with companies and TVET institutions, to increase the number of women trained and certified in non-traditional technical trades (e.g., welding, industrial electricity, heavy equipment operation).

## 5.5 A Forward-Looking Policy Matrix

The following matrix provides a consolidated overview of the proposed policy actions, linking them to the core challenges identified in this report and assigning potential lead agencies and implementation timelines.

**Table 5.5: Policy Recommendation Matrix for Senegal's Iron Economy**

Identified Challenge	Recommended Policy Action	Lead Implementation Agency/Ministry	Key Partners	Priority/Timeline
<b>Fragmented Industrial Base / "Missing Middle"</b>	SME "Scale-Up" Program for Iron Economy Supply Chains	Ministère de l'Industrie et de la PME; ADEPME	FONGIP, Private Banks, Industry Associations, BOS-PSE	<b>High / Short-term (1-2 yrs)</b>
<b>Low Local Participation in Major Projects</b>	Mandate Local Content & Skills Transfer in PPPs/Public Contracts	Primature; Ministère des Finances; ARMP	World Bank/AfDB (as advisors), Private Sector Concessionaires	<b>High / Short-term (1-2 yrs)</b>
<b>TVET Curricula Mismatch with Industry Needs</b>	Establish National Sector Skills Councils (Logistics, Construction, Energy)	Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation (MESRI); Ministère du Travail	Private Sector Federations (e.g., CNP), Labor Unions, ISEP-Thiès	<b>High / Short-term (1-2 yrs)</b>



<b>Skills Gap Between Informal and Formal Sectors</b>	Implement a National Recognition of Prior Learning (RPL) Framework	MESRI / Direction de la Formation Professionnelle	Artisan Chambers, Industry Associations, Labor Unions	<b>Medium / Medium-term (3-5 yrs)</b>
<b>Low Digital Proficiency in Technical Trades</b>	National Digital Literacy Initiative for the Technical Workforce	MESRI / Direction de la Formation Professionnelle	Agence de l'Informatique de l'Etat (ADIE), Tech Companies	<b>Medium / Medium-term (3-5 yrs)</b>
<b>Infrastructure Projects Disconnected from Workforce Planning</b>	Integrate mandatory "Human Capital Plans" into Project Approvals	BOS-PSE; Ministère de l'Economie, du Plan et de la Coopération	All sponsoring ministries (Infrastructure, Energy, etc.), ARMP	<b>High / Short-term (1-2 yrs)</b>
<b>Low Female Participation in Core Iron Economy Sectors</b>	Gender-Inclusive Procurement & Targeted Technical Training for Women	Ministère de la Famille et des Solidarités; ARMP	WIM Sénégal, UN Women, Female Entrepreneur Networks	<b>Medium / Medium-term (3-5 yrs)</b>
<b>Lack of Inter-Ministerial Coordination</b>	Establish a High-Level "Iron Economy Steering Committee"	Primature / BOS-PSE	All relevant Ministries, Private Sector Federations, Donor Partners	<b>High / Short-term (1-2 yrs)</b>

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# The Lavender Economy in Senegal: A Strategic Analysis of Workforce Gaps, Training Ecosystems, and Employment Opportunities

## Expert Report

Prepared for: High-Level Strategic Planners in Government, International Development, and the Private Sector

Date: June 26, 2025

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## Executive Summary

Senegal's Lavender Economy—the ecosystem of care and helping professions spanning health, education, and social services—stands at a critical juncture. It is a sector of immense national importance and profound growth potential, propelled by a confluence of ambitious government policy and inexorable demographic shifts. However, its capacity to meet the nation's needs and fulfill its economic promise is severely constrained by a tripartite challenge: a deep, structural workforce deficit across all key professions; a fragmented and unevenly regulated training ecosystem struggling to align with market demand; and the pervasive informality of care work, a vast, unrecognized economic sphere that disproportionately burdens women and limits their formal economic participation.

The primary drivers of growth are clear and powerful. The government's vision, articulated in the *Plan Sénégal Émergent* (PSE), identifies human capital as a cornerstone of development. This is operationalized through the *Plan National de Développement Sanitaire et Social* (PNDSS) 2019–2028, which mandates a move towards Universal Health Coverage (CSU), and the *Programme d'Amélioration de la Qualité, de l'Équité et de la Transparence* (PAQUET) in education. These policies

create significant top-down demand for nurses, midwives, teachers, and social workers. This demand is met by a potent bottom-up demographic pressure: a rapidly growing, youthful population that requires extensive educational and health services, alongside a gradual increase in life expectancy that signals a future need for elder care.

Despite this clear need, the labor market analysis reveals critical dysfunctions. While formal job opportunities are present, particularly in urban centers like Dakar, they are insufficient to absorb the available talent pool or meet national needs. The market is characterized by a reliance on temporary or internship-based positions, particularly for entry-level roles, which may suppress wages and career stability. In emerging fields such as mental health and disability support, employment is almost entirely dependent on the project-based funding of non-governmental organizations (NGOs), raising questions of sustainability.

The talent supply chain is equally strained. While public universities like UCAD provide high-level training, the landscape is dominated by a burgeoning and poorly regulated private vocational sector. This has created a "professionalization paradox": the rapid increase in the quantity of graduates has led to a crisis of quality, prompting professional associations for nurses and midwives to advocate strongly for the establishment of regulatory orders to enforce standards.

Furthermore, the entire formal Lavender Economy is implicitly subsidized by a vast, invisible informal care sector. Unpaid domestic and care work, performed overwhelmingly by women, is valued at a staggering 30% of Senegal's GDP. This unremunerated labor, while essential, traps women in economic precarity and represents the single largest barrier to their full participation in the formal workforce.

Emerging frontiers, particularly the digital transformation of health and education, offer a path forward but also risk creating new inequalities. Initiatives in telehealth, mHealth, and data analytics are promising, but they require a concerted effort to build the surrounding ecosystem of regulation, infrastructure, and digital literacy.

To unlock the potential of the Lavender Economy, this report puts forth a series of strategic recommendations. For the government, the priority must be to empower professional orders to regulate training quality and to launch a national strategy to formalize the informal care sector. For educational institutions, the focus must be on aligning curricula with market needs, particularly in soft skills, management, and digital literacy. For employers and investors, the imperative is to move beyond short-

term recruitment to long-term workforce development and to explore public-private partnerships in care services. By creating a virtuous cycle of coherent policy, quality-controlled training, and decent employment, Senegal can transform the Lavender Economy from a sector facing a crisis into a powerful engine of inclusive growth, social well-being, and sustainable development.

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## Section 1: The Macro-Context of Senegal's Lavender Economy

The employment landscape within Senegal's Lavender Economy is not a product of chance but the outcome of a dynamic interplay between deliberate national strategy, powerful demographic forces, and deep-seated socioeconomic structures. Opportunities for care professionals are being actively shaped by a "policy-demography pincer": the top-down pressure of ambitious government plans demanding a larger, more skilled workforce, and the bottom-up pressure of a young, rapidly growing population creating an inescapable human need for services. Understanding this macro-context is fundamental to analyzing the specific job roles and career pathways that constitute this vital sector.

### 1.1. Policy and Investment Landscape: The Engine of Demand

The demand for a robust Lavender Economy workforce is explicitly codified in Senegal's highest-level national strategies. These policies provide the framework, justification, and, increasingly, the funding for expanding health, education, and social services, thereby acting as the primary engine of formal employment demand.

The **Plan Sénégal Émergent (PSE)** serves as the nation's overarching development blueprint, aiming to achieve economic emergence by 2035. A central pillar of the PSE is the strategic development of human capital, recognizing that a healthy, well-educated population is a prerequisite for long-term, sustainable growth.<sup>1</sup> This high-level commitment legitimizes and prioritizes public investment in the core sectors of the Lavender Economy, framing them not as social expenditures but as essential investments in the nation's economic future.

Descending from this macro-strategy is the **Plan National de Développement Sanitaire et Social (PNDSS) 2019-2028**, the central policy instrument for the health and social action sector. Its explicit and resolute goal is the attainment of Universal Health Coverage (CSU).<sup>2</sup> The PNDSS is built on three strategic orientations (OS) that directly translate into workforce demand. OS1 focuses on strengthening governance and financing. OS2, "Development of Health and Social Action Service Offer," is the most direct driver of employment, calling for the strengthening of maternal and child health, ensuring the availability of quality medicines, and improving the fight against major diseases. OS3, "Promotion of Social Protection," aims to extend coverage to the informal sector and rural populations.<sup>5</sup> These orientations create a clear and quantifiable need for a wide array of professionals, including nurses, midwives, public health specialists, community health workers, and health system administrators, to staff new and upgraded facilities and manage expanded programs.<sup>2</sup>

In parallel, Senegal's **Education Sector Strategies** have evolved to address critical gaps in access and quality, creating sustained demand for education professionals. The *Programme d'Amélioration de la Qualité, de l'Équité et de la Transparence (PAQUET) 2013-2025* succeeded earlier programs with a focus on improving learning outcomes and management of the sector.<sup>1</sup> These policies have driven growth in student enrollment at all levels, necessitating the recruitment of teachers, early childhood educators, and administrative staff.<sup>7</sup> More recent strategic orientations emphasize gender equity and inclusion, aiming to ensure that all children, regardless of gender or specific needs, can access quality education in a safe environment.<sup>8</sup> A significant recent development is the strategic pivot towards digitalization. The planned training of approximately 210,000 teachers and administrative staff in digital tools and artificial intelligence (IA) under the 2025-2029 strategy signals a major future demand for digitally-literate educators, curriculum developers with tech skills, and IT support personnel within the education system.<sup>9</sup>

Finally, cross-cutting policies in **Digital Health and Social Protection** are creating new, modern roles. The *Plan Stratégique Santé Digitale (PSSD) 2018-2023* aims to leverage technology to improve access and quality of care through telehealth and mHealth, requiring a workforce capable of managing these new systems.<sup>10</sup> Concurrently, Senegal's participation in initiatives like the UN's

*Global Accelerator for Jobs and Social Protection* indicates a commitment to expanding social safety nets, which necessitates the recruitment of experts in social policy, protection systems, and implementation.<sup>11</sup> Together, these policies form a

powerful, state-led engine generating sustained and evolving demand for a diverse Lavender Economy workforce.

## 1.2. Demographic and Epidemiological Imperatives: The Human Need

While policy provides the strategic direction, it is the country's demographic and health profile that creates the non-negotiable, on-the-ground demand for care services. Senegal's population dynamics and disease burden present a clear and urgent case for a massive expansion of the Lavender Economy.

**Population Dynamics:** Senegal is experiencing a profound demographic transformation. The population has grown exponentially, from just under 5 million in 1976 to over 18.1 million in 2023, and is projected to reach over 30 million by 2050, representing a 68% increase from today.<sup>12</sup> This growth is sustained by a high fertility rate, which, despite a significant decline, stood at 4.0 children per woman in 2023.<sup>14</sup> The most defining characteristic of this population is its youth. The median age is a mere 19 years, and approximately 61% of the population is under the age of 25.<sup>15</sup> This massive youth bulge creates a continuous and immense demand for pediatric healthcare, vaccination programs, primary and secondary education, and youth-focused social and employment services. The pressure on the education system is particularly acute, with UNICEF reporting over 1.5 million school-aged children out of school in 2016.<sup>17</sup>

**Health Indicators and Disease Burden:** Senegal has made commendable progress in public health, yet significant challenges remain that necessitate a larger and more skilled health workforce.

326. **Maternal and Child Health:** The focus on maternal and child health in the PNDSS is a direct response to demographic realities. While the synthetic fertility index is decreasing, the absolute number of births remains high.<sup>14</sup> Key indicators show both progress and persistent needs. Access to prenatal care from a qualified provider is now at 97%, and 92% of births occur in health facilities.<sup>14</sup> These successes, however, increase the workload on existing facilities and professionals. The dramatic reduction in under-five mortality, from 121 deaths per 1,000 live births in 2005 to 40% in 2023, is a major achievement but underscores the continued need for qualified midwives, pediatric nurses, and

robust vaccination programs to sustain and build upon this progress.<sup>14</sup>

327. **Life Expectancy and Aging:** A positive outcome of improved health is increasing longevity. Life expectancy at birth has risen significantly, reaching an average of 68.9 years in 2023.<sup>12</sup> While the population aged 65 and over remains small (around 3-4.7%), this number will inevitably grow.<sup>13</sup> This demographic shift signals the nascent but certain future demand for geriatric care services—including home care, specialized nursing, and geriatric medicine—a sub-sector that is currently underdeveloped and largely informal.<sup>19</sup>

328. **The Dual Disease Burden:** Like many developing nations, Senegal confronts a dual epidemiological challenge. It continues to battle communicable diseases such as malaria, tuberculosis, and HIV.<sup>6</sup> At the same time, it faces a rising tide of non-communicable diseases (NCDs) like hypertension, diabetes, and cancer, which are often chronic and costly to manage.<sup>6</sup> The PNDSS explicitly targets this dual burden, creating a diverse demand for clinical specialists, public health educators, community health workers for prevention and follow-up, and mental health professionals.<sup>5</sup>

### 1.3. The Duality of the Labor Market: Formal vs. Informal Care Work

A defining feature of Senegal's Lavender Economy is its profound duality. The sector is split between a visible, regulated formal economy and a vast, largely invisible informal economy. This division has critical implications for employment quality, economic measurement, and gender equality. Any analysis of employment opportunities would be incomplete without acknowledging the immense role of the informal care sector, which both underpins and is marginalized by the formal system.

The **formal sector** comprises employment within public institutions (hospitals, health posts, schools), registered private clinics and schools, and the extensive network of national and international NGOs. This is the world of official job contracts, regulated salaries (in principle), and social security contributions. Recruitment for these roles is visible on national job platforms such as Emploisenegal.com, Senjob.com, and EmploiDakar.com, as well as on international development portals like ReliefWeb, Devex, and UNJobs.<sup>21</sup> This formal segment is the primary focus of government workforce planning and policy interventions like the PNDSS and PAQUET.

The **informal sector**, however, is the dominant reality of work in Senegal. It accounts for an estimated 95% of non-agricultural employment and contributes around 33% of the nation's GDP.<sup>28</sup> Within the Lavender Economy, this informality manifests in several critical ways:

- **Unpaid Domestic and Care Work:** This is the bedrock of the care economy. It includes cooking, cleaning, fetching water, and caring for children and the elderly. This work is performed overwhelmingly by women, who dedicate an average of 4 hours and 9 minutes per day to these tasks, compared to just 30 minutes for men.<sup>30</sup> This enormous, unmonetized labor, which one study estimated could be worth up to 30% of Senegal's GDP, represents a massive, hidden subsidy to the entire economy.<sup>32</sup> It is the invisible work that allows formal sector workers to go to their jobs, yet it traps millions of women in a cycle of unpaid labor, limiting their own opportunities for education, formal employment, and economic autonomy.
- **Informal Care Providers:** This category includes paid but unregulated workers such as domestic aides, nannies ("*bonnes*"), and informal caregivers for the elderly or persons with disabilities. These workers often lack formal contracts, work long hours for low pay, and have no access to social protection like health insurance or pensions.<sup>28</sup> Their employment is precarious and their contribution to health and well-being, while significant, is not captured in official workforce statistics.
- **Gender Dynamics:** The gendering of care work is stark. Women dominate the informal care space, whether paid or unpaid.<sup>34</sup> This social norm, which assigns care responsibilities primarily to women, not only creates barriers to their formal employment but also devalues care work as a profession. The formal Lavender Economy is not immune to this, with professions like nursing and midwifery being heavily female-dominated.<sup>37</sup>

The existence of this massive informal care sector creates a fundamental tension. The formal system's ability to function depends on this "informal care subsidy." A formally employed nurse or teacher can only fulfill her professional duties because another woman, often a relative or a low-paid domestic worker, is providing the necessary care at home. Therefore, policies aimed at expanding the formal Lavender Economy without simultaneously addressing the conditions and professionalization of the informal sector will eventually face a structural limit, as the pool of informal caregivers is not infinite and their opportunity cost is rising. This duality is perhaps the single most important structural feature of Senegal's Lavender Economy.



**Table 1: Policy-to-Employment Matrix: Linking National Strategies to Lavender Economy Roles**

National Strategy/Policy	Key Objective(s)	Implied Workforce Demand	Specific Roles Created/Strengthened
<b>Plan Sénégal Émergent (PSE)</b>	Achieve economic emergence through human capital development. <sup>1</sup>	Broad-based demand for a more skilled and healthier workforce.	Cross-cutting roles in all sub-sectors; justification for investment in training.
<b>Plan National de Développement Sanitaire et Social (PNDSS) 2019-2028</b>	Achieve Universal Health Coverage (CSU); improve maternal/child health; fight communicable and non-communicable diseases; develop human resources. <sup>2</sup>	Increased quantity and quality of clinical, community, and administrative health staff at all levels of the health pyramid.	Registered Nurse, Midwife, Community Health Worker, Public Health Educator, Medical Specialist, Hospital Administrator, M&E Specialist, Health Information System Specialist.
<b>Programme d'Amélioration de la Qualité, de l'Équité et de la Transparence (PAQUET) 2013-2025</b>	Improve access, quality, and equity in education; reduce out-of-school rates. <sup>1</sup>	More qualified teachers for basic and secondary education; expansion of early childhood development services.	Primary School Teacher, Secondary School Teacher, Early Childhood Educator, School Director, Curriculum Developer, Education Coordinator.
<b>Stratégie Éducative 2025-2029 (Digital Focus)</b>	Modernize the education system through digital tools and AI; train 210,000 personnel. <sup>9</sup>	Demand for digitally literate educators and technical support staff.	Digitally-skilled Teacher, Online Educator, Education Technology Specialist, Administrative Staff with IT skills.
<b>Plan Stratégique Santé Digitale</b>	Promote quality care through Telehealth	Need for professionals to	Telehealth Counselor, mHealth

<b>(PSSD) 2018-2023</b>	and mHealth; improve prevention via digital information dissemination. <sup>10</sup>	develop, manage, and facilitate digital health platforms and services.	Facilitator, Health Data Analyst, Digital Health Platform Coordinator, Health Systems Strengthening Consultant (Digital Focus).
<b>Loi d'Orientation Sociale (2010) &amp; Social Protection Initiatives</b>	Promote the rights and inclusion of persons with disabilities; extend social protection to vulnerable groups. <sup>11</sup>	Need for specialized care providers and social protection experts to manage and implement inclusion programs.	Disability Support Worker, Social Worker, Case Manager, Child Protection Officer, Social Protection Expert.

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## Section 2: Sub-Sector Deep Dive: Employment Opportunities and Pathways

Building on the macro-context, this section provides a granular analysis of the labor market across the defined sub-sectors of Senegal's Lavender Economy. By examining data from national and international job portals, CV databases, and programmatic reports, a detailed picture emerges of real-world supply and demand, role specifications, and the specific dynamics shaping each professional domain. A recurring theme is the geographic centralization of formal opportunities in Dakar, with regional posts often tied to the finite cycles of NGO projects, posing a significant challenge to the national goal of equitable service delivery.

### 2.1. Healthcare Services: Clinical and Community Roles

This sub-sector forms the backbone of the Lavender Economy, driven directly by the PNDSS's goal of Universal Health Coverage. The demand for a wide range of clinical and community-based professionals is consistently high, though the market is

characterized by a mix of formal, stable positions and a significant number of entry-level internships.

## Role Inventory and Specifications

283. **Registered Nurse (Infirmier d'État):** This is one of the most in-demand roles. Job advertisements appear frequently across public, private, and corporate sectors. For instance, private companies like Concentrix recruit occupational health nurses in Dakar.<sup>40</sup> General job portals feature numerous listings for state-certified nurses (*Infirmier Diplômé d'État*), often specifying a need for experience but also offering entry points for new graduates through internships (*stagiaire*).<sup>21</sup> Candidate profiles on platforms like Emploisenegal.com reveal a diverse training landscape, with graduates from the national public institution, École Nationale de Développement Sanitaire et Social (ENDSS), as well as numerous private schools like Institut AMDI and Institut Santé Plus.<sup>42</sup> While many roles are based in urban centers like Dakar and Thiès, employers often require national geographic mobility, reflecting the need to staff facilities across the country.<sup>42</sup>
284. **Midwife (Sage-femme):** The critical need for midwives is a direct consequence of Senegal's demographic profile and its policy focus on reducing maternal and neonatal mortality. The job market actively seeks state-certified midwives for roles in both public and private health facilities.<sup>46</sup> Responsibilities are comprehensive, covering the full spectrum of maternal care: prenatal consultations, managing deliveries, postnatal care for mother and child, and providing family planning services.<sup>50</sup> CVs show that midwives are trained in a variety of institutions, from regional health centers like the one in Mbour to private schools such as EPISE and Institut Santé Service.<sup>47</sup> The demand is national, with candidates expressing willingness to work across all regions.<sup>47</sup>
285. **Laboratory Technician (Technicien de Laboratoire):** Essential for diagnostics, there is a steady demand for technicians proficient in biology, biochemistry, bacteriology, and parasitology.<sup>41</sup> Graduates often hold a BTS (Brevet de Technicien Supérieur) or a diploma from institutions like the École Supérieure Polytechnique (ESP) de Dakar, ENDSS, or private schools such as Institut Santé Service.<sup>41</sup> These roles are concentrated in hospitals and private analysis laboratories, primarily in urban areas.

286. **Community Health Worker (Agent de Santé Communautaire - ASC):** The ASC is a cornerstone of Senegal's community-based health strategy, particularly vital for extending the reach of the health system into rural and underserved areas. Employment opportunities are frequently driven by NGOs and UN agencies like UNICEF, which hire consultants to map and support ASC networks.<sup>53</sup> The role involves health promotion, disease prevention, sensitization campaigns, and providing basic care and referrals.<sup>55</sup> Training is often provided through dedicated vocational centers, such as the Centre de Formation Professionnelle de Dagana, which equips ASCs with skills in nursing and midwifery assistance.<sup>55</sup>
287. **Other Clinical and Support Roles:** The healthcare ecosystem relies on a range of other professionals. Job portals show consistent demand for **Pharmacists** and **Pharmacy Assistants** <sup>56</sup>, **Nutritionists/Dietitians** to address malnutrition and promote healthy eating <sup>58</sup>, and **Nursing Assistants (Aide-Soignant)** who provide essential support for hygiene and comfort, particularly in hospitals and clinics.<sup>60</sup> The prevalence of listings for *Aide-Soignant* and nursing interns (*stagiaires*) points to a significant "intern economy," which serves as a primary entry mechanism for graduates but may also reflect a reliance on lower-cost labor to fill staffing gaps.

## Market Context

Demand in this sub-sector is fundamentally policy-driven by the PNDSS and its focus on high-impact interventions, often financed by international partners like UNFPA, USAID, and the World Bank.<sup>5</sup> A pronounced gender imbalance persists, with nursing and midwifery remaining heavily female-dominated professions, as evidenced by student enrollment data from training schools.<sup>37</sup>

## 2.2. Mental Health and Psychosocial Support (MHPSS)

The MHPSS sub-sector in Senegal is nascent but growing, driven by increasing recognition of its importance in national health policy and the acute needs identified

by humanitarian organizations. Employment here is largely sustained by the non-governmental sector, which acts as a "first responder" in establishing and defining professional roles.

## **Role Inventory and Specifications**

288. **Psychologist / Mental Health Counselor:** With an estimated 40 psychiatrists for a population of over 18 million, the gap in mental healthcare is immense. Formal job postings for psychologists are less common than for other clinical roles but are emerging. These are typically advertised by NGOs like ALIMA for clinical psychologists to support specific projects, such as COVID-19 response teams, or by UN agencies.<sup>65</sup> Candidate profiles indicate that professionals in this field typically hold a Master's degree in clinical psychology or a related field.<sup>67</sup>
289. **MHPSS Specialist:** This role is almost exclusively found within the humanitarian and development sectors. Employers like COOPI, Handicap International (HI), and Save the Children recruit MHPSS specialists to provide support to vulnerable populations, including refugees, migrants, and survivors of gender-based violence (GBV).<sup>69</sup> These positions often require specialized expertise in trauma-informed care and familiarity with international standards like the IASC Guidelines on MHPSS. Many of these roles are roving or regional positions based in Dakar, with responsibilities covering multiple countries in West Africa.<sup>70</sup>
290. **Social Worker (Mental Health Focus):** Social workers play a crucial role in the MHPSS ecosystem by providing case management, counseling, and connecting individuals to care. Their training at institutions like ENTSS equips them with foundational skills in psychosocial support.<sup>72</sup>

## **Market Context**

The primary driver of employment in MHPSS is currently the NGO and UN sector, responding to humanitarian needs and specific project goals. However, a significant policy signal for future growth exists within the PNDSS 2019-2028. Its "Ligne d'action 47" explicitly calls for the promotion of mental health, the development of

community-based mental health strategies, and the creation of integrated addiction treatment centers.<sup>5</sup> This indicates a forthcoming shift where the government is expected to play a larger role in creating public sector employment for mental health professionals, transitioning the field from a donor-dependent niche to an integrated component of the national health system.

### 2.3. Social Services and Community Outreach

This sub-sector is critical for addressing the social determinants of health and well-being, focusing on case management, child protection, and community engagement. While a public framework exists, the NGO sector remains a dominant force in driving employment and innovation.

#### Role Inventory and Specifications

291. **Social Worker (Travailleur Social / Assistant Social):** There is a consistent demand for trained social workers. The public sector employs them through the *Direction de l'Action Sociale* and its regional services, which work in areas like juvenile justice.<sup>72</sup> However, with public sector recruitment being limited in past years, many graduates find opportunities with NGOs and private entities.<sup>72</sup> Job postings from organizations as diverse as the microfinance institution FANSOTO in Ziguinchor and Médecins Sans Frontières (MSF) in Dakar illustrate the breadth of the role, which can range from supporting the economic empowerment of women to providing psychosocial support to migrants.<sup>73</sup> The premier training institution for these roles is the École Nationale des Travailleurs Sociaux Spécialisés (ENTSS), whose graduates are sought after.<sup>24</sup>
292. **Child Protection Officer:** This is a highly specialized role primarily situated within the UN and international NGO sphere. Organizations like Terre des Hommes recruit for positions such as Regional Protection Coordinator based in Dakar, requiring deep expertise in child protection systems, case management, and inter-agency coordination.<sup>77</sup> These roles often have a regional scope, overseeing programs in multiple countries.
293. **Community Outreach Coordinator:** These professionals are essential for

implementing programs at the grassroots level. They are employed by a wide range of organizations to manage sensitization campaigns, facilitate community dialogues, and mobilize local actors. Roles like "Agents Formateurs VE" for myAgro involve training community members, demonstrating the direct link between program goals and community-level employment.<sup>22</sup>

## **Market Context**

The social work profession in Senegal has a long history and a formal training structure anchored by the ENTSS.<sup>72</sup> The field is becoming increasingly organized through the establishment of bodies like the

*Fédération Sénégalaise des Travailleurs Sociaux (FSTS)*, which aims to unite various professional associations and advocate for the profession.<sup>79</sup> This move towards greater professionalization is crucial for defining standards and improving career pathways for the thousands of social service professionals working across the country.

### **2.4. Education and Early Childhood Development (ECD)**

Fueled by demographic pressure and national education strategies, this sub-sector presents one of the largest areas of need and opportunity within the Lavender Economy. The challenges are immense, from a critical shortage of preschool teachers to the need to improve the quality of basic education.

## **Role Inventory and Specifications**

294. **Preschool / Early Childhood Educator (Éducateur de Jeunes Enfants):** This is an area of critical workforce shortage. UNICEF highlights that only 17% of children are enrolled in preschool, indicating a vast, unmet need for ECD services.<sup>17</sup> This gap creates significant opportunities. Job postings from private



institutions like the

*Institut Académique des Bébés* (IAB) and NGOs show a clear demand for trained educators and assistants specializing in the 0-2 age range.<sup>80</sup> Other positions, like "Chargé(e) de l'Education de la Petite Enfance et des Jeunes," require a higher qualification (Bac+4) and involve project coordination and supervision, often in regional settings like Ziguinchor.<sup>81</sup>

295. **Primary and Secondary School Teacher (Professeur des écoles / d'enseignement moyen secondaire):** Demand is consistently high from both the public system and the large, parallel network of private and international schools. The French international school network (AEFE), for example, regularly recruits teachers in Dakar, including those with specialized certifications like the CAPEI for inclusive education.<sup>82</sup> Postings for local schools often require a minimum of a Bac+5 degree, teaching experience, and fluency in French, with additional languages being an asset.<sup>83</sup> The job market includes both full-time positions and temporary or replacement roles.<sup>82</sup>
296. **School Administrator / Director (Directeur d'école):** As the number of schools grows, so does the need for effective management. Job postings for school directors appear for private institutions, requiring significant teaching experience (4-7 years) and management skills.<sup>86</sup> CV databases also show profiles of individuals with experience as school directors, often in the private sector.<sup>88</sup>

## Market Context

The education sector is heavily influenced by government policy, particularly the PAQUET strategy, which aims to improve quality and equity.<sup>1</sup> It is also a highly unionized environment, with powerful syndicates like the G7 coalition (which includes SAEMSS and CUSEMS) playing a major role in negotiating salaries, working conditions, and influencing national education policy.<sup>90</sup> A major societal challenge that shapes the demand for educators is the large number of out-of-school children, including those in informal Quranic schools (

*daaras*). This creates a need for innovative educational models, bridging programs, and specialized educators who can help reintegrate these children into the formal system.<sup>1</sup>

## 2.5. Specialized Care Services

This sub-sector, encompassing care for the elderly and persons with disabilities, is the least formalized segment of Senegal's Lavender Economy. Employment is overwhelmingly concentrated in the informal family-based system and the NGO sector. However, demographic trends and a growing rights-based discourse point to this area as a significant future growth frontier.

### Role Inventory and Specifications

329. **Elder Care (Geriatric Care):** This field is in its infancy. Direct job postings for roles like "Geriatric Care Coordinator" or "Elderly Caregiver" are virtually non-existent on major Senegalese job platforms.<sup>93</sup> The government has a national plan for the elderly, the *Plan Sésame*, which provides some subsidized care, and there are a few specialized reference centers like the one managed by IPRES in Dakar.<sup>20</sup> Some private medical services, such as SOS Médecin Sénégal, offer at-home nursing care for the elderly on a fee-for-service basis.<sup>97</sup> However, the vast majority of elder care is provided informally by family members, predominantly women.<sup>19</sup> With only six geriatricians in the country, the professional capacity is extremely limited, but the aging of the population will make this a critical area for workforce development.<sup>20</sup>
330. **Disability Support:** Employment opportunities in disability support are almost exclusively driven by the NGO and volunteer sectors. Organizations like Handicap International (HI) are key players, implementing projects focused on the professional and social insertion of persons with disabilities. They recruit for roles like "Chef de projet Emploi & Handicap," which involve managing partnerships and promoting an inclusive labor market in regions like Dakar, Thiès, and Ziguinchor.<sup>39</sup> Other organizations, like Globalong, facilitate volunteer and student internship placements for roles such as specialized teacher, social assistant, and psychologist to work in centers supporting children and adults with disabilities.<sup>99</sup>

## Market Context

This sub-sector operates at the margins of the formal economy. While Senegal has ratified the UN Convention on the Rights of Persons with Disabilities and has a *Loi d'Orientation Sociale* (2010) that provides a legal framework for inclusion, implementation remains a significant challenge.<sup>39</sup> Social stigma remains a major barrier to employment and inclusion.<sup>100</sup> The lack of a formal, structured market for specialized care services means that families bear almost the entire burden. This points to a massive latent market. As social norms evolve and the population ages, the demand for professionalized, formal services in both elder and disability care is set to grow exponentially, representing one of the most significant long-term employment opportunities within the Lavender Economy.

## Section 3: The Talent and Training Ecosystem

The capacity of Senegal's Lavender Economy to expand and meet the demands outlined in national policies is fundamentally dependent on the talent and training ecosystem. This supply-side analysis reveals a complex and fractured landscape, comprising prestigious public universities, a burgeoning and unevenly regulated private vocational sector, and influential professional networks. A critical diagnosis of this ecosystem shows significant misalignments between training output and the evolving needs of the labor market, particularly concerning quality, practical skills, and preparation for emerging professional roles.

### 3.1. Mapping the Training Infrastructure: A Fractured Landscape

The production of care professionals in Senegal occurs across a spectrum of institutions, from elite public universities to a proliferation of private vocational schools.

## Public Higher Education

The public university system serves as the traditional anchor for high-level professional training in health, education, and social work.

46. **Université Cheikh Anta Diop (UCAD)** in Dakar is the flagship institution. Its **Faculté de Médecine, de Pharmacie et d'Odontologie (FMPO)** is the primary national source for doctors, pharmacists, and dental surgeons, offering a range of undergraduate and specialized postgraduate programs (DES, DU, Masters).<sup>101</sup> UCAD also hosts several key professional schools (*grandes écoles*) critical to the Lavender Economy:
- The **École Nationale de Développement Sanitaire et Social (ENDSS)** is the main public institution for training state-certified nurses, midwives, and various health technicians (e.g., laboratory, sanitation).<sup>42</sup> It is a primary feeder for the public health system.
  - The **École Nationale des Travailleurs Sociaux Spécialisés (ENTSS)** is the premier institution for social work, training social assistants and specialized educators. It offers state diplomas (DEAS) and has a history dating back to the 1960s, making it a cornerstone of the social work profession in Senegal and West Africa.<sup>72</sup>
  - The **Faculté des Sciences et Technologies de l'Éducation et de la Formation (FASTEF)** is the principal public institution for training teachers for the secondary school system, offering programs like the CAECEMS (Certificat d'Aptitude à l'Enseignement dans les Collèges d'Enseignement Moyen Secondaire).<sup>107</sup>
47. **Regional Universities** are playing an increasingly important role in decentralizing higher education. The **Université Gaston Berger (UGB) de Saint-Louis** has a UFR des Sciences de la Santé that offers professionalizing programs, including a Licence in Biological Analysis and Master's degrees in Nursing and Obstetrical Sciences, Public Health, and an advanced Master's in Biophysics and Medical Imaging.<sup>109</sup> Similarly, the **Université Iba Der Thiam de Thiès** has a UFR Santé that provides a full medical degree cycle and has begun offering specialized diplomas (DES) in fields like urology and gynecology.<sup>111</sup>

## Private and Vocational Sector

Parallel to the public system, there has been an explosion of private training institutions, particularly in the health sector. This expansion has dramatically increased the quantity of graduates but has also raised serious concerns about quality and regulation.

48. A multitude of private health schools now operate across the country, including well-known names like **Institut Santé Service (ISS)**, **Sup de Santé**, **Institut Africaine de Santé Moderne (IASM)**, and the **Institut Universitaire Professionnel en Santé (IUP-SANTÉ)**.<sup>41</sup> These schools offer diplomas for roles such as nurse, midwife, and nursing assistant.
49. The issue of **quality control** is paramount. A 2024 report from the president of the Syndicate of Private Health School Directors (SYDEPS) highlighted the regulatory chaos. He noted that while there are dozens of schools, only about six are officially authorized (*habilités*) to train nurses and midwives, and of those, only three possess institutional accreditation.<sup>115</sup> An inspection by the Ministry of Health reportedly found that 48 out of 92 inspected schools were not compliant with standards.<sup>115</sup> This "professionalization paradox"—where an attempt to solve the quantity shortage has created a severe quality crisis—is a central challenge. Graduates from unaccredited schools may hold diplomas that are not recognized for public service employment or further study abroad, creating a disillusioned and underemployed cohort.
50. Specialized private training is also emerging to fill specific niches. The **École Nouvelle en Éducation Spécialisée (ENES)**, for example, offers a three-year program to train specialized educators to work with vulnerable populations, a direct response to a gap in the public training system.<sup>116</sup>

## Digital and Specialized Training

A new tier of training is developing to meet the demands of a modernizing economy. The **Master in Information Technology for Health (MTIS)**, offered by the École Supérieure Multinationale des Télécommunications (ESMT) in partnership with UCAD and Grenoble INP (France), is a prime example. This program is explicitly designed to

produce professionals capable of leading digital transformation in the health sector, targeting graduates from health, IT, and management backgrounds for roles like health IT consultant, telemedicine project manager, and health tech entrepreneur.<sup>117</sup>

### 3.2. The Influence of Professional Networks and Associations

Professional associations and unions are powerful actors in Senegal's Lavender Economy. They serve as platforms for advocacy, contribute to professional development, and act as guardians of professional standards, often filling the regulatory void left by the state.

#### 51. Health Sector Associations:

- The **Association Nationale des Infirmiers et Infirmières Diplômés d'Etat du Sénégal (ANIIDES)** is a key representative body for nurses. It is a member of international nursing federations and actively advocates for the profession. A primary demand is the creation of a national Order of Nurses to regulate the profession, secure its status, and ensure quality control in both training and practice—a direct response to the proliferation of low-quality private schools.<sup>119</sup>
- The **Association Nationale des Sages-Femmes d'Etat du Sénégal (ANSFES)** is a highly active and dynamic association for midwives. It provides a strong support network, organizes events like the International Day of the Midwife, and engages in public health campaigns.<sup>122</sup> Its most significant advocacy effort is the call for the full implementation of the 2017 law creating a national Order of Midwives, which they see as essential for guaranteeing quality services and professional standards.<sup>122</sup>

#### 52. Social Work Networks:

- The **Fédération Sénégalaise des Travailleurs Sociaux (FSTS)** acts as an umbrella organization for the social work profession. It brings together various associations and unions, such as the *Syndicat national des Travailleurs sociaux (SNTS)*.<sup>79</sup> The FSTS plays a role in professional representation on the international stage (e.g., within the IFSW) and organizes conferences to promote knowledge exchange and professional development.<sup>79</sup>

#### 53. Education Sector Unions:

- The education sector is characterized by a strong and fragmented union landscape. The **G7**, a coalition of the seven largest teacher unions, is a formidable force in social dialogue with the government.<sup>90</sup> This group includes powerful unions like the **Syndicat autonome des Enseignants du Moyen Secondaire (SAEMSS)** and the **Cadre unitaire syndical des enseignants du moyen secondaire (CUSEMS)**.<sup>91</sup> At the higher education level, the **Syndicat Autonome de l'Enseignement Supérieur (SAES)** represents university faculty.<sup>126</sup> These unions are central to negotiating salaries, working conditions, and career progression for teachers and have a significant influence on national education policy.<sup>91</sup>

### 3.3. Analysis of Critical Skill and Training Gaps

Despite the expansion of training institutions, a significant gap persists between the skills of graduates and the needs of the labor market. This misalignment manifests in several key areas:

54. **The Quality vs. Quantity Dilemma:** As noted, the rapid, unregulated growth of private schools has produced a high quantity of graduates, but their quality is highly variable.<sup>115</sup> Employers in the health sector are faced with a "market for lemons," where it is difficult to distinguish between a competently trained professional and one from a substandard institution. This uncertainty can depress wages for all graduates and leads to a lack of trust in the system.
55. **The Soft Skills Deficit:** Technical and clinical skills are the primary focus of most curricula. However, employers across all sub-sectors consistently emphasize the need for crucial soft skills. Job postings and candidate profiles frequently mention the importance of **communication, teamwork, empathy, leadership, listening skills, and adaptability**.<sup>21</sup> A purely technical education that neglects the development of these interpersonal competencies leaves graduates ill-prepared for the human-centered reality of care work.
56. **The Management and Leadership Gap:** While Senegal produces excellent clinicians and teachers, there is a noticeable gap in training for mid-level and senior management positions. The Lavender Economy needs effective **Clinic Managers, Hospital Administrators, School Directors, and Health Systems**



**Consultants.**<sup>86</sup> However, dedicated, accessible training pathways for these management roles are less developed than for frontline service delivery roles. This creates a bottleneck for career progression and can lead to inefficiencies in the management of health and education facilities.

57. **The Digital Literacy Gap:** The government's strategic push towards a digital economy is creating a skills gap that the training system is only beginning to address. The ambition for digital health and education, outlined in the PSSD and the new education strategy, is running ahead of the general digital competency of the existing workforce.<sup>9</sup> While specialized programs like the Master in IT for Health are emerging, a systemic and large-scale effort is required to upskill the hundreds of thousands of current professionals to ensure they can effectively use the new digital tools being deployed. This gap represents a major barrier to the modernization of the entire Lavender Economy.

## **Section 4: Emerging Frontiers and Strategic Opportunities**

Beyond the established roles in health and education, Senegal's Lavender Economy is poised for growth in several emerging frontiers. The digital transformation of care, the potential professionalization of the vast informal care sector, and the role of NGOs as incubators for new professions represent significant strategic opportunities. Capitalizing on these frontiers requires a forward-looking approach to workforce development, regulation, and investment.

### **4.1. The Digital Transformation of Care: Telehealth, mHealth, and Data Analytics**

The convergence of technology and care services is creating a new sub-sector with immense potential to overcome traditional barriers of distance and access. This transformation is being driven by both government policy and private sector ingenuity, though its full realization is a systems-level challenge, not merely a technological one.

## The Policy Push and Private Sector Innovation

Senegal has a formal national strategy, the *Plan Stratégique Santé Digitale (PSSD) 2018-2023*, which aims to systematically integrate ICT into the health sector to improve efficiency and effectiveness.<sup>10</sup> This top-down vision is complemented by a vibrant, bottom-up startup ecosystem. Companies like

**Senconsult** are offering direct-to-consumer online medical consultations.<sup>129</sup>

**Njureel** has developed a mobile platform and voice service to improve maternal health follow-up, winning presidential innovation awards.<sup>130</sup>

**Wergu** provides a mobile app to help users locate pharmacies and check medicine availability, in partnership with the national pharmacists' syndicate.<sup>130</sup> And

**Telewer** has created a solar-powered telemedicine kit that allows nurses in remote areas to conduct diagnostics and transmit data to doctors for remote consultations.<sup>130</sup> These initiatives prove that the technological capacity and entrepreneurial spirit exist within Senegal.

## Identified Employment Opportunities and the Implementation Gap

This digital shift is creating a new category of jobs, though they are not yet widespread on traditional job boards.

331. **Telehealth Counselor / Remote Health Consultant:** Platforms like Senconsult and Telewer create a market for doctors, specialists, and counselors to provide services remotely, offering flexibility and extending their reach beyond urban centers.<sup>129</sup>
332. **mHealth Facilitator:** The successful operation of applications like Njureel requires a support team to manage the platform, provide user support (often in local languages), and act as a liaison between patients and healthcare professionals.
333. **Health Data Analyst:** As health services are digitized, from electronic patient records to M&E data for donor projects, the need for professionals skilled in data management and analysis grows.<sup>10</sup> Job boards already feature postings for "Data

Analyst" and "Business Analyst" roles that require skills in Stata, data visualization, and database management.<sup>132</sup> Some candidate profiles explicitly list "Analyse de données en santé" (Health Data Analysis) as a competence.<sup>132</sup>

334. **Digital Health Platform Coordinator:** The management of complex digital health systems, such as a telemedicine cloud network or a national health information system, requires coordinators with both technical and administrative skills to ensure smooth operation and interoperability.<sup>134</sup>

Despite this potential, a significant implementation gap remains. The emergence of these jobs is hindered by the lack of a comprehensive ecosystem to support them. Key challenges cited by innovators include the need for a clear legal and regulatory framework for data privacy, electronic prescriptions, and professional ethics in telemedicine.<sup>130</sup> Furthermore, inconsistent internet connectivity, especially in rural areas, and the need for widespread digital literacy training for both professionals and the public are major barriers.<sup>136</sup> The creation of specialized training programs, like the

**Master in IT for Health** at ESMT, is a crucial first step, but a broader, systemic effort is needed to align policy, regulation, infrastructure, and education to unlock the full employment potential of digital health.<sup>117</sup>

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**Table 2: Emerging Digital Health Roles and Required Skill Development Pathways**

Emerging Role	Core Responsibilities	Required Technical Skills	Required Soft Skills	Potential Training Pathways
<b>Telehealth Counselor / Remote Health Consultant</b>	Provide remote medical/psychological consultations; manage virtual patient interactions; issue e-prescriptions (once legal).	Proficiency with telemedicine platforms; secure data handling; digital record keeping.	Excellent remote communication ("webside manner"); empathy; time management; adaptability.	Medical/Psychology degree + CME certification in Telehealth; specialized training offered by platforms.
<b>Health Data Analyst</b>	Collect, clean, and analyze	Stata, R, Python; SQL; data	Analytical thinking;	Master's in Public Health

	health data from HIS, surveys, or apps; create dashboards and reports for M&E and decision-making.	visualization tools (Power BI, Tableau); CAPI software (SurveyCTO); statistical analysis.	attention to detail; problem-solving; ability to communicate complex data to non-technical audiences.	(Epidemiology/B iostats); Degree in Statistics with health focus; specialized data science bootcamps.
<b>mHealth Facilitator</b>	Onboard and support users of mobile health applications; provide first-level technical support; liaise with clinical staff; conduct community outreach.	Platform-specific software proficiency; basic troubleshooting; CRM software.	Patience; clear communication (including in local languages); cultural sensitivity; problem-solving.	On-the-job training by app developers; background in community health or social work is an asset.
<b>Digital Health Platform Coordinator</b>	Oversee the technical and administrative management of a health IT system (e.g., HIS, telemedicine cloud); ensure interoperability and security; manage vendor relationships.	Health Information Systems (e.g., DHIS2); network management; cloud computing basics; project management software.	Project management; systems thinking; stakeholder coordination; strong organizational skills.	Master in IT for Health (MTIS) <sup>117</sup> ; Degree in Health Informatics or Information Systems Management.
<b>Online Health Educator</b>	Develop and deliver health education content through digital channels (webinars, social media, e-learning modules);	Content management systems (CMS); video editing software; social media management tools; e-learning authoring tools.	Strong writing and presentation skills; engaging online presence; community management.	Degree in Public Health/Health Promotion + certification in digital marketing or instructional design.

	manage online learning communities.			
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## 4.2. Pathways to Professionalizing Informal Care

The largest, yet most overlooked, opportunity for employment growth in the Lavender Economy lies in the professionalization of the informal care sector. This vast domain, built on the unpaid and underpaid labor of women, represents a significant source of potential economic value and a critical lever for both women's empowerment and the strengthening of the entire formal care system.

### The Scale of the Opportunity

The informal care sector is immense. As established, unpaid domestic and care work, if monetized, could represent up to 30% of Senegal's GDP.<sup>32</sup> Women perform the vast majority of this labor, spending over 4 hours per day on these tasks.<sup>30</sup> This includes caring for children, the elderly, and managing the household. This reality acts as a major brake on the economy, limiting women's ability to participate in formal employment or entrepreneurship.<sup>35</sup> Transforming even a fraction of this informal activity into formal, paid employment would create hundreds of thousands of jobs, boost GDP, and expand the tax base.

### Potential Interventions: A "Triple Win" Strategy

Investing in the formalization of informal care offers a "triple win": it empowers women, grows the formal economy, and strengthens the formal Lavender Economy workforce.

335. **Win for Women's Empowerment:** Creating pathways to formal employment as certified childcare providers or elder care assistants provides women with

decent wages, formal contracts, and access to social protection, moving them from precarity to professional status.

336. **Win for the Formal Economy:** This shift turns previously unrecognized labor into a measurable and taxable economic sector, contributing directly to national growth.
337. **Win for the Lavender Economy Workforce:** The availability of quality, affordable, and reliable childcare and elder care services is a critical enabler. It frees up other skilled professionals—especially women, who might otherwise have to leave their jobs to care for children or parents—to pursue and remain in demanding careers as doctors, nurses, and teachers, thereby helping to alleviate the very workforce shortages this report identifies.

Key interventions to achieve this include:

338. **Adopting the "3R" Framework:** UN Women advocates for a strategy to **Recognize, Reduce, and Redistribute** unpaid care work.<sup>31</sup> In Senegal, this would mean:
1. **Recognize:** Conducting national time-use surveys to officially measure and value unpaid care work in national accounts.<sup>30</sup>
  2. **Reduce:** Investing in public infrastructure that reduces the drudgery of domestic tasks, such as accessible water points, rural electrification, and labor-saving technologies like milling machines.<sup>30</sup>
  3. **Redistribute:** Providing public services like affordable community-based childcare centers (*crèches*) and elder care facilities, and launching campaigns to promote a more equitable sharing of domestic responsibilities between men and women.<sup>30</sup>
339. **Formalization through Training and Certification:** Developing nationally recognized vocational training and certification programs for childcare providers, home health aides, and geriatric assistants. This would create a quality standard, increase the value and status of care work, and provide a clear pathway to formal employment.

#### 4.3. The NGO and Development Sector as a Career Catalyst

The non-governmental and international development sector plays a unique and vital role in Senegal's Lavender Economy. It functions not only as a major employer but

also as an incubator for new professions and a crucial catalyst for career development.

## A Major Employer and Pioneer

International organizations like Médecins Sans Frontières (MSF), Handicap International (HI), Terre des Hommes, and World Vision, alongside UN agencies such as UNICEF, UNFPA, and UNDP, are significant employers of care professionals in Senegal.<sup>22</sup> An analysis of job postings on specialized platforms like ReliefWeb, Devex, and Coordination Sud confirms their dominant role, particularly in certain sub-sectors.<sup>25</sup>

They are the primary source of employment in emerging or under-resourced fields. As seen in the MHPSS and Disability Support sub-sectors, NGOs are often the first to create and define roles like **MHPSS Specialist**, **Child Protection Coordinator**, and **Disability Inclusion Project Manager**. They introduce international best practices and standards (e.g., IASC guidelines), effectively building the professional foundations for these fields before they are fully integrated into the public system.<sup>39</sup>

## A Pathway for Career Advancement

For many Senegalese professionals, the NGO sector provides an invaluable career pathway. It offers opportunities to gain practical experience in **program management, monitoring and evaluation (M&E), grant writing, financial administration, and community outreach**—skills that are highly transferable to senior roles in the public and private sectors. Working in an international context also provides exposure to global networks and opportunities for advanced training. For many, a role as a Project Officer or Field Volunteer in an NGO is the first step on a career ladder that can lead to national or regional leadership positions.<sup>25</sup> This function as a career catalyst is essential for building the next generation of leaders for the entire Lavender Economy.



## Section 5: Strategic Recommendations and Implementation Roadmap

The analysis of Senegal's Lavender Economy reveals a sector of immense potential hampered by structural challenges. To bridge the gap between the current reality and the national vision for a healthy, educated, and cared-for populace, a series of concerted, strategic actions are required. The following recommendations are tailored to the key stakeholders who have the power to effect change: government ministries, educational institutions, employers, and professionals themselves.

### 5.1. For Government and Policymakers (Ministries of Health, Education, Public Service, Finance)

The government holds the primary responsibility for creating the enabling environment for a functional and equitable Lavender Economy.

340. **Recommendation 1: Establish and Empower Professional Orders to Regulate Quality.** The most critical step to address the crisis of quality in professional training is to establish and empower independent regulatory bodies.
1. **Action:** Aggressively accelerate the full implementation of the 2017 law creating the **Order of Midwives**.<sup>124</sup> Provide it with the necessary budget and legal authority to function effectively.
  2. **Action:** Fast-track the legislative process to create a national **Order of Nurses**, a key demand of the Association Nationale des Infirmiers et Infirmières (ANIIDES).<sup>120</sup>
  3. **Mandate:** Grant these Orders the clear mandate to: (1) set and enforce national standards for training curricula; (2) establish a rigorous process for accrediting all private training institutions, and close those that do not comply; and (3) manage professional registration and enforce a code of ethics. This is the most effective mechanism to protect the public and restore confidence in the qualifications of care professionals.
341. **Recommendation 2: Launch a National Strategy for the Formalization of Informal Care Work.** To unlock the economic potential of the care economy and advance gender equality, the government must move to formalize the vast

informal care sector.

1. **Action:** Develop a multi-ministry strategy based on the "Recognize, Reduce, Redistribute" framework.<sup>30</sup>
  2. **Action:** Task the relevant vocational training authorities with developing national competency standards and certification programs for **childcare providers** and **elder care assistants**.
  3. **Action:** Introduce fiscal incentives, such as tax credits or subsidies, for households and businesses to use certified, formal care services. This will create market demand for the newly certified professionals and begin the process of transforming unpaid labor into decent work.<sup>32</sup>
342. **Recommendation 3: Bridge the Digital Health Implementation Gap.** To capitalize on the promise of digital health, a dedicated and coordinated effort is needed to build the required ecosystem.
1. **Action:** Create a high-level, inter-ministerial task force (including Health, Digital Economy, Justice, and Finance) to accelerate the implementation of the *Plan Stratégique Santé Digitale*.<sup>10</sup>
  2. **Action:** Prioritize the rapid development and passage of a clear legal and regulatory framework governing **data privacy, electronic health records, and the legality of e-prescriptions**. This regulatory clarity is a prerequisite for private investment and public trust.<sup>130</sup>
  3. **Action:** Launch pilot programs for the public reimbursement of telemedicine services through the national health insurance scheme, in partnership with private innovators, to create a sustainable business model for telehealth.<sup>136</sup>

## 5.2. For Educational and Vocational Institutions (Universities, Training Centers)

Training institutions are on the front line of supplying the workforce and must become more responsive to the realities of the labor market.

- **Recommendation 1: Align Curricula with Market Realities and Future Needs.** There is a clear disconnect between what is taught and what employers need.
  - **Action:** Establish formal, mandatory advisory boards for all Lavender Economy training programs, with representation from public, private, and NGO employers. Use this feedback to continuously update curricula.
  - **Action:** Integrate mandatory modules on **soft skills** (communication,

teamwork, empathy), **management fundamentals**, and **digital literacy** into all health, education, and social work programs.

- **Action:** Strengthen the quality and duration of mandatory practical placements (*stages*), ensuring they provide genuine learning experiences and are jointly supervised by the institution and the host employer.
- **Recommendation 2: Develop Modular and Bridging Programs for Career Progression.** The current system is too rigid, creating a divide between vocational and university tracks.
  - **Action:** Create flexible, accredited pathways that allow graduates of vocational programs (e.g., *Aide-Soignant*) to "top-up" their diplomas to a professional bachelor's degree.
  - **Action:** Develop more applied professional master's programs in fields like Health Administration, Education Management, and Social Program Management to provide a clear career ladder for experienced practitioners who wish to move into leadership roles.
- **Recommendation 3: Scale Up Training in Emerging Fields.** Proactively develop and expand programs in high-demand, low-supply areas identified in this report.
  - **Action:** In partnership with the Ministry of Health and NGOs, create the first accredited training programs for **geriatric care assistants** and **MHPSS paraprofessionals**.
  - **Action:** Expand offerings in **specialized education** and **health data analytics** in partnership with the Ministries of Education and Health to meet the needs of the PAQUET and PSSD strategies.

### 5.3. For Employers, NGOs, and Investors

Employers and investors must shift from being passive consumers of talent to active co-creators of a sustainable workforce.

- **Recommendation 1: Invest in Long-Term Workforce Development.** A short-term, low-cost approach to staffing is unsustainable.
  - **Action:** Move beyond a reliance on a precarious "stagiaire" economy.<sup>21</sup> Develop structured, paid internship programs that serve as a direct pipeline to full-time employment.

- **Action:** Budget for and provide continuous professional development for all staff, particularly in digital skills and management, to improve retention and service quality.
- **Action:** Actively partner with training institutions by offering quality placements, providing guest lecturers, and participating in curriculum advisory boards.
- **Recommendation 2: Champion Public-Private Partnerships (PPPs) in Care Services.** There is a significant market opportunity in providing formal care services.
  - **Action for Investors:** Explore investment opportunities in building and operating mid-tier, quality-assured, and affordable **childcare centers** and **elder care facilities** (including assisted living and home care agencies).
  - **Action for NGOs:** Transition successful, donor-funded care models (e.g., in disability support or community health) into sustainable social enterprises that can generate revenue and scale their impact beyond project cycles.
- **Recommendation 3: Advocate for Systemic Change.** Leverage on-the-ground experience to advocate for a healthier market environment.
  - **Action:** Publicly and privately support the government's efforts to establish and empower professional orders. This is in the long-term interest of all employers, as it guarantees a baseline of quality in the workforce.
  - **Action:** Participate actively in the policy dialogue around digital health and the formalization of care, sharing practical insights to ensure new regulations are workable and effective.

#### 5.4. For Professionals and Job Seekers

Individuals seeking to build a career in Senegal's Lavender Economy can take strategic steps to position themselves for success.

343. **Recommendation 1: Prioritize Skills for the Future.** To stand out in a competitive market, focus on acquiring skills in high-growth areas.
- **Action:** Actively pursue training in **digital literacy**, as this is becoming a core requirement across all sectors.<sup>9</sup>
  - **Action:** Seek out opportunities to develop **management and administrative skills**, as this is a key gap and a pathway to leadership.<sup>128</sup>

- **Action:** Consider specializing in emerging fields with less competition, such as **geriatrics, MHPSS, or specialized education**.<sup>20</sup>
  - **Action:** Develop proficiency in **English**, as it is frequently listed as a requirement or an asset, particularly in the NGO and international sectors.<sup>65</sup>
344. **Recommendation 2: Leverage the NGO Sector for Career Advancement.**  
The development sector is more than just a job; it is a strategic training ground.
- **Action:** View entry-level roles in NGOs as an opportunity to gain invaluable and highly transferable skills in project management, M&E, reporting, and cross-cultural communication.<sup>25</sup> This experience is highly valued by public and private sector employers for senior roles.
345. **Recommendation 3: Engage Actively with Professional Associations.**  
These networks are crucial for professional growth and advocacy.
- **Action:** Join and actively participate in associations like **ANIIDES, ANSFES, and FSTS**.<sup>79</sup> This provides access to networking, continuous learning opportunities, and a platform to contribute to the strengthening and professionalization of one's chosen field.
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## Appendices

297. Appendix A: Comprehensive Database of Lavender Economy Roles  
(A structured dataset covering all identified roles with complete specification details, suitable for policy planning and workforce development initiatives.)
298. Appendix B: Directory of Key Training Institutions  
(A document listing institutions by program type, including curriculum highlights, duration, entry requirements, accreditation status, and contact information.)
299. Appendix C: Directory of Professional Associations and Networks  
(A mapping of associations and unions, detailing their role in job placement, professional development offerings, and contact information.)

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# **The Orange Economy of Senegal: A Nationwide Employment Map and Strategic Roadmap for Inclusive Growth**

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

### **1.1. Overview of Key Findings**

This report presents a systematic examination of employment opportunities within Senegal's vibrant and expanding cultural and creative industries, often termed the Orange Economy. The findings reveal a dynamic sector characterized by a profound dualism: a vast, resilient informal economy, which serves as the primary engine of grassroots employment, coexists with a rapidly professionalizing formal sector and a burgeoning class of globally-connected digital freelancers. While official statistics are nascent, evidence suggests the Orange Economy is a significant and growing contributor to national employment and GDP, offering critical opportunities for youth and women. The landscape is anchored by robust national cultural institutions, a calendar of high-impact international events like the Dak'Art Biennale, and a forward-looking policy framework. However, a significant gap persists between policy intent and the realities faced by the majority of creative workers, whose potential is constrained by informality, limited access to finance, and a concentration of opportunities in the capital, Dakar.

### **1.2. The Strategic Imperative**

The development of Senegal's creative industries represents a strategic imperative

for the nation's future. As the government pursues its ambitious development goals under the *Plan Sénégal Émergent* (PSE), which aims to transform Senegal into an emerging economy by 2035, the Orange Economy offers a powerful engine for economic diversification, sustainable job creation, and the enhancement of Senegal's international cultural influence.<sup>1</sup> The sector's inherent reliance on human capital, creativity, and digital technology aligns perfectly with the PSE's objectives of promoting human capital and structural economic transformation. By strategically nurturing this ecosystem—bridging the gap between the informal and formal, the urban and rural, and the traditional and digital—Senegal can unlock a new frontier of inclusive growth, reduce youth unemployment, and solidify its position as a cultural and creative leader on the African continent.

### 1.3. Summary of High-Priority Recommendations

To capitalize on this strategic opportunity, targeted actions are required from key stakeholders:

346. **Government of Senegal:** The primary focus must be on closing the chasm between policy and practice. This involves moving beyond the laudable promulgation of the *Law on the Status of the Artist* to its aggressive and accessible implementation, creating simplified pathways for informal workers to formalize their activities and access social protection and financial services.
347. **Education and Training Sector:** A fundamental reform of arts and culture curricula is needed. Educational institutions must prioritize the integration of practical skills in digital literacy, creative entrepreneurship, financial management, and intellectual property rights to equip the next generation of creatives for the modern marketplace.
348. **Development Partners and Investors:** Funding and technical assistance should be strategically directed towards two key leverage points: (1) supporting the formalization and scaling of informal creative enterprises, particularly those led by women and youth, and (2) investing in digital infrastructure and training to connect rural and regional creative clusters to national and global markets.

## Part II: The Landscape of Senegal's Creative Economy

## 2.1. Macroeconomic and Policy Context

### The Orange Economy's Economic Footprint

The cultural and creative industries are a formidable global economic force, accounting for an estimated 3.1% of global GDP and 6.2% of all employment.<sup>2</sup> While precise, consolidated data for Senegal remains a challenge, a composite analysis reveals a sector of significant and underestimated importance. The national economy, which has achieved lower-middle-income status, faces structural challenges, including a vast informal sector that accounts for approximately 33% of GDP and the majority of employment.<sup>1</sup>

Within this context, the creative industries are a vital source of livelihood. A comprehensive 2023 study by the Laboratoire de Recherche sur les Transformations Économiques et Sociales (LARTES-IFAN) underscores that the sector holds enormous potential for wealth and job creation.<sup>4</sup> However, its economic contribution is difficult to quantify precisely because the overwhelming majority of creative entrepreneurs begin their journey in the informal sector, relying on personal or family funds rather than formal credit.<sup>4</sup> This reality suggests that official figures likely undervalue the Orange Economy's true weight. The artisan sector alone, a core component of the creative industries, has been estimated to comprise 80% to 90% of the industrial fabric and 60% of the active population.<sup>5</sup> The government's own

*Plan Sénégal Émergent* identifies tourism, cultural industries, and artisanry as sectors capable of generating between 40,000 and 125,000 jobs, signaling high-level recognition of its potential.<sup>6</sup>

### The Policy and Legal Framework

Senegal has established one of the most progressive policy frameworks for culture in Africa, demonstrating a long-standing commitment to the sector. The country's 2006 ratification of the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions laid the groundwork for a robust cultural policy.<sup>4</sup> This commitment culminated in the landmark

**Law on the Status of the Artist and Culture Professionals**, promulgated in 2021 with its five implementing texts validated in March 2024.<sup>7</sup> This law, supported by the UNESCO-Aschberg program, is a direct response to the 1980 UNESCO Recommendation concerning the Status of the Artist. It aims to fundamentally improve the professional, social, and economic conditions of creative workers by addressing critical areas such as training, social security, employment, income, taxation, and mobility.<sup>7</sup>

While this legal framework is exemplary, its success hinges on bridging the gap between its formal provisions and the lived reality of the sector's largely informal workforce. The LARTES-IFAN study reveals that most cultural actors start their enterprises informally, face significant challenges in managing finances, and rarely access bank loans.<sup>4</sup> This disconnect presents a central challenge: the very individuals the law is designed to protect are often the least equipped to navigate the formal systems required to benefit from it. The government's planned national tour to popularize the law is a crucial first step, but it must be followed by the creation of accessible, low-barrier on-ramps to formalization if the policy is to achieve its transformative potential.<sup>7</sup>

## **International Positioning: The UNESCO Creative City Designation**

Dakar's designation as a UNESCO Creative City of Media Arts in 2014 provides a powerful platform for international engagement and sector development.<sup>8</sup> This status is not merely an honorific but a strategic lever for growth. The city's vision is to use culture, creativity, and innovation—particularly digital media arts—as drivers of local development.<sup>8</sup> Key objectives include supporting local media arts projects, fostering cooperation with other cities in the network (especially between the Global North and South), and creating bridges between Senegalese and international creative actors.<sup>8</sup>

This designation amplifies Dakar's role as a creative metropolis, home to major cultural events and a vibrant community of artists.<sup>8</sup> It provides a framework for attracting investment, fostering collaboration, and positioning the city as a continental hub for the digital creative economy, a role actively supported by local organizations like Kër Thiossane, which has championed digital arts training since 2002.<sup>9</sup>

## 2.2. Foundational Pillars: Institutions and Events

### Cultural Infrastructure as Economic Anchors

Senegal's creative economy is anchored by a network of venerable national institutions that serve as both cultural flagships and significant economic entities. These structures are major employers of a wide range of professionals, including curators, artists, technicians, administrators, and service staff. The capital, Dakar, hosts the most prominent of these:

- 349. **The Théâtre National Daniel Sorano**, inaugurated in 1965, is the national stage and home to three prestigious ensembles: the National Ballet, the National Dramatic Troupe, and the Traditional Lyrical Ensemble.<sup>11</sup>
- 350. **The Grand Théâtre National Doudou Ndiaye Rose**, a modern 1,800-seat facility, further expands the country's capacity for large-scale productions.<sup>13</sup>
- 351. **The Musée des Civilisations Noires (MCN)**, opened in 2018, is a monumental institution dedicated to celebrating and reappropriating African history and heritage on a global scale.<sup>14</sup>
- 352. Other key institutions include the **Musée Théodore Monod d'Art Africain (IFAN)**, which houses vast collections of West African art, and the **Galerie Nationale d'Art**, a primary venue for contemporary visual artists.<sup>14</sup> Together, these institutions form a critical infrastructure that supports formal employment and provides a platform for creative expression.

## Event-Driven Economy: Festivals and Biennales

Senegal's reputation as a cultural powerhouse is cemented by its hosting of major international events that generate powerful, albeit seasonal, economic waves. These festivals create thousands of temporary jobs in logistics, hospitality, technical production, and artistic performance, while simultaneously driving cultural tourism and enhancing the nation's global brand.

353. **The Dak'Art Biennale of Contemporary African Art:** Established in 1989, Dak'Art is the continent's most important and longest-running art event.<sup>17</sup> It transforms Dakar every two years into a global hub for artists, curators, collectors, and critics.<sup>18</sup> Its economic impact is substantial; the 2018 edition was reported to have generated over 8 billion FCFA (approximately \$13.5 million) in economic activity.<sup>19</sup> Beyond direct revenue, the Biennale stimulates local businesses, supports cultural infrastructure development, and provides an unparalleled platform for African artists to gain international recognition and access global markets.<sup>18</sup> The event's success has been a key factor in positioning art as a strategic economic driver for the country.<sup>21</sup>
354. **The World Festival of Black Arts (FESMAN):** Though held less frequently, FESMAN has a profound historical and economic legacy. The inaugural festival in 1966 was a seminal post-independence event that, despite running a financial deficit of 158 million FCFA, was viewed by its organizers as an invaluable investment in culture whose results were "worth more than all the billions in the world".<sup>22</sup> It spurred significant investment in urban and touristic infrastructure and positioned Senegal as a global leader in Pan-African cultural diplomacy.<sup>23</sup> The third edition in 2010 commanded a budget of over 48 billion FCFA (approximately \$82 million), demonstrating the massive scale of economic activity these mega-events can mobilize, covering everything from infrastructure rehabilitation to artist fees and international logistics.<sup>25</sup>

## Part III: Sectoral Employment Analysis and Opportunity Mapping

This section provides a granular analysis of employment opportunities across ten key sub-sectors of Senegal's Orange Economy. Each sub-sector is introduced with a

qualitative overview, followed by a detailed database table documenting roles across twelve analytical dimensions. This data is synthesized from national job portals, international freelance platforms, government and NGO reports, and educational institution data to provide a comprehensive and actionable map of the creative labor market.

### 3.1. Music and Performing Arts

The Senegalese music and performing arts sector is a rich tapestry weaving together centuries-old traditions of griots and storytellers with the globally recognized rhythms of Mbalax and a dynamic urban hip-hop scene. The sector's formal structure is supported by national institutions like the Théâtre National Daniel Sorano and the Grand Théâtre National, which house national ballet, drama, and lyrical ensembles.<sup>11</sup> Professionalization is driven by organizations such as the Association des Métiers de la Musique (AMS), which advocates for artists' rights, social protection, and training, and the Association des Managers et Agents d'Artistes du Sénégal (AMAA).<sup>26</sup> Training pathways range from informal apprenticeships to formal programs at institutions like EHA, Addams, and Dakar Music School.<sup>28</sup> Job opportunities are found in performance, production, management, and education, with a notable demand for multidisciplinary skills in the digital era.

**Table 1: Employment Opportunity Database - Music and Performing Arts**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
Musician / Interpreter	Music & Performance	Dakar, Saint-	High	Freelance/Gig,	Proficiency with	Mastery of trad	Self - promotional	Informal apprenticeship	Entry to Senior	Per-gig fees ,	AMS <sup>26</sup> , AMAA



<b>repré- sente</b>	Performing Arts	Louisiana, Regional Centers; Live events, Studio sessions		Informal, Contractual	musical instruments (Kora, Guitar, Piano, etc.) , Live performance equipment	traditional rhythms (e.g. , Mbalax, Sabar), Vocal techniques (Griot style, etc.)	Online, Networking , Stage presence, Collaboration	Discography, EHA , Addams , Dakar Music School <sup>28</sup> , Conservatoire National Doukha Sec <sup>13</sup>		Royalties, Contract fees (variable )	<sup>27</sup> , Live venues, Festivals (Dakar 'Art, FESMAN)
<b>Ingénieur du Son / Technicien du Son</b>	Music & Performing Arts	Dakar, Major event locations	Medium	Freelance/Gig, Contractual	Soundboards, DAWs (Pro Tools, Logic Pro) , Microphone setup,	N/A	Problem-solving, Attention to detail, Communication with artists	On-the-job training, Specialized workshops (e.g. , Hollywood University	Mid-level	Per-event/project fees : 50,000 - 200,000 FCF/A	Production houses, Event organizers, AMS <sup>26</sup> , ATACS <sup>31</sup>

					Live sou nd mixi ng			y <sup>30)</sup> , Inte rnat ional certi ficat ions			
<b>Pro duc teur de Mus iqu e</b>	Mus ic & Perf ormi ng Arts	Dak ar, Rem ote	Med ium	Free lanc e, Con trac tual (for a labe l)	DA Ws (FL Stu dio, Able ton Live ), MIDI cont rolle rs, Beat mak ing, Mixi ng & mas terin g	N/A	Proj ect man age men t, Artis t dev elop men t, Digit al mar keti ng, Tren d anal ysis	Add ams (pro fess iona l pro gra m) <sup>28</sup> , Onli ne cour ses (e.g. , Cou rser a, Berk lee Onli ne), Self - taug ht	Mid to Seni or	Per- trac k fees , Perc enta ge of roya lties , Sala ried (rar e)	Upw ork <sup>32</sup> , Sou ndcl oud, Mus ic labe ls, AMS <sup>26</sup>
<b>Man age r d'Ar tist e</b>	Mus ic & Perf ormi ng Arts	Dak ar	Med ium	Con trac tual, Free lanc e	Con trac t neg otiat ion, Tour	N/A	Net wor king , Stra tegi c	Busi ness /Ma nag eme nt deg	Mid to Seni or	Perc enta ge of artis t's earn	AM AA <sup>27</sup> , Indu stry net

					boo king , Fina ncia l man age men t		plan ning , Publ ic relat ions , Co mm unic atio n, Soci al med ia man age men t	ree, Exp erie nce in the mus ic indu stry, AM AA me mbe rshi p <sup>27</sup>		ings (15- 20% typi cal), Reta iner fee	wor ks, Dire ct outr eac h to artis ts
<b>Cha rgé de Mis sion Mus iqu e (Cul tura l Cen ter)</b>	Mus ic & Perf ormi ng Arts	Dak ar, Sain t- Loui s	Low	For mal (CD D/C DI)	Proj ect man age men t soft war e, Bud geti ng tool s	N/A	Cult ural proj ect man age men t, Gra nt writ ing, Part ners hip dev elop men t, Eve nt coor	Mas ter in Cult ural Man age men t (e.g. , UGB <sup>33</sup> ), Exp erie nce in cult ural insti tutio ns	Mid - Lev el	Sala ried (e.g. , Gra de 7 at Insti tut Fran çais <sup>34</sup> )	Insti tut Fran çais <sup>34</sup> , Goe the- Insti tut <sup>35</sup> , Cult ural cent ers

							dina tion				
<b>Dan seu r / Cho régr aph e</b>	Mus ic & Perf ormi ng Arts	Dak ar, Regi onal Cen ters	Med ium	Con trac tual, Free lanc e, For mal (Nat iona l Ball et)	Dive rse dan ce tech niqu es (tra ditio nal, cont emp orar y, hip- hop )	Mas tery of trad ition al Sen egal ese dan ces (Sab ar, etc.)	Cre ativi ty, Tea chin g skill s, Proj ect man age men t	Écol e des Sabl es, Con serv atoir e Nati onal Dou ta Sec k <sup>13</sup> , Jall oré Dan se Thé âtre <sup>13</sup>	Entr y to Seni or	Per- perf orm anc e fees , Tea chin g fees , Sala ried (Nat iona l Ball et)	Thé âtre Nati onal Dani el Sora no <sup>11</sup> , Cult ural cent ers, Dan ce com pani es

### 3.2. Fashion and Textile Design

Senegal's fashion sector is a vibrant industry defined by a dynamic interplay between a vast, decentralized network of informal tailors (*tailleurs*) and a burgeoning high-fashion scene. This formal segment is propelled by internationally recognized events like Dakar Fashion Week and the creative vision of designers who blend traditional textiles with contemporary aesthetics.<sup>36</sup> There is a growing global appetite for African design, creating opportunities for export-oriented brands that emphasize sustainability and local craftsmanship, such as traditional weaving and dyeing techniques.<sup>37</sup> The educational landscape is professionalizing, with institutions like SEA Academy, ISMOD, and the École Nationale des Arts offering state-recognized

diplomas (CAP, BEP) in styling, pattern-making, and couture, feeding skilled talent into the market.<sup>36</sup>

**Table 2: Employment Opportunity Database - Fashion and Textile Design**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Styliste - Modéliste</b>	Fashion & Textile	Dakar, Saint-Louis	Medium	Formal (for a brand), Freelance, Entrepreneurial	Sketching, Pattern making (modélisme), Draping, Textile knowledge	Understanding of traditional fabrics (wax, bogolan, pagne tissé)	Trend forecasting, Collection development, Branding, Communication	SEA Academy (DCP), ISMOD, École Nationale des Arts <sup>36</sup> , International fashion schools	Entry to Senior	Salaried (brand): 250k-700k FCF A/month; Per-collection fees (freelance)	Dakar Fashion Week, Fashion houses (Sartoris en, So Fato) <sup>36</sup> , Goethe-Institut (model AB) <sup>40</sup>
<b>Couturier /</b>	Fashion &	Nationwide	High	Informal,	Industrial &	Mastery of	Client relat	Apprentices	Entry to Mas	Per-piece	Local wor

<b>Tailleur</b>	Textile	(urban and rural)		Entrepreneurial, Formal (workshop employee)	domestic sewing machines, Garment construction, Alterations	traditional garment styles (e.g. , Bou bou) , Embroidery	ions , Measurement taking, Basic accounting	hip (Master Tailor), Vocational training (CAP Couture) <sup>36</sup> , CAF <sup>39</sup>	ter	payment (highly variable), Salaried (workshop): 75k-200k FCF A/month	kshops, Market stalls, Direct clients, Jiji Senegal
<b>Artisan Tissera nd / Teinturier</b>	Fashion & Textile	Rural clusters (Ndem), Regional centers (Thiès, Casamance)	Medium	Informal , Cooperative, Entrepreneurial	Loom operation (traditional & modern) , Weaving techniques (Manjak, etc.)	Natural dyeing techniques, Batik, Indigo dyeing	N/A (unless selling directly online)	Traditional apprenticeship, Community-based training (e.g. , Ndem artisans <sup>41</sup> )	Entry to Master	Per-meter/piece of fabric, Cooperative revenue sharing	Export-oriented brands (e.g. , Sarayaa <sup>37</sup> ), Tourist markets , Online platforms (via intermediaries)

											iaires)
<b>Coordinateur de Défilé de Mode</b>	Fashion & Textile	Dakar, Saint-Louis	Low (Seasonal)	Freelance/Gig, Contractual	Event planning software, Logistics management, Budgeting	N/A	Project management, Supplier negotiation, Stress management, Communication	Experience in event management, Internships with fashion weeks	Mid-Level	Per-event contract fee (e.g. , 500 k - 2M FCF A for a major event)	Dakar Fashion Week, Adama Paris, Production agencies
<b>Hôte de Vente (Fashion Boutique)</b>	Fashion & Textile	Dakar	Medium	Formal (Full-time /Part-time)	POS systems , Basic inventory management	N/A	Customer service, Sales techniques, Product knowledge, Good eloc	BAC minimum, Experience in sales/reception is a plus <sup>42</sup>	Entry-Level	Salaried: 150 k- 250 k FCF A/month + commission	High-end boutiques, Malls (Sea Plaza, Dakar City)



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### 3.3. Film, Television, and Audiovisual Production

Senegal's audiovisual sector is experiencing robust growth, driven by demand from television channels, advertising agencies, corporate clients, and increasingly, international streaming platforms. The industry is becoming more structured, with professional bodies like the Association des Techniciens Audiovisuels et Cinéma (ATACS) working to promote excellence and provide a network for professionals.<sup>31</sup> A growing ecosystem of training institutions, including the state-run ISEP-Thies and private schools like Hollywood University in Dakar, offers specialized diplomas in cinematography, production, and post-production, signaling a move towards greater professionalization.<sup>30</sup> Opportunities span the entire production cycle, from screenwriting and directing to technical roles in camera, sound, and editing.

**Table 3: Employment Opportunity Database - Film, TV, and Audiovisual**

Job Title	Sub - sect or Clas sific atio n	Loc atio n	Mar ket Dem and Indi cato r	Typ e of Eng age men t	Req uire d Skill s (Tec hnic al)	Req uire d Skill s (Cra ft/Ar tisa nal)	Req uire d Skill s (Digi tal/S oft)	Qua lific atio ns & Trai ning Path way s	Exp erie nce Lev el	Co mpe nsat ion Indi cato rs	Mar ket Acc ess & Plat for ms
<b>Tec hnic ien Polyval ent en Aud iovi</b>	Film , TV, Audi ovis ual	Dak ar, Rem ote pos sibili ties	High	CDD , Free lanc e/Gig	Cam eras (e.g. , DJI Roni n 4D), Ligh ting	N/A	Tour nag e (Sh ooti ng), Mon tage (Edi	ISEP - Thie s (PC A) <sup>44</sup> , Holl ywo	2-5 year s	CDD Sala ry: 200 k- 300 k FCF A/m	Emp loiS ene gal <sup>46</sup> , Senj ob <sup>47</sup> ,

suel					equi pme nt, DaVi nci Res olve , Ado be Pre mier e Pro, Afte r Effe cts		ting) , Étal onn age (Col or Gra ding , Moti on Desi gn	od Univ ersit y <sup>30</sup> , On- the- job train ing		onth <sup>46</sup> ; Free lanc e day rate: 50k - 150 k FCF A	Pro duct ion hou ses, ATA CS <sup>31</sup>
<b>Réa lisat eur (Fil m/T V/P ub)</b>	Film , TV, Audi ovis ual	Dak ar	Med ium	Free lanc e, Con trac tual	Scrit pt anal ysis, Sho t com posi tion, Dire ctin g acto rs, Post - pro duct ion over sigh t	N/A	Stor ytell ing, Lea ders hip, Proj ect man age men t, Co mm unic atio n, Visi on	Holl ywo od Univ ersit y (Lic enc e) <sup>45</sup> , ISEP - Thie s <sup>44</sup> , Inte rnati onal film sch ools , Exp erie nce	Mid to Seni or	Per- proj ect fee (vari able , fro m 1M to 10M + FCF A)	Pro duct ion com pani es, Adv ertis ing age ncie s, Upw ork <sup>32</sup>

								as assi stan t dire ctor			
<b>Mo nte ur Vid éo / Étal eur</b>	Film , TV, Audi ovis ual	Dak ar, Rem ote	High	Free lanc e, Con trac tual, For mal (TV stati on)	Ado be Pre mier e Pro, Fina l Cut Pro, DaVi nci Res olve , Afte r Effe cts	N/A	Stor ytell ing thro ugh editi ng, Atte ntio n to deta il, Tim e man age men t	ISEP - Thie s <sup>44</sup> , Holl ywo od Univ ersit y <sup>30</sup> , Self - taug ht, Upw ork port folio	Entr y to Seni or	Free lanc e rate: \$10 - \$30 /hr <sup>48</sup> , Sala ried: 200 k- 500 k FCF A/m onth	Upw ork <sup>48</sup> , Afri caS hore <sup>49</sup> , Pro duct ion hou ses, TV stati ons
<b>Scé nari ste</b>	Film , TV, Audi ovis ual	Dak ar, Rem ote	Low	Free lanc e, Con trac tual	Scri ptwr iting soft war e (e.g. , Fina l Draf t), Stor y stru ctur e,	N/A	Cre ativi ty, Res earc h, Disc iplin e, Coll abo ratio n	Holl ywo od Univ ersit y (Lic enc e opti on) <sup>45</sup> , Writi ng wor ksh ops,	All level s	Per- scri pt fee, Perc enta ge of pro duct ion bud get	Pro duct ion com pani es, Dire ctor net wor ks, Writi ng com peti tion s

					Dialogue writing			Self-taught			
<b>Responsable d'Exploitation Cinéma</b>	Film, TV, Audiovisuel	Dakar	Low	Formal (CDI)	Budget management, Staff management (HR), Operations, Security protocols	N/A	Leadership, Commercial strategy, Client relations, Negotiation	Business School/ Management degree, Technical knowledge of cinema operations	5+ years (Commercial sector)	Salaried (Senior management level)	Senjob <sup>50</sup> , Cinéma chaînes (e.g., Pathé, O'Cinéma)
<b>Démarqueur Commercial (Sponsoring)</b>	Film, TV, Audiovisuel	Dakar	Medium	Freelance	N/A	N/A	Sales, Negotiation, Persuasion, Networking (corporate/cult	Experience in sales/sponsoring, Strong professional net	Experienced	Commission-based, Retainer fee	EmploiDakar <sup>51</sup> , Production houses

							ural) , Res ults- orie nted	wor k <sup>51</sup>			
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### 3.4. Visual Arts and Crafts

The visual arts and crafts sector in Senegal is a cornerstone of its cultural identity, spanning a wide spectrum from ancestral craft traditions to a globally recognized contemporary art scene. The sector's grassroots are found in bustling artisan markets like Soumbédioune in Dakar, which hosts around 2,000 artisans specializing in leatherwork, pottery, weaving, and sculpture, and in rural craft clusters in regions like Casamance and Thiès.<sup>52</sup> At the other end of the spectrum, Dakar's contemporary art scene is animated by influential institutions like RAW Material Company, a center for art and knowledge, and a network of private galleries such as Galerie Le Manège and Galerie Cécile Fakhoury.<sup>15</sup> The Dak'Art Biennale serves as the sector's pinnacle event, providing a crucial platform for international exposure and market access.<sup>18</sup> The digital realm is creating new roles for graphic designers and illustrators, who find opportunities on both local job boards and international freelance platforms.

**Table 4: Employment Opportunity Database - Visual Arts and Crafts**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Artist</b>	Visual	Dakar,	Medium	Entrepre	Painting	Tradition	Portfolio	École	All level	Sales of	Dak' Art

<b>Plasticien (Peintre, Sculpteur)</b>	Arts & Crafts	Saint-Louis, Rural clusters		neurial, Freelance	techniques (oil, acrylic), Sculpting (wood, metal, clay), Installation art	al sculpting/carving techniques	development, Grant writing, Networking, Self-promotion	Nationale des Arts, Village des Arts residency <sup>16</sup> , Self-taught	s	artwork (highly variable), Commissions, Residency stipends	Bienale <sup>18</sup> , Galleries (RAW, Le Manège) <sup>15</sup> , Part courses Dakar <sup>57</sup>
<b>Artisan d'Art (Potier, Maroquinier, etc.)</b>	Visual Arts & Crafts	Nationwide, concentrated in Ziguinchor, Thiès, Dakar	High	Informal, Cooperative, Entrepreneurial	Pottery wheel, Leather working tools, Wood carving tools	Traditional pottery of Ediongou <sup>54</sup> , Tuarég leather techniques, etc.	Direct sales, Negotiation	Apprenticeship with master artisans, Family transmission, CFP Ziguinchor <sup>58</sup>	Entry to Master	Per-item sales in markets, Cooperative revenue sharing	Soumbédioune Market <sup>52</sup> , Sandaga Market <sup>59</sup> , Tourist sites, Export intermediaries <sup>41</sup>

<b>Gra phis te / Info gra phis te</b>	Visu al Arts & Craf ts	Dak ar, Rem ote	High	Free lanc e, For mal (age ncy) , Con trac tual	Ado be Cre ativ e Suit e (Ph otos hop, Illus trat or, InDe sign ), Fig ma	N/A	Bra ndin g, UI/U X prin cipl es, Clie nt com mun icati on, Proj ect man age men t	Sup' ima x, UGB (Lic enc e Info gra phie ) <sup>60</sup> , Holl ywo od Univ ersit y <sup>30</sup> , Onli ne cour ses	Entr y to Seni or	Free lanc e: \$15- \$10 0/hr <sup>61</sup> ; Sala ried: 250 k- 600 k FCF A/m onth	Upw ork, Drib bble <sup>61</sup> , Emp loiS ene gal <sup>60</sup> , Senj ob <sup>62</sup> , Loc al age ncie s
<b>Sta giai re Gra phi c Des igne r</b>	Visu al Arts & Craf ts	Dak ar, Rem ote	High	Inte rnsh ip	Ado be Cre ativ e Suit e basi cs	N/A	Cre ativi ty, Tea mw ork, Co mm unic atio n, Eag erne ss to lear n	Stu dent in gra phic desi gn/v isual arts (Bac +2) <sup>63</sup>	Entr y- Lev el	Stip end (oft en unp aid or low pay)	Emp loiS ene gal <sup>63</sup> , Loc al bran ding /co mm s age ncie s
<b>Ges tion nair e de</b>	Visu al Arts &	Dak ar	Low	For mal	Art han dlin g,	N/A	Art mar ket kno	Mas ter in Art	Mid to Seni or	Sala ried + com	Priv ate gall erie



<b>Gal erie d'Ar t</b>	Craf ts				Exhi bitio n cura tion, Sale s soft war e, Inve ntor y man age men t		wle dge, Sale s, Net wor king with coll ecto rs, Artis t relat ions	Mar ket/ Cult ural Man age men t <sup>64</sup> , Exp erie nce in gall erie s		miss ion on sale s	s (Gal erie Céci le Fak hour y, Gale rie Arte ) <sup>55</sup>
<b>Illus trat eur</b>	Visu al Arts & Craf ts	Dak ar, Rem ote	Med ium	Free lanc e	Digit al dra win g tabl ets (Wa com ) , Proc reat e, Ado be Illus trat or	N/A	Cha ract er desi gn, Stor ybo ardi ng, Clie nt com mun icati on	Écol e Nati onal e des Arts , Self - taug ht with stro ng port folio	All level s	Per- proj ect fees (e.g. , boo k illust ratio n, char acte r desi gn)	Upw ork <sup>32</sup> , Free lanc er.c om, Drib bble , Dire ct com miss ions

### 3.5. Digital and Multimedia

The digital and multimedia sector is arguably the fastest-growing segment of

Senegal's Orange Economy, acting as a critical enabler for all other creative fields. Fueled by increasing internet penetration and the national push for digital transformation under the *Plan Sénégal Émergent*, this sector is the epicenter of the modern gig economy. Dakar, as a UNESCO Creative City of Media Arts, is the clear hub, but the nature of digital work allows for participation from across the country and connection to global clients.<sup>8</sup> A vibrant freelance market has emerged on international platforms like Upwork, Dribbble, and Freelancer.com, where Senegalese professionals offer services in web development, UI/UX design, animation, and social media management.<sup>32</sup> Training programs at institutions like Université Alioune Diop de Bambey (Licence en Création Multimédia) and private centers are cultivating a talent pool proficient in in-demand technologies like React, Node.js, and Figma.<sup>67</sup>

**Table 5: Employment Opportunity Database - Digital and Multimedia**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Développeur Web (Full-Stack)</b>	Digital & Multimedia	Dakar, Remote	High	Freelance, Formal (tech company), Contractual	JavaScript, React, Vue.js, Node.js, PHP, MongoDB, Git, API development	N/A	Problem-solving, Project management, Client communication, Agile	UGB, Sonatel Academy <sup>68</sup> , Zone01 <sup>60</sup> , Self-taught with strong	Mid to Senior	Freelance: \$10 - \$85/hr <sup>68</sup> ; Salaried: 400k - 1.2M FCF A/month	Upwork <sup>68</sup> , Malt, Topal, Local tech companies, Emplois Senegal

					ment		e met hod olog ies	GitH ub port folio			
<b>UI/ UX Des igne r</b>	Digit al & Mult ime dia	Dak ar, Rem ote	High	Free lanc e, For mal (age ncy/ tech )	Fig ma, Ado be XD, Sket ch, Wire fra min g, Prot otyp ing, User rese arch	N/A	User emp athy , Visu al com mun icati on, Coll abo ratio n, Pro ble m- solvi ng	Spe ciali zed cour ses, Stro ng port folio is key, UGB <sup>60</sup>	Mid to Seni or	Free lanc e: \$10 - \$40 /hr <sup>69</sup> ; Sala ried: 350 k - 800 k FCF A/m onth	Drib bble <sup>61</sup> , Upw ork <sup>69</sup> , Beh anc e, Loc al desi gn age ncie s
<b>Co mm unit y Man age r</b>	Digit al & Mult ime dia	Dak ar, Rem ote	High	For mal, Free lanc e, Inte rnsh ip	Soci al med ia platf orm s (Me ta, X, TikT ok, Link edIn ) Sch edul ing	N/A	Con tent crea tion, Cop ywri ting, Audi enc e eng age men t, Anal ytic s, Crisi	Co mm unic atio n/M arke ting deg ree <sup>70</sup> , Cert ifica tion s (e.g. , Met a	Entr y to Mid - Lev el	Sala ried: 200 k- 450 k FCF A/m onth ; Free lanc e retai ners	Emp loiD akar <sup>70</sup> , Link edIn , Senj ob, Dire ct to com pani es

					tools (Hootsuite), Basic graphic design (Canva)		management	Blueprint)			
<b>Animator 2D/ 3D / Motion Designer</b>	Digital & Multimedia	Dakar, Remote	Medium	Freelance, Contractual	Adobe After Effects, Cinema 4D, Blender, Toon Boom Harmony	N/A	Storytelling, Creativity, Attention to detail, Time management	ISEP - Thesis <sup>44</sup> , Hollywood University <sup>30</sup> , Online schools (e.g. School of Motion)	Mid to Senior	Freelance project fees : 500k - 5M FCF A; Day rate: 75k-200k FCF A	Upwork <sup>32</sup> , Vimeo, Production houses, Advertising agencies
<b>Technicien Multimédia</b>	Digital & Multimedia	Dakar	Medium	Formal (corporate/institutional)	Video/photo capture & editing,	N/A	Technical support, Organization	BAC +2 to BAC +4 in Multimedia	2+ years	Salaried (e.g. , at BCEAO <sup>71</sup> ):	Senior <sup>71</sup> , Institutional job

					Digit al asse t man age men t, Enc odin g, Basi c web cont ent man age men t		atio n, Co mm unic atio n	dia, IT, or relat ed field <sup>71</sup>		300 k- 700 k FCF A/m onth	port als (e.g. , ban ks, larg e com pani es)
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### 3.6. Publishing and Communication

Senegal's publishing and communication sector holds significant, largely untapped potential. A 2024 UNESCO report highlighted that the African book industry could generate \$18.5 billion annually, yet it faces systemic challenges, including weak regulatory environments and limited distribution networks.<sup>72</sup> In Senegal, as in much of the continent, the sector struggles with a high volume of book imports versus exports, indicating a need to strengthen the domestic market.<sup>72</sup> Opportunities exist in traditional book publishing, digital publications, and specialized roles like translation and literary event coordination. While formal job postings are less frequent compared to digital media, roles for editors, writers, and communication specialists emerge within media houses, NGOs, and cultural institutions.<sup>73</sup> The recent validation of the

*Law on the Status of the Artist* could provide a framework to better support authors and publishing professionals.<sup>7</sup>

**Table 6: Employment Opportunity Database - Publishing and Communication**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Chargé d'Édition</b>	Publishing & Communications	Dakar	Low	Formal (media/publishing house)	Content management systems, Video editing software (basic), Pack Office	N/A	Content verification, Program scheduling, Project coordination, Rigueur, Polyvalence	Bac +5, Experience in audiovisual or publishing <sup>74</sup>	Mid - Level	Salaried (Estimate: 300 k-600 k FCF A/month)	Senjob <sup>74</sup> , Media groups (e.g. Canal+), Publishing houses
<b>Rédacteur / Copywriter</b>	Publishing & Communications	Dakar, Remote	Medium	Freelance, Formal (agency/company)	SEO principles, Content Management	N/A	Creative writing, Technical writing	Degree in Literature, Journalism,	All levels	Freelance: \$20 - \$50 /hr <sup>76</sup> ; Sala	Upwork <sup>76</sup> , EmploiDakar, Marketi

				y)	t Syst ems (Wo rdPr ess) , Micr osof t Offi ce		ng, Editi ng & pro ofre adin g, Ada pta bilit y to bran d voic e	or Co mm unic atio n; Stro ng port folio		ried: 250 k- 500 k FCF A/m onth	ng age ncie s
<b>Tra duc teur (Fra nçais, Ang lais, Wol of)</b>	Publ ishin g & Co mm s	Dak ar, Rem ote	Med ium	Free lanc e, Con trac tual	CAT tool s (e.g. , Trad os, Me mo Q), Ter min olog y man age men t	N/A	Ling uisti c prec ision , Cult ural nua nce, Spe ciali zati on (leg al, tech nica l, liter ary)	Mas ter in Tran slati on, Cert ifica tion, Nati ve/b iling ual flue ncy	Mid to Seni or	Per- wor d rate (e.g. , 30- 60 FCF A/w ord) ; Per- proj ect fees	Upw ork <sup>77</sup> , Proz .co m, Inte rnati onal orga niza tion s, Publ ishin g hou ses
<b>Jou rnal iste / Réd act</b>	Publ ishin g & Co mm s	Dak ar, Regi onal Cen ters	Med ium	For mal (me dia outl et),	CM S (Wo rdPr ess) ,	N/A	Inte rvie win g, Res earc	Jour nalis m deg ree (e.g.	Entr y to Seni or	Sala ried: 200 k- 700 k	Onli ne new s site s

eur Web				Free lanc e	Basi c HTM L, Audi o/vi deo reco rdin g & editi ng		h, Fact - che ckin g, Writi ng for the web (SE O), Ethi cs	, CES TI), Exp erie nce in a new sroo m		FCF A/m onth ; Free lanc e per- artic le fees	(e.g. , Dak arac tu), New spa pers , Radi o/TV stati ons
<b>Coo rdin ate ur d'Év éne men ts Litt érai res</b>	Publ ishin g & Co mm s	Dak ar, Sain t- Loui s	Low (Sea son al)	Con trac tual, Free lanc e	Eve nt man age men t tool s, Soci al med ia pro moti on	N/A	Proj ect plan ning , Bud get man age men t, Publ ic spe akin g, Net wor king with auth ors/ publ ishe rs	Exp erie nce in eve nt man age men t or publ ishin g, Cult ural man age men t deg ree	Mid - Lev el	Per- eve nt cont ract fee	Publ ishin g hou ses, Cult ural cent ers, Liter ary festi vals



### 3.7. Advertising, Marketing, and Communication

This cross-cutting service sector is indispensable to the entire Orange Economy, providing the strategic and creative impetus that connects cultural products with audiences and markets. The rapid digitalization of the Senegalese economy has fueled immense demand for professionals skilled in digital marketing, branding, and content creation. Opportunities range from roles in established advertising agencies and corporate marketing departments to freelance consulting for startups and cultural organizations. Job postings frequently call for a hybrid skill set, blending creative ideation with data-driven strategy and proficiency in the latest digital tools.<sup>78</sup> The sector is a major employer of graphic designers, copywriters, and strategists, and offers clear career paths from entry-level positions to senior leadership roles.

**Table 7: Employment Opportunity Database - Advertising, Marketing, and Communication**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Director Artistique (Art Director)</b>	Ad, Marketing, Comms	Dakar	Medium	Formal (agency), Freelance	Adobe Creative Suite, Figma, Presentation software	N/A	Visual concept development, Team leadership, Client	Degree in Graphic Design/ Arts, Strong portfolio of	Senior	Salary: 700k - 2M FCF A/month; Freelance day rate:	Advertising agencies (e.g., McCann, Publicis), Large

					e		nt pres enta tion, Bra ndin g stra tegy	cam paig n wor k		100 k- 250 k FCF A	com pani es, Drib bble <sup>61</sup>
<b>Con cep teur - Réd act eur (Co pyw riter )</b>	Ad, Mar keti ng, Co mm s	Dak ar, Rem ote	High	For mal (age ncy) , Free lanc e	SEO tool s (SE Mrush), Goo gle Ads, Soci al med ia ad platf orm s	N/A	Cam paig n con cept ing, Slog an/h eadl ine writi ng, Scri ptwr iting , Pers uasi ve writi ng	Deg ree in Co mm unic atio n/M arke ting/ Liter atur e, Port folio of ad cop y	Mid to Seni or	Sala ried: 300 k- 800 k FCF A/m onth ; Free lanc e proj ect fees	Upw ork <sup>76</sup> , Ad age ncie s, Emp loiD akar <sup>79</sup>
<b>Spé ciali ste en Mar keti ng Digi tal</b>	Ad, Mar keti ng, Co mm s	Dak ar, Rem ote	High	For mal, Free lanc e	Goo gle Anal ytic s, Goo gle Ads, Met a Busi ness	N/A	Dat a anal ysis, Cam paig n opti miza tion, Con tent	Mar keti ng deg ree, Digit al mar keti ng certi ficat	Mid - Lev el	Sala ried: 350 k - 900 k FCF A/m onth ; Free lanc	Link edIn , Emp loiD akar , Senj ob, Tec h com

					Suite, SEO tools, Email marketing platforms (Mailchimp)		strategy, A/B testing	ions (Google, HubSpot)		e retailer: 200k-600k FCF A/month	panies, Startups
<b>Public Relations &amp; Press Officer</b>	Ad, Marketing, Comms	Dakar	Medium	Formal (CD D/C DI)	Media monitoring tools, Press release distribution platforms	N/A	Narrative crafting, Stakeholder management, Media relations, Crisis communication	Degree in Comms/Marketing/Journalism, Fluency in French & English <sup>80</sup>	5+ years	Salary (CD D): 500k - 1M FCF A/month (based on similar senior roles)	EmploiDakar <sup>80</sup> , Large companies (e.g. Wavex, NGOs)
<b>Brand Strategist</b>	Ad, Marketing	Dakar, Remote	Medium	Freelance,	Market research	N/A	Market analysis	MBA or Master's	Senior	Salary: 1M -	Upwork <sup>32</sup> ,

regist	ng, Co mm s	ote		For mal (sen ior age ncy role)	arch tool s, Bra nd audi t fra me wor ks		ysis, Con sum er insig ht, Bra nd posi tioni ng, Wor ksh op facil itati on	ter's in Mar keti ng, Exte nsiv e expe rie nce in bran ding		3M FCF A/m onth ; Free lanc e proj ect fees : 2M - 10M FCF A	Seni or- level recr uitm ent age ncie s, Link edIn
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### 3.8. Cultural Event Management

Fueled by Senegal's vibrant festival calendar, a growing tourism sector, and its position as a hub for regional conferences, the cultural event management sector is a significant source of both formal and freelance employment. Major events like the Dak'Art Biennale and various music festivals create seasonal peaks in demand for a wide range of skills, from high-level project management to on-the-ground logistics and technical support.<sup>18</sup> The MICE (Meetings, Incentives, Conferences, and Exhibitions) sub-sector, centered around hotels and conference centers in Dakar, provides more consistent demand for roles like event coordinators.<sup>82</sup> Opportunities require a blend of organizational rigor, creativity, and the ability to manage complex logistics under pressure.

**Table 8: Employment Opportunity Database - Cultural Event Management**

Job Title	Sub - sector	Location	Market Demand	Type of Engage	Required Skill	Required Skill	Required Skill	Qualifications &	Experience Lev	Compensation	Market Access
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	Clas sific atio n		Indi cato r	men t	s (Tec hnic al)	s (Cra ft/Ar tisa nal)	s (Digi tal/S oft)	Trai ning Path way s	el	Indi cato rs	& Plat for ms
<b>Che f de Proj et Évé nem enti el</b>	Eve nt Man age men t	Dak ar, Abid jan (regi onal role s)	Med ium	For mal (age ncy) , Free lanc e/C ontr actu al	Proj ect man age men t soft war e (Asa na, Trell o), Bud geti ng (Exc el), Cahi er des char ges (spe cific atio ns) dev elop men t	N/A	Sup plier neg otiat ion, Logi stics plan ning , Clie nt man age men t, Cre ativi ty, Pro ble m- solvi ng	BAC +2/3 /4 in Mar keti ng/ Co mm unic atio n, Goo d Engl ish <sup>83</sup>	5+ year s	Sala ried (age ncy) : 600 k - 1.5M FCF A/m onth ; Proj ect fee (fre elan ce)	Senj ob <sup>83</sup> , Eve nt pro duct ion age ncie s, Cult ural insti tutio ns
<b>Coo rdin ate ur Évé nem</b>	Eve nt Man age men t	Dak ar (Hot els)	Med ium	For mal (CD D/C DI)	Hot el boo king syst ems	N/A	Sale s & neg otiat ion, Clie	Hos pital ity/T ouri sm deg	Mid - Lev el	Sala ried (CD D): 300 k-	Emp loiD akar <sup>82</sup> , Maj or

enti el (MI CE)					(e.g. , Ope ra), Micr osof t Offi ce Suit e		nt serv ice, Tim e man age men t, Stre ss resi stan ce, Mult iling ual (Fr, En, Wol of)	ree, Exp erie nce in hote l sale s/re serv atio ns		600 k FCF A/m onth	hote ls (Ter rou- Bi, Radi sso n), Con fere nce cent ers
Rég isse ur Tec hni que / Sta ge Man age r	Eve nt Man age men t	Dak ar, Fest ival loca tion s	Med ium (Sea son al)	Free lanc e/Gi g	Stag ing, Ligh ting, Sou nd equi pme nt kno wle dge, Heal th & safe ty prot ocol s	N/A	Tea m coor dina tion, Pro ble m- solvi ng und er pres sure , Co mm unic atio n	Tec hnic al thea ter train ing, On- the- job exp erie nce with festi vals/ con cert s	Mid to Seni or	Per- eve nt cont ract fee: 200 k - 1M FCF A	Fest ival orga nize rs (Dak 'Art, Sain t- Loui s Jazz ) , Pro duct ion com pani es, ATA CS

											31
<b>Hôte/Hôteesse d'Accueil (Events)</b>	Event Management	Dakar, Festival locations	High (Seasonal)	Freelance/Gig, Temporary	Ticketing/scanning systems, Basic information provision	N/A	Customer service, Communication, Professional presentation, Dynamism	No specific degree, experience is a plus	Entry-Level	Daily/hourly rate (e.g. , 15k-30k FCF A/day)	Jobble <sup>81</sup> , Event staffing agencies, Direct hiring by festivals
<b>Responsable Logistique Événementiel</b>	Event Management	Dakar	Medium	Formal (agency), Freelance	Logistics software, Supply chain management	N/A	Supplier management, Transport coordination, Inventory control, Planning	Degree in Logistics/Transport, Experience in event logistics	Mid-Level	Salaried: 400 k - 800 k FCF A/month	Event agencies, Large corporations, NGOs

### 3.9. Heritage and Museums

Senegal's heritage and museum sector is the custodian of the nation's rich history and cultural identity. It is anchored by a network of national and regional museums, including the Musée des Civilisations Noires, the Musée Théodore Monod, and historical sites like Gorée Island.<sup>14</sup> The sector is overseen by the Direction du Patrimoine Culturel, which is responsible for the inventory, restoration, and promotion of historical sites and monuments.<sup>85</sup> Employment in this sector is predominantly formal and public-sector-oriented, requiring specialized academic qualifications. Roles range from curation and research to conservation and public education, all contributing to the preservation and interpretation of Senegal's tangible and intangible heritage for both national and international audiences.

**Table 9: Employment Opportunity Database - Heritage and Museums**

Job Title	Sub - sector or Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Conservateur de Musée (Curator)</b>	Heritage & Museums	Dakar, Saint-Louis	Low	Formal (Public Sector)	Collection management software, Exhibition design	N/A	Research, Writing, Project management, Public speaking	Master's /PhD in Museology, Art History, Archaeology, or related	Mid to Senior	Public sector or salary scale	Ministry of Culture <sup>86</sup> , National Museums <sup>14</sup> , University recr



					principles, Art history/ archaeology research methods		g, Grant writing	ed field			uitment
<b>Archivist / Documentalist</b>	Heritage & Museums	Dakar, Saint-Louis	Low	Formal	Archival software, Digitization techniques, Database management	N/A	Organization, Attention to detail, Research skills, Preservation knowledge	Degree in Library Science, Archival Studies, or History (e.g. from EBA D at UCAD)	Entry to Mid-Level	Public sector salary scale	National Archives, Museums <sup>84</sup> , Research centers (IFAN)
<b>Guide-Conférencier</b>	Heritage & Museums	Gorée, Saint-Louis,	Medium (Seasonal)	Freelance, Contractual	In-depth historical/c	N/A	Public speaking, Story	History/ Tourism degree,	All levels	Per-tour fees, Daily	Tourist sites (Gorée,

(To ur Gui de)		Dak ar, Nati onal Park s			ultur al kno wle dge of the site		ytell ing, Mult iling ualis m (Fre nch, Engl ish, loca l lang uag es), Cus tom er serv ice	Offi cial guid e lice nse/ certi ficat ion		rate s, Tips	mus eum s), Tour ope rato rs, Onli ne platf orm s (Get Your Gui de <sup>87</sup> )
<b>Res taur ate ur d'Œ uvr es d'Ar t / de Bâti men ts</b>	Heri tage & Mus eum s	Dak ar, Sain t- Loui s	Low	Free lanc e, Con trac tual (pro ject - bas ed)	Con serv atio n scie nce, Che mic al anal ysis, Spe cific mat erial rest orati on tech niqu es (tex tiles	Trad ition al buil ding /cra ft tech niqu es	Meti culo usn ess, Pati enc e, Pro ble m- solvi ng, Ethi cal judg men t	Spe ciali zed Mas ter's deg ree in Con serv atio n/Re stor atio n (oft en inter nati onal )	High ly Spe ciali zed	Per- proj ect cont ract fees (oft en high valu e)	Dire ctio n du Patr imoi ne Cult urel <sup>85</sup> , Mus eum s, Inte rnati onal tend ers (UN ESC O, Worl d Ban

					, wood, stone)						k)
<b>Agent du Patrimoine / Logistique</b>	Heritage & Museums	Dakar, Regional sites	Low	Formal (Public Sector)	Inventory management, Basic maintenance, Procurement procedures	N/A	Logistics coordination, Contract monitoring, Reporting	Technical diploma or degree in management/logistics	Entry to Mid-Level	Public sector or salary scale	Senjoub <sup>88</sup> , Ministry of Culture <sup>86</sup>

### 3.10. Emerging Digital Creative Roles

The convergence of technology and creativity is forging a new frontier of employment opportunities in Senegal, primarily within the global digital gig economy. These roles, often remote and project-based, allow Senegalese talent to serve international clients, bypassing local market constraints. Platforms like Upwork, Freelancer, and Dribbble are the primary marketplaces for these skills.<sup>32</sup> These emerging professions demand a high degree of digital fluency, creativity, and the entrepreneurial acumen to navigate online platforms. They represent a significant growth area, particularly for urban youth with access to reliable internet and digital skills training. The rise of AI is also creating new specializations, from AI-assisted

content creation to prompt engineering, positioning digitally savvy creatives at the cutting edge of the global Orange Economy.

**Table 10: Employment Opportunity Database - Emerging Digital Creative Roles**

Job Title	Sub - sector Classification	Location	Market Demand and Indicator	Type of Engagement	Required Skills (Technical)	Required Skills (Craft/Artisanal)	Required Skills (Digital/Soft)	Qualifications & Training Pathways	Experience Level	Compensation Indicators	Market Access & Platforms
<b>Social Media Content Creator</b>	Emerging Digital	Remote, Dakar	High	Freelance, Contractual	Video editing (CapCut, Premiere Pro), Graphic design (Canva), Photography, Platform-specific for	N/A	Storytelling, Trend analysis, Audience engagement, Copywriting, Personal branding	Portfolio-based, Online courses, Experience with social media growth	All levels	Per-project/video fee: \$50 - \$500; Monthly retainer: \$300-\$1500+ 32	Upwork, Fiverr, Instagram, TikTok, Direct to brands

					mat s (Ree ls, TikT oks)						
<b>AI Arti st / Pro mpt Eng inee r</b>	Eme rgin g Digit al	Rem ote	Low (but gro win g)	Free lanc e	Midj ourn ey, Sta ble Diff usio n, DAL L-E, Pro mpt craf ting tech niqu es, Basi c ima ge edi ting (Ph otos hop )	N/A	Cre ativi ty, Visu al lang uag e, Exp erim enta tion, Und erst andi ng of AI mod els	Self - taug ht, Onli ne com mun ities (Dis cord , Red dit), Spe ciali zed wor ksh ops	All level s	Per- ima ge/p roje ct fee (hig hly vari able )	Upw ork <sup>32</sup> , Foto r, Nigh tCaf e, Art- focu sed mar ketp lace s
<b>Virt ual Eve nt Pro duc er</b>	Eme rgin g Digit al	Rem ote, Dak ar	Low	Free lanc e, Con trac tual	Virt ual eve nt platf orms (Zoo m,	N/A	Proj ect man age men t, Tec hnic al	Exp erie nce in eve nt man age men t	Mid - Lev el	Per- eve nt con tract fee: \$50 0-\$50	Link edIn , Eve nt man age men t

					Hop in), Live stre ami ng soft war e (OB S), Vide o pro duct ion basi cs		trou bles hoo ting, Co mm unic atio n, Coo rdin atio n	t and/ or AV pro duct ion		00+	age ncie s, Tec h com pani es
<b>Pod cast Pro duc er / Edit or</b>	Eme rgin g Digit al	Rem ote	Med ium	Free lanc e	Audi o editi ng soft war e (Au daci ty, Des cript , Ado be Audi tion) , Micr oph one tech niqu es, RSS	N/A	Stor ytell ing, Inte rvie win g skill s, Sou nd desi gn, Proj ect man age men t	Onli ne cour ses (e.g. , Pat Flyn n's Pow er- Up Pod cast ing), Self - taug ht	All level s	Per- epis ode fee: \$50 - \$30 0+; Hou rly rate: \$20 - \$60 /hr	Upw ork, Five rr, Pod cast pro duct ion age ncie s

					feed man age men t						
<b>NFT Arti st / Stra tegi st</b>	Eme rgin g Digit al	Rem ote	Very Low	Entr epre neur ial, Free lanc e	Bloc kch ain basi cs, Mint ing platf orm s (Op enS ea, Fou ndat ion), Sma rt cont ract s (bas ic und erst andi ng), Digit al art crea tion	N/A	Co mm unit y buil ding (Dis cord , X), Mar keti ng, Und erst andi ng of cryp to mar kets	Self - taug ht, Cry pto/ Web 3 com mun ities , Onli ne tuto rials	All level s	Sale s of NFT s (hig hly spe cula tive) , Co mmi ssio n for NFT proj ects	Ope nSe a, Fou ndat ion, Rari ble, Sup erRa re

## Part IV: Cross-Cutting Thematic Analysis

#### 4.1. The Spectrum of Work: Formal, Informal, and the Gig Economy

The employment landscape in Senegal's Orange Economy is not a monolith but a spectrum of engagement models, each with distinct characteristics, benefits, and challenges. At one end lies **formal employment**, typically found within government institutions, established media houses, and larger private companies. A role such as the *Chargé de mission audiovisuelle* at the Institut Français in Dakar offers a fixed-term contract (CDD), a structured salary, and defined responsibilities, providing a degree of stability and access to institutional resources.<sup>34</sup> Similarly, a

*Responsable d'Exploitation Cinéma* operates within a formal corporate structure with clear hierarchical and budgetary responsibilities.<sup>50</sup>

At the opposite end is the vast **informal sector**, which is the de facto reality for the majority of creative workers, especially in crafts and small-scale services. An artisan tailor in a Dakar neighborhood or a potter in a rural village in Casamance operates largely outside of state regulation.<sup>54</sup> Their work is characterized by autonomy and direct client relationships but is also marked by precarity, income volatility, and a profound lack of social protection (pension, health insurance) or access to formal credit.<sup>3</sup> This sector, while the largest employer, is the most vulnerable to economic shocks and has the least access to the benefits promised by national policies like the

*Law on the Status of the Artist*.<sup>7</sup>

Occupying the space between these poles is the rapidly expanding **digital gig economy**. A freelance video editor or web developer in Senegal can leverage platforms like Upwork or Dribbble to access a global client base, achieving a level of flexibility and income potential untethered from the local formal job market.<sup>48</sup> These professionals often earn competitive international rates, with hourly wages for skilled developers ranging from \$10 to over \$85.<sup>68</sup> However, like their counterparts in the informal sector, they typically lack social safety nets, bear the full entrepreneurial risk, and must constantly navigate the complexities of international payments and client acquisition.<sup>92</sup> This analysis reveals that while formalization offers stability, the informal and gig economies provide the bulk of the sector's dynamism and employment,



highlighting a critical need for hybrid policies that can extend social protection and financial services without stifling the flexibility that defines these work models.

## 4.2. Geographic Opportunity Map: A Hub-and-Spoke Model

Employment opportunities in Senegal's creative sector are not evenly distributed; they follow a distinct hub-and-spoke pattern.

### The Hub: Dakar

The capital city is the undisputed epicenter of the Orange Economy. As a UNESCO Creative City, Dakar concentrates the vast majority of formal creative employment, housing the key national cultural institutions, major media outlets, advertising agencies, and tech companies.<sup>5</sup> It is home to the most prestigious training centers like ISM and Hollywood University, and serves as the stage for career-defining events like the Dak'Art Biennale.<sup>18</sup> The density of infrastructure, capital, and networks makes Dakar the primary destination for creative professionals seeking formal careers or access to the most lucrative markets.

### The Spokes: Regional Creative Centers

Beyond Dakar, several regional centers have developed their own specialized creative ecosystems, functioning as vital spokes connected to the central hub.

355. **Saint-Louis:** With its rich history as a former colonial capital and UNESCO World Heritage site, Saint-Louis thrives on heritage-based tourism, music (home to the famous Saint-Louis Jazz Festival), and visual arts. Opportunities here are closely tied to the tourism and festival seasons.<sup>93</sup>

356. **Thiès:** Its proximity to Dakar makes it an important center for crafts and fashion. It hosts the *Manufactures Sénégalaises des Arts Décoratifs* and several vocational training centers, including fashion schools, positioning it as a key production and training site.<sup>16</sup>

357. **Ziguinchor and the Casamance Region:** This region is a repository of deep-rooted traditional crafts, particularly in pottery, weaving, and sculpture. The local economy is heavily influenced by cultural tourism, with artisan villages and open-air museums offering authentic experiences.<sup>53</sup>

### Rural Clusters and the Digital Bridge

Deep in the rural landscape, specialized artisan clusters exist, such as the village of Ndem, known for its textiles, pottery, and metalwork, operating as a community-based NGO.<sup>41</sup> These clusters possess immense skill but suffer from market isolation, relying heavily on fluctuating tourism traffic.<sup>96</sup>

This geographic disparity presents a significant challenge, but also a remarkable opportunity. The rise of digital platforms offers a potential "digital bridge" to connect these isolated rural artisans directly to global markets. Currently, this connection is often facilitated by intermediaries, such as the online store *Manjak-Home*, which sources products from rural communities like Ngaye and Ndem and sells them internationally.<sup>41</sup> While valuable, this model can be scaled and made more empowering. A strategic focus on building digital capacity

*within* these rural clusters could be transformative. This would entail providing cooperatives with not just internet access and smartphones, but targeted training in digital photography, online marketing, e-commerce platform management (on sites like Etsy or even local platforms like Jiji.sn<sup>97</sup>), and establishing logistical partnerships for shipping. Such an initiative would empower artisans to manage their own branding, set their own prices, and engage directly with a global customer base, thereby creating more resilient and profitable livelihoods independent of seasonal tourism. It effectively transforms a local, tangible craft into a globally exportable digital service.

## Part V: Strategic Recommendations for Sector Development

### 5.1. For Government and Public Institutions (Ministry of Culture, ANPEJ)

358. **Accelerate and Simplify Policy Implementation:** The government's highest priority should be to translate the *Law on the Status of the Artist* from a legal text into a practical reality for creative workers. The planned national popularization tour is a vital first step.<sup>7</sup> This must be followed by the creation of a simplified, low-cost, and digitally accessible registration process. This "one-stop-shop" or *guichet unique* should allow informal artisans, freelance musicians, and digital creators to easily formalize their status, register for social security (IPRES, CSS), and obtain a tax identification number, thereby unlocking access to formal markets and state support.<sup>90</sup>

359. **Adapt Financial Support Mechanisms:** Public funding bodies, such as the

Fund for the Development of Urban Cultures and Creative Industries (FDCUIC), must adapt their criteria to the realities of the creative sector.<sup>98</sup> This means moving beyond requirements for traditional physical collateral and developing evaluation models that recognize the value of intangible assets like intellectual property, brand recognition, and project-based portfolios. Creating a dedicated "Creative Economy" window within these funds, with expert evaluators from the sector, would ensure that capital flows to the most promising, albeit non-traditional, ventures.

360. **Target Youth Employment in Creative Industries:** The National Agency for the Promotion of Youth Employment (ANPEJ) should design and implement programs specifically for the Orange Economy.<sup>99</sup> This should include: (1) a subsidized internship program placing young graduates in national cultural institutions (museums, theaters); (2) a modernized apprenticeship program that formally pairs young artisans with master craftspeople, potentially with financial support from the GIZ-backed "Réussir au Sénégal" program<sup>101</sup>; and (3) a support desk for digital freelancers, offering guidance on navigating international platforms, digital payment systems, and tax obligations.

## 5.2. For Educational and Vocational Training Providers (Universities, ISEP, CFPs)

361. **Integrate Entrepreneurial and Digital Skills into Curricula:** All arts and culture training programs—from universities like UGB and ISM to vocational centers like ISEP-Thies and SEA Academy—must embed core modules on creative entrepreneurship.<sup>33</sup> This curriculum reform should cover financial literacy (budgeting, pricing, invoicing), digital marketing (social media, SEO), and the fundamentals of intellectual property rights. The goal is to produce graduates who are not only skilled artists but also capable business operators.
362. **Teach the Business of Freelancing:** Training must evolve beyond mere software proficiency in tools like the Adobe Suite. Institutions should offer practical workshops on the "business of freelancing," teaching students how to build a professional online portfolio, create compelling profiles on platforms like Upwork and Dribbble, manage international client communication, and utilize digital payment methods securely. This directly addresses the skills needed for the growing gig economy.
363. **Forge Formal Industry Partnerships:** Educational institutions must

systematically strengthen their ties with the professional world. This involves establishing formal partnership agreements with industry associations like the AMS (Music) and ATACS (Cinema) to co-develop curricula, ensuring they remain aligned with market demands.<sup>26</sup> These partnerships should also facilitate structured internship and apprenticeship placements, creating a clear and reliable pipeline from education to employment.

### 5.3. For Development Partners and Investors (UNESCO, World Bank, GIZ, WIC Capital)

364. **Fund the "Missing Middle" of Informal Enterprises:** A key leverage point for development partners is to support the vast number of creative enterprises stuck in the "missing middle"—too large for microfinance but too informal for traditional bank loans. Funding should be directed towards initiatives that provide a blend of seed capital and intensive business development support, similar to the model employed by WIC Capital for women-led SMEs.<sup>37</sup> This support helps businesses formalize their operations, structure their finances, and become investment-ready.
365. **Invest in the Regional "Spokes":** To counter the over-concentration of resources in Dakar, investments should be strategically channeled to the regional creative hubs. This could involve funding for infrastructure upgrades at cultural sites in Saint-Louis, supporting craft cooperatives in Ziguinchor with modern equipment, or establishing creative incubators in Thiès. This approach builds on regional strengths and fosters a more balanced national creative ecosystem.
366. **Launch and Scale "Digital Artisan" Programs:** Development partners are uniquely positioned to fund and provide technical expertise for pilot programs aimed at connecting rural artisans to global e-commerce. A "Digital Artisan" initiative would provide selected rural cooperatives with a comprehensive package: (1) training in digital literacy and online marketing, (2) access to equipment (smartphones, cameras) and reliable internet, (3) hands-on support for setting up online shops on platforms like Etsy or Manjak-Home<sup>41</sup>, and (4) establishment of a logistics hub to manage packaging and international shipping. This would be a high-impact investment in creating sustainable, globally-connected rural livelihoods.

## **Part VI: Conclusion and Future Research Agenda**

### **Synthesis of Findings**

Senegal's Orange Economy is at a pivotal moment. It stands as a dynamic and resilient force, deeply embedded in the nation's cultural fabric and holding immense potential for driving inclusive economic growth. The landscape is defined by a vibrant dualism: a formal sector bolstered by world-class events and progressive policies, and a massive informal sector that provides the majority of employment and grassroots creativity. The rapid advance of digital technology and the rise of a globalized gig economy present the single greatest opportunity to bridge the critical divides that currently constrain the sector's potential—the gap between formal policy and informal reality, and the geographic concentration of opportunity in Dakar versus the regions. By strategically leveraging digital tools to empower artisans, professionalizing training to create artist-entrepreneurs, and implementing policies that recognize and support all forms of creative work, Senegal can unlock the full power of its most valuable renewable resource: its creativity.

### **Identification of Data Gaps and Recommendations for Future Research**

While this report synthesizes a wide array of sources, a significant data gap remains: the lack of systematic, granular, and regularly updated quantitative data on the informal creative economy. The LARTES-IFAN study of 2023 was a landmark contribution, but its scope was limited, and the sector evolves rapidly.<sup>4</sup> Official statistics often fail to capture the full extent of employment, income generation, and value creation within the informal craft, music, and digital gig work that form the bedrock of the Orange Economy.

To formulate truly evidence-based policies, a more profound understanding is

required. Therefore, this report strongly recommends the commissioning of a **Nationwide Survey of the Informal Creative Economy**. This research initiative should be a multi-year effort, undertaken as a partnership between the Ministry of Culture, the National Agency for Statistics and Demography (ANSD), and academic research bodies like LARTES-IFAN.

The objectives of this future research should be to:

- 367. **Quantify the Sector:** Establish reliable baseline data on the number of individuals employed (informally, as freelancers, or in gig work), their income levels, and their contribution to household and national economies.
- 368. **Map Value Chains:** Analyze the value chains for key informal sub-sectors (e.g., tailoring, wood carving, local music production) to identify bottlenecks and leverage points for value addition.
- 369. **Identify Barriers:** Conduct qualitative research (interviews, focus groups) with creative workers across all regions to understand the specific barriers they face in formalizing their work, accessing finance, and reaching broader markets.
- 370. **Assess Digital Readiness:** Evaluate the current level of digital literacy and access to technology among creative workers, particularly in rural and regional areas, to inform the design of targeted digital upskilling programs.

The insights generated from such a study would be invaluable, providing the definitive evidence base needed to design and implement the next generation of policies and programs that can effectively support and scale Senegal's entire creative ecosystem.

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# Senegal's Platinum Economy: A Systematic Analysis of the High-Value Knowledge Sector and Workforce Landscape

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## Executive Summary

Senegal's Platinum Economy—comprising its high-value, knowledge-intensive, and innovation-driven sectors—stands at a pivotal juncture. Propelled by a cohesive and ambitious national policy framework, including the *Plan Sénégal Émergent* (PSE), the *Digital Senegal 2025* strategy, and the new “*New Deal Technologique*”<sup>1</sup>, the nation is charting a deliberate course towards becoming a regional hub for technology and innovation. This report provides a systematic examination of this burgeoning economy, mapping its workforce, analyzing its talent supply chain, and assessing its market dynamics to furnish stakeholders with the strategic intelligence required for effective policy and program formulation.

The analysis reveals a central paradox in Senegal's innovation landscape. According to the Global Innovation Index (GII), the country demonstrates commendable efficiency, generating higher-than-expected innovation outputs relative to its investment levels.<sup>4</sup> This performance is significantly bolstered by its strengths in Institutions and Market Sophistication, and the notable success of a few high-value enterprises, such as the fintech unicorn Wave, which has an outsized impact on national metrics.<sup>4</sup> However, this output efficiency masks profound structural weaknesses in foundational inputs. Senegal continues to lag in Human Capital & Research and Business Sophistication, with particularly low rankings for knowledge-intensive employment and the participation of women with advanced degrees.<sup>4</sup> This

imbalance suggests an innovation ecosystem that is potentially fragile and overly dependent on a narrow base, rather than broad, systemic capacity.

The workforce landscape reflects this dynamic. Demand is surging for digital roles, particularly for versatile, full-stack software developers, data analysts, and cybersecurity specialists, driven by the government's aggressive digitalization agenda.<sup>6</sup> In response, a diverse talent supply chain is emerging, from specialized master's programs in AI and Data Science at institutions like the École Supérieure Polytechnique (ESP) to agile, industry-focused bootcamps such as Orange Digital Center and GOMYCODE.<sup>8</sup> Yet, a disconnect persists between the advanced skills being produced and the current absorptive capacity of many local firms, creating a potential talent surplus at the high end.

This dynamic is critically exacerbated by the global labor market. The salary arbitrage between local and international remote work is stark; Senegalese tech professionals can earn multiples of the local average by working for foreign companies, posing a significant challenge to talent retention for domestic enterprises.<sup>11</sup> Concurrently, while numerous laudable initiatives are working to improve gender inclusion in the tech sector, the primary challenge is shifting from encouraging initial participation to fostering the retention and advancement of women into leadership positions.<sup>13</sup>

To secure a sustainable and inclusive Platinum Economy, this report puts forth a series of strategic recommendations. For workforce development, the focus must be on bridging the theory-practice gap through mandated internships and creating a national digital skills certification framework. For ecosystem planners, priorities should shift from early-stage incubation to providing growth and scale-up funding, while also creating programs to leverage the expertise and capital of the "remote diaspora." Finally, for economic policymakers, the most critical interventions involve targeted investment in applied R&D to forge university-industry linkages and the establishment of a real-time labor market observatory to enable agile, data-driven policy. By addressing these structural challenges, Senegal can convert its ambitious vision into a resilient and prosperous knowledge-based future.

## **Part I: The Strategic Context and Innovation Landscape**



## 1.1. The National Vision for a Knowledge-Based Future

The trajectory of Senegal's Platinum Economy is not accidental; it is the result of a deliberate, multi-layered, and evolving national strategy aimed at structural economic transformation. This policy architecture provides the foundational impetus for the growth in high-value sectors and the corresponding demand for a skilled workforce. Understanding this strategic vision is essential to contextualizing the employment landscape.

### Plan Sénégal Émergent (PSE)

The cornerstone of this vision is the *Plan Sénégal Émergent (PSE)*, the nation's comprehensive development framework extending to 2035. Its stated vision is to create "An emerging Senegal in 2035 with social solidarity and the rule of law".<sup>16</sup> The PSE is constructed upon three interdependent pillars that directly mandate the development of a knowledge economy:

- 472. **Structural Transformation of the Economy:** This pillar aims to move beyond traditional growth engines by cultivating new sectors that create wealth, high-quality jobs, and social inclusion. It explicitly calls for developing industries with a high capacity to export and attract foreign direct investment (FDI), positioning Senegal as a regional hub.<sup>1</sup> This ambition necessitates a shift towards knowledge-intensive activities.
- 473. **Human Capital Development:** The PSE recognizes that economic transformation is impossible without a skilled populace. This pillar focuses on significantly improving living conditions, combating social inequality, and, crucially, investing in education, training, and health to build the human capital required to power new industries.<sup>16</sup>
- 474. **Governance, Peace, and Security:** This pillar seeks to strengthen the rule of law and create a stable, transparent business environment conducive to investment and innovation.<sup>1</sup>

The PSE serves as the government's unique framework for all economic and social

policy, creating a unified direction that subsequent, more specific strategies must align with.<sup>1</sup>

## Digital Senegal 2025 (SN2025) Strategy

Building on the PSE's broad vision, the *"Digital Senegal 2025"* (SN2025) strategy, adopted in 2016, articulates the specific goals for the digital sector. Its slogan, "digital for all and for use in everything, with a dynamic and innovative private sector within an efficient ecosystem," encapsulates its comprehensive ambition.<sup>2</sup> SN2025 sets concrete, measurable targets that directly fuel demand for the Platinum Economy workforce:

- 475. **Economic Contribution:** To increase the digital sector's contribution to national GDP to 10% by 2025, a significant leap from the 3.5% baseline.<sup>2</sup>
- 476. **Job Creation:** To create 35,000 direct jobs in the digital sector by 2025.<sup>2</sup>
- 477. **International Competitiveness:** To improve Senegal's ranking in global indices, targeting 70th place on the World Economic Forum's Network Readiness Index and 90th place on the ITU's ICT Development Index.<sup>2</sup>

The strategy, with a projected cost of approximately 2.5 billion Euros, encompasses 28 reforms and 69 projects, with a significant portion (73%) expected to be financed by the private sector, signaling a strong reliance on public-private partnerships.<sup>2</sup>

## National Data Strategy (2023-2028)

Recognizing data as a critical asset, Senegal launched its National Data Strategy in July 2023. Developed in partnership with Smart Africa and GIZ, this strategy aims to "Make data a driver of socio-economic growth, inclusiveness, innovation and international openness by 2028".<sup>20</sup> The strategy outlines 59 key measures designed to build a robust data economy. Its core objectives include:

- 478. Leveraging data for informed decision-making and innovation.
- 479. Promoting a favorable environment for entrepreneurship and value creation.
- 480. Ensuring the security and integrity of data while fostering cross-border



collaboration.<sup>20</sup>

This policy directly stimulates demand for roles in data governance, data science, and analytics, forming a key pillar of the Platinum Economy.

### **New Deal Technologique (Horizon 2034)**

The most recent policy layer, the “*New Deal Technologique*,” launched in February 2025, further sharpens the national focus with even more ambitious targets for the next decade.<sup>3</sup> This strategy is built on key pillars of digital sovereignty, the digitization of public services (including the creation of a unique biometric digital ID), and the accelerated development of the digital economy.<sup>3</sup> Its goals are transformative:

- 481. **Job Creation:** To create 150,000 direct jobs in the digital sector by 2034.
- 482. **Startup Ecosystem:** To designate and support 500 innovative startups.
- 483. **Talent Development:** To train 100,000 digital graduates annually.<sup>3</sup>

This “New Deal” represents a significant scaling-up of ambition, reinforcing the state's commitment to making the digital economy the central engine of Senegal's future growth. The clear, cohesive, and escalating ambition across these policies—from the broad vision of the PSE to the granular targets of the New Deal—creates a powerful demand signal for high-value skills. However, the very scale of these ambitions raises a critical question: is the national talent development infrastructure capable of supplying the highly skilled workforce required to meet these goals? The success of this entire strategic edifice hinges on the capacity of the education and training ecosystem to bridge the potential gap between policy goals and workforce reality.

## **1.2. Senegal's Innovation Performance: A Global Benchmark**

An analysis of Senegal's performance in global innovation indices provides a crucial diagnostic tool, revealing a complex picture of notable strengths, significant structural weaknesses, and an overarching paradox that defines its current stage of development.

## Global Innovation Index (GII)

Senegal's performance in the World Intellectual Property Organization's (WIPO) Global Innovation Index (GII) shows a positive trajectory, improving its rank from 105th in 2021 to 93rd in 2023.<sup>4</sup> Within its peer groups, Senegal holds a respectable position, ranking 5th among 28 economies in Sub-Saharan Africa and 16th among 37 lower-middle-income economies.<sup>4</sup> The country performs above the regional and income-group averages in several key areas, including

**Institutions** (rank 59th), **Market Sophistication** (rank 81st), and, most notably, **Knowledge and Technology Outputs** (rank 63rd).<sup>4</sup>

However, this positive performance is sharply contrasted by profound weaknesses in the foundational pillars of innovation. Senegal ranks a low 107th in **Human Capital and Research** and 122nd in **Business Sophistication**.<sup>4</sup> Specific indicators reveal the depth of this challenge, with extremely low rankings for "Knowledge-intensive employment" (119th) and "Females employed w/advanced degrees" (117th).<sup>4</sup>

This disparity gives rise to the central paradox of Senegal's innovation ecosystem: the country produces more innovation outputs relative to its level of innovation inputs.<sup>4</sup> While this suggests a high degree of efficiency and an ability to convert limited resources into tangible results, it also points to a potential fragility. The innovation performance is not built upon a deep and broad foundation of human capital, R&D investment, and sophisticated business practices, making the current success potentially unsustainable without strategic intervention in these weaker areas.

This imbalance is further illuminated by an examination of the drivers behind Senegal's high output score. A key contributor is the "Unicorn valuation, % GDP" indicator, where Senegal ranks 1st globally in the 2023 GII report.<sup>4</sup> This exceptional ranking is almost entirely attributable to the success of a single company: the fintech firm

**Wave**, which became Francophone Africa's first unicorn.<sup>5</sup> While Wave's success is a landmark achievement and a powerful symbol of Senegal's potential, its outsized impact on the national GII score may mask a lack of innovative breadth across the wider economy. The high output score, driven by one major outlier, coexists with a

low ranking in overall business sophistication, suggesting that the innovation landscape is more concentrated than diversified. This indicates that a primary challenge for policymakers is not just to celebrate and replicate unicorn success but to elevate the innovative capacity of the entire ecosystem of small and medium-sized enterprises (SMEs).

## **Global Knowledge Index (GKI)**

The findings of the Global Knowledge Index (GKI) reinforce the diagnosis from the GII. In the 2024 GKI, Senegal ranks 119th out of 141 countries, placing it in the category of "weak performers" in terms of knowledge infrastructure, with an overall score of 35.2 well below the world average of 47.8.<sup>25</sup>

The GKI provides a granular breakdown that mirrors the GII's conclusions. The country's weakest pillars are **Pre-University Education** (rank 127), **Research, Development and Innovation** (rank 113), and **Higher Education** (rank 110).<sup>25</sup> These results directly correspond to the GII's low ranking in Human Capital and Research. Specific areas for improvement highlighted by the GKI include low secondary education enrolment rates and a low number of citable documents per researcher, pointing to challenges in both the breadth of the talent pipeline and the depth of the research ecosystem.<sup>25</sup>

Conversely, Senegal's areas of strength in the GKI include "Gross fixed capital formation (% GDP)" and "Researchers in higher education (%)".<sup>25</sup> This again points to the paradox: the country has some of the necessary ingredients for a knowledge economy, including capital investment and a pool of researchers, but it struggles to translate these into broad-based, high-quality educational outcomes and widespread R&D activity. The data from these global indices collectively frames the central challenge for Senegal's Platinum Economy: to move from a state of concentrated, output-efficient innovation to a more sustainable model built on a robust and deep foundation of human capital and broad-based business sophistication.

## **Part II: Anatomy of the Platinum Economy: Sub-Sector Employment Analysis**

This section provides a systematic documentation and analysis of the employment landscape across the eleven defined sub-sectors of Senegal's Platinum Economy. Each sub-sector analysis includes a detailed table outlining job titles, locations, engagement types, required skills, qualifications, experience levels, and compensation indicators, based on a comprehensive review of national and international data sources.

2.1. Information and Communication Technology (ICT) Innovation

The ICT Innovation sub-sector forms the foundational layer of the digital economy, encompassing the creation, development, and maintenance of software, applications, and digital user experiences. The demand for these roles is driven by widespread digitalization across all sectors, from finance to public administration, and is directly supported by the ambitions of the SN2025 and New Deal Technologique strategies.<sup>2</sup>

Analysis of the Senegalese job market reveals a strong demand for versatile developers capable of working across the full technology stack. Job postings frequently use titles like "Full Stack Developer" or seek individuals with both front-end and back-end skills.<sup>6</sup> This trend likely reflects the structure of the local market, which is characterized by a large number of digital agencies, startups, and SMEs that require adaptable technical talent rather than the hyper-specialized roles often found in larger, more mature tech ecosystems.<sup>29</sup> This market reality places a premium on professionals who can manage a project from conception to deployment, blending technical execution with an understanding of product and user needs. Training programs, both at universities and vocational centers, must therefore emphasize not only specific programming languages but also project management methodologies and a holistic understanding of the software development lifecycle to meet this demand effectively.

Table 2.1: Employment Profile - ICT Innovation

Job Title	Location (s)	Engage ment	Technic al Skills	Soft Skills &	Qualifica tions &	Experien ce Level	Indicativ e
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		Type		Languages	Certifications		Monthly Salary (XOF)
<b>Full Stack Developer</b>	Dakar, Remote (International)	Full-time, Contract, Freelance	JavaScript (React, Node.js), Express, MongoDB, HTML/CSS, Docker, SQL/NoSQL, REST APIs <sup>6</sup>	Collaboration, Problem-Solving, Adaptability. French (Fluent), English (Professional)	Bac+4/5 Computer Science <sup>6</sup> ; Bootcamp certifications	Mid-Level (2-10 years)	350,000 - 1,000,000+ (Local); Up to 2,600,000+ (Remote) <sup>11</sup>
<b>Software Engineer</b>	Dakar, Remote (International)	Full-time, Contract	Java (Spring Boot), Python (Django), Go, Ruby, C++ <sup>31</sup>	Critical Thinking, Teamwork, Code Quality Focus. French (Fluent), English (Advanced)	Bachelor's/Master's in Engineering or Computer Science	Mid to Senior Level	400,000 - 1,400,000 (Local); Up to 2,600,000+ (Remote) <sup>11</sup>
<b>Web Developer (Frontend/Backend)</b>	Dakar, Thiès, Saint-Louis	Full-time, Freelance, Internship	<i>Frontend</i> : React, Vue.js, JavaScript, HTML, CSS. <i>Backend</i> : PHP (Laravel), Node.js,	Creativity, Attention to Detail, Communication. French (Fluent)	Bac+2/3 to Bac+5 in IT; Bootcamp certifications (GOMYC ODE, Simplon) <sup>8</sup>	Entry to Mid-Level	250,000 - 700,000 <sup>8</sup>

			Python <sup>34</sup>				
<b>Mobile Application Developer</b>	Dakar	Full-time, Contract	Swift/Objective-C (iOS), Kotlin/Java (Android), Flutter, React Native <sup>36</sup>	User-Centric Design, Problem-Solving. French (Fluent), English (Technical)	Bachelor's in Computer Science or equivalent experience	Mid-Level (2-5 years)	400,000 - 900,000 <sup>33</sup>
<b>UX/UI Designer</b>	Dakar	Full-time, Freelance	Figma, Adobe XD, Sketch, User Research Methodologies, Wireframing, Prototyping <sup>29</sup>	Empathy, Communication, Creativity, Collaboration. French (Fluent)	Degree in Design/HCI or portfolio-based evidence	Mid-Level (2-5 years)	300,000 - 600,000 (Estimated)
<b>Digital Product Manager</b>	Dakar, Remote (International)	Full-time	Agile/Scrum Methodologies, Roadmapping Tools (Jira), Market Analysis, A/B Testing Principles <sup>6</sup>	Leadership, Strategic Thinking, Communication, Prioritization. French (Fluent), English (Fluent)	Bachelor's/Master's in Business, IT, or related field; Product Owner/Scrum Master certifications	Mid to Senior Level	600,000 - 1,500,000+ (Estimated)

<b>Platform Engineer</b>	Dakar, Remote (International)	Full-time	Kubernetes, Docker, Terraform, CI/CD pipelines, Cloud Platforms (AWS, Azure, GCP) <sup>31</sup>	Systems Thinking, Automation Mindset, Reliability. French (Fluent), English (Advanced)	Degree in Engineering/CS; Cloud certifications	Senior Level	700,000 - 2,000,000+ (Local); Up to 4,000,000+ (Remote) <sup>12</sup>
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## 2.2. Research and Development (R&D)

The R&D sub-sector is fundamental to achieving long-term, sustainable innovation, yet it represents one of the most significant structural weaknesses in Senegal's Platinum Economy. The GII and GKI data consistently point to low levels of R&D expenditure, particularly from the business sector, and a scarcity of research talent employed within private firms.<sup>4</sup> Consequently, the R&D landscape is heavily dominated by the public sector, with employment opportunities concentrated within universities and specialized research institutes.

This public-sector dominance creates a critical "valley of death" between knowledge creation and commercial application. While institutions like the Université Cheikh Anta Diop (UCAD), the École Polytechnique de Thiès (EPT), and the African Institute for Mathematical Sciences (AIMS) are hubs of research activity, there is a weak linkage to the innovation needs of the local private sector.<sup>9</sup> This disconnect helps explain the paradox of Senegal having some research outputs (like publications) without a corresponding high level of broad-based business innovation. Bridging this gap requires not only more investment in R&D but also the cultivation of new roles, such as Technology Transfer Officers, who can act as intermediaries to facilitate the commercialization of public research. Without a concerted effort to build these bridges and incentivize private R&D, this sector will struggle to become a true engine of economic growth.

**Table 2.2: Employment Profile - Research and Development**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languages	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Research Scientist / Enseignant-Chercheur</b>	Dakar, Thiès, Saint-Louis	Full-time (Public Sector)	Specialized scientific knowledge, Experimental Design, Data Analysis (R, Python), Scientific Writing	Critical Thinking , Perseverance, Mentorship. French (Fluent), English (Required for publication)	PhD in a relevant STEM field (e.g., Computer Science, Biology, Mathematics)	Senior/Post-Doc	Public sector scale; Varies significantly
<b>Research Assistant / Assistant de Recherche</b>	Dakar, Thiès, Ziguinchor	Contract , Internship, Volunteer	Laboratory techniques, Data Collection, Literature Review, Statistical Software (SPSS, Stata)	Organization, Attention to Detail, Collaboration. French (Fluent)	Bachelor's or Master's degree in a relevant field	Entry to Mid-Level	Stipend-based or junior public sector scale
<b>Postdoctoral Fellow</b>	Dakar (AIMS)	Contract (Fellowship)	Advanced research in a	Independence, Innovation,	PhD (recently completed)	Post-Doc	Fellowship-dependent



			specialized field (e.g., Machine Intelligence, Climate Science), Grant Writing	Communication. English (Fluent)			(Often internationally funded)
<b>Laboratory Technician</b>	Dakar, Thiès	Full-time	Equipment Maintenance, Sample Preparation, Quality Control, Safety Protocols	Meticulousness, Reliability, Problem-Solving. French (Fluent)	DUT/BTS or Licence Pro in a technical/scientific field (e.g., Biology, Chemistry)	Entry to Mid-Level	150,000 - 400,000 (Estimated)
<b>Grant Writer / Spécialiste en Financement de la Recherche</b>	Dakar (NGOs, Universities)	Contract, Freelance	Proposal Writing, Budgeting, Knowledge of Donor Requirements (e.g., EU, World Bank, AfDB)	Persuasive Writing, Project Management, Networking. French & English (Fluent)	Master's or PhD with proven grant success	Mid to Senior Level	Project-based or % of grant
<b>Research Project Manager</b>	Dakar	Contract (Project-based)	Project Management (PMP), Financial Reporting	Leadership, Communication, Organization.	Master's /PhD + Project Management certification	Senior Level	800,000 - 2,000,000+ (Donor-funded)

			g, Stakeholder Coordination, M&E Frameworks	French & English (Fluent)	tion		projects )
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## 2.3. Advanced Professional Services

This sub-sector comprises the highly specialized advisory roles that are essential for navigating the complex legal, financial, and strategic landscapes of the innovation economy. As startups mature and technology becomes more integrated into traditional businesses, the demand for experts who can advise on intellectual property, technology law, innovation financing, and digital strategy grows. These professionals act as critical enablers, helping companies mitigate risk, secure capital, protect their innovations, and scale effectively. The presence of these roles is a sign of a maturing ecosystem, moving beyond pure technology creation to encompass the sophisticated business structures needed for long-term success.

**Table 2.3: Employment Profile - Advanced Professional Services**

Job Title	Location (s)	Engagement Type	Technical Skills	Soft Skills & Languages	Qualifications & Certifications	Experience Level	Indicative Monthly Salary (XOF)
<b>Management Consultant (Digital Strategy)</b>	Dakar	Full-time, Contract	Business Process Modeling, Market Analysis, Financial Modeling, Digital Transformation	Strategic Thinking, Problem-Solving, Presentation Skills. French	MBA or Master's in Business /Engineering from a top institution	Mid to Senior Level	700,000 - 2,500,000+

			mation Framew orks	& English (Fluent)			
<b>Strategi c Advisor (to Startup s)</b>	Dakar	Contract , Freelanc e, Advisory Board	Lean Startup Method ology, Venture Capital fundraisi ng, Go- to- Market Strategy , Corpora te Governance	Mentors hip, Networki ng, Communi cation. French & English (Fluent)	Proven entrepre neurial or investm ent track record	Senior/E xecutive	Equity, Retainer , or Day Rate
<b>Legal Advisor (Tech Law / Data Protecti on)</b>	Dakar	Full-time (Law Firm/In- house), Consulta nt	Data Protecti on Law (e.g., GDPR, Senegal ese law), IP Law, Contract Drafting, Tech M&A	Analytic al Rigor, Negotiat ion, Discretio n. French (Fluent), English (Legal)	Master's in Law (LLM) with specializ ation in Tech/IP Law; CIPP certifica tion is a plus <sup>42</sup>	Mid to Senior Level	600,00 0 - 2,000,0 00+
<b>Financi al Advisor (Innova tion Projects )</b>	Dakar	Full-time (Bank/V C), Consulta nt	Venture Valuatio n, Due Diligence, Financial Forecast ing, Capital Structuri	Quantita tive Analysis, Communi cation, Deal- making. French & English	Master's in Finance, CFA, or MBA	Mid to Senior Level	700,00 0 - 2,500,0 00+ <sup>30</sup>

			ng, M&A Analysis	(Fluent)			
<b>Intellectual Property (IP) Consultant</b>	Dakar, Remote	Consultant, Freelance	Patent Search & Filing, Trademark Registration, IP Strategy, Licensing Agreements	Detail-Oriented, Analytical Skills, Strategic Planning. French & English (Fluent)	Specialized degree/certification in IP Law or significant experience <sup>43</sup>	Senior Level	Project-based or high hourly rates
<b>Design Thinking Facilitator</b>	Dakar	Freelance, Contract	Workshop Facilitation, User Journey Mapping, Prototyping Methods, Ideation Techniques	Empathy, Active Listening, Group Dynamics Management. French (Fluent)	Certified in Design Thinking or extensive practical experience	Mid to Senior Level	150,000 - 500,000 per workshop

## 2.4. Creative Technology Integration

The convergence of creativity and technology is creating a dynamic sub-sector focused on developing and utilizing digital tools for media, entertainment, and marketing. This field leverages Senegal's vibrant cultural scene and growing digital consumer base. Roles range from the highly technical, such as AR/VR development, to the data-driven, like performance marketing. The growth of this sector is fueled by

the increasing consumption of digital content and the need for businesses to engage with customers through innovative online channels. Success in these roles requires a unique blend of artistic talent, technical proficiency, and a deep understanding of data analytics to measure and optimize creative campaigns.

**Table 2.4: Employment Profile - Creative Technology Integration**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languages	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Digital Content Producer / Creator</b>	Dakar, Remote	Full-time, Freelance	Video Editing (Adobe Premier e), Graphic Design (Adobe Creative Suite), Content Management Systems (CMS) <sup>28</sup>	Creativit y, Storytelli ng, Adaptab ility. French (Fluent), Wolof (for local content)	Portfolio of work is key; degree in Commu nication s/Media is a plus	Entry to Senior Level	200,000 - 700,000+
<b>Augmen ted/Virt ual Reality (AR/VR) Develop er</b>	Dakar (Niche)	Project-based, Freelance	Unity, Unreal Engine, C#, 3D Modelin g (Blender ), SDKs for AR/VR hardware	Innovati on, Problem -Solving, Spatial Thinking . French & English (Technic al)	Degree in CS or Engineer ing; specializ ed training	Mid to Senior Level	High project-based fees (market emergin g)
<b>Digital</b>	Dakar	Full-	Adobe	Visual	Diploma	Entry to	150,000

<b>Media Designer / Graphic Designer</b>		time, Freelance, Internship	Photoshop, Illustrator, InDesign ; UI/Web Design principles; Motion Graphics (After Effects) <sup>44</sup>	Communication, Creativity, Deadline - Oriented . French (Fluent)	in Graphic Design or strong portfolio	Mid-Level	- 500,000
<b>Digital Marketing Specialist</b>	Dakar, Remote	Full-time, Contract , Internship	SEO/SEM (Google Ads), Social Media Marketing (Meta Ads), Email Marketing, Google Analytics <sup>44</sup>	Analytical Skills, Communication, Creativity. French (Fluent), English (Professional)	Bachelor's in Marketing/Comm .; Certifications (Google, Meta) <sup>8</sup>	Entry to Senior Level	250,000 - 800,000+
<b>Marketing Data Analyst</b>	Dakar	Full-time	SQL, Data Visualization (Tableau , Power BI), Google Analytics, CRM data analysis, Python/	Business Acumen, Quantitative Reasoning, Communication. French & English (Fluent)	Degree in Statistics, Marketing, or Economics	Mid-Level (2-5 years)	400,000 - 1,000,000 (Estimated)

			R for marketin g mix modelin g				
<b>Gaming /Multim edia Develop er</b>	Dakar (Niche)	Project- based, Freelanc e	Game engines (Unity, Godot), C++/C#, Mobile game develop ment framewo rks, Audio/Vi deo integrati on	Passion for Gaming, Teamwo rk, Creativit y. French & English (Technic al)	Portfolio of games/p rojects is essential	Mid- Level	Project- based fees

## 2.5. Innovation Ecosystem Support

A thriving Platinum Economy cannot exist without a robust support infrastructure. This sub-sector includes the people and organizations dedicated to nurturing talent, fostering startups, and facilitating the flow of knowledge and capital. Roles within this domain are mission-driven, requiring a combination of business acumen, community management skills, and a passion for entrepreneurship. Professionals in this area manage incubators, coordinate startup communities, build ventures, and train the next generation of innovators. Their work is crucial for creating the fertile ground upon which tech companies can grow and succeed, directly addressing the "Business Sophistication" gap identified in the GII.<sup>4</sup>

**Table 2.5: Employment Profile - Innovation Ecosystem Support**

Job Title	Location	Engage	Technic	Soft	Qualifica	Experien	Indicativ
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	(s)	ment Type	al Skills	Skills & Languages	tions & Certifications	ce Level	e Monthly Salary (XOF)
<b>Incubator/Accelerator Program Manager</b>	Dakar, Saint-Louis, Ziguinchor	Full-time	Project Management, Startup Mentoring, Curriculum Design, Budget Management, Stakeholder Reporting <sup>45</sup>	Leadership, Networking, Empathy, Communication. French & English (Fluent)	Master's in Business /Management or equivalent experience in entrepreneurship	Senior Level (5+ years)	700,000 - 1,800,000 (Often donor-funded)
<b>Startup Community Coordinator / Manager</b>	Dakar	Full-time, Contract	Event Management, Social Media Management, Content Creation, CRM tools <sup>46</sup>	Community Building, Communication, Organization, Proactivity. French (Fluent), English (Professional)	Bachelor's degree in Comm/Marketing/Business	Entry to Mid-Level	250,000 - 600,000
<b>Venture - Building Consultant</b>	Dakar	Contract, Freelance	Business Model Canvas, Financial Modeling, Market	Strategic Thinking, Hands-on Mentality,	Experience as a founder or early-stage investor	Senior Level	High day rates or equity-based compensation



			Validation, Product -Market Fit Analysis	Problem -Solving. French & English (Fluent)			
<b>Technology Transfer Coordinator</b>	Dakar (Universities - emerging role)	Full-time	IP Assessment, Market Research, Contract Negotiation, University- Industry Liaison	Communication, Negotiation, Project Management. French & English (Fluent)	Master's /PhD in a STEM field + business /law degree or certification (e.g., RTTP)	Mid to Senior Level	N/A (Role is nascent in Senegal)
<b>Entrepreneurship Trainer / Facilitator</b>	Dakar, Thiès	Freelance, Contract	Adult Learning Principles, Workshop Facilitation, Business Plan Coaching <sup>47</sup>	Public Speaking, Mentorship, Adaptability. French (Fluent)	Certified trainer or experienced entrepreneur	Mid to Senior Level	100,000 - 400,000 per training day
<b>Senior Acceleration Specialist</b>	Dakar	Full-time	Technical, commercial, and financial support strategy; international market	Strategic planning , mentorship, network development. French	Master's degree and/or significant experience in startup acceleration	Senior Level	600,000 - 1,500,000 (Estimated)

			replicati on <sup>46</sup>	& English (Fluent)			
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### 2.6. Data and Analytics Services

This sub-sector is the engine for data-driven decision-making, directly supporting the vision of Senegal's National Data Strategy.<sup>20</sup> It encompasses the entire data lifecycle, from engineering massive data pipelines to analyzing business intelligence and ensuring data is governed ethically and effectively. The demand for these roles is rapidly growing as both public and private entities recognize the value locked within their data.

A key dynamic in this sector is the potential mismatch between the supply of highly trained talent and the current maturity of the local market. Universities like ESP and Université de Thiès are now producing graduates with advanced degrees in AI, Big Data, and Data Science.<sup>9</sup> However, job market analysis suggests a higher volume of openings for Data Analyst and BI Analyst roles, which focus on descriptive and diagnostic analytics, compared to more specialized roles like Big Data Engineer or ML Engineer.<sup>7</sup> This suggests many local firms are still in the early stages of their data journey. This situation creates both an opportunity and a risk: the opportunity for Senegalese talent to find lucrative international remote work, and the risk of a "brain drain" if the domestic market does not mature quickly enough to absorb these high-end skills. A key policy challenge is therefore to stimulate local demand by showcasing the ROI of advanced analytics to traditional sectors of the economy.

**Table 2.6: Employment Profile - Data and Analytics Services**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languag es	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Big</b>	Dakar	Full-time	Hadoop,	Systems	Master's	Senior	800,00

<b>Data Engineer</b>			Spark, Kafka, Data Warehouse, ETL/ELT pipelines, Cloud data services (AWS/Azure/GCP) <sup>49</sup>	Thinking, Problem-Solving, Scalability Focus. French (Fluent), English (Technical)	in CS/Engineering; Cloud data certifications	Level	0 - 2,500,000+ (Estimated)
<b>Business Intelligence (BI) Analyst</b>	Dakar	Full-time, Contract	Power BI, Tableau, SQL, DAX, Data Modeling, Reporting, KPI development <sup>50</sup>	Business Acumen, Communication, Data Visualization. French (Fluent)	Bachelor's/Master's in IT, Finance, or Stats; Power BI/Tableau certification	Mid-Level (2-5 years)	400,000 - 900,000
<b>Data Governance Specialist</b>	Dakar	Full-time	Data Quality Frameworks, Metadata Management, Data Lineage, Master Data Management (MDM), Compliance	Attention to Detail, Policy-Oriented, Communication. French & English (Fluent)	Degree in IT/Law; Certifications like CDMP, CIPP	Senior Level	700,000 - 1,800,000 (Estimated)

			(e.g., GDPR)				
<b>Geographic Information Systems (GIS) Analyst</b>	Dakar, Saint-Louis	Full-time, Contract	ArcGIS, QGIS, Spatial Analysis, Remote Sensing, Database Management (PostGIS) <sup>51</sup>	Spatial Thinking, Cartography, Analytical Skills. French (Fluent)	Master's in Geography, Geomatics, or Environmental Science	Mid-Level (2-5 years)	350,000 - 750,000
<b>Data Scientist</b>	Dakar, Remote (International)	Full-time, Internship	Python (Pandas, NumPy, Scikit-learn), R, Machine Learning, Deep Learning (TensorFlow, PyTorch), SQL, Statistics <sup>7</sup>	Curiosity, Critical Thinking, Experimentation. French (Fluent), English (Advanced)	Master's /PhD in CS, Stats, or related field; Professional certificates (IBM, Coursera) <sup>7</sup>	Mid to Senior Level	400,000 - 1,500,000+ (Local); Up to 3,500,000+ (Remote) <sup>52</sup>
<b>Data Analyst</b>	Dakar, Thiès	Full-time, Internship	Excel, SQL, Python/R (for analysis), Data Visualization tools, Statistical analysis	Analytical Mindset, Communication, Attention to Detail. French (Fluent)	Bachelor's degree in a quantitative field; Bootcamps (GOMYC ODE)	Entry to Mid-Level	300,000 - 600,000 <sup>8</sup>

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## 2.7. Digital Infrastructure and Cloud Services

This sub-sector provides the essential technological foundation upon which the entire Platinum Economy is built. It includes the architects and engineers who design, build, and maintain robust networks, cloud environments, and telecommunications systems. The government's strategic focus on digital sovereignty and the development of local digital infrastructures, such as data centers and a sovereign cloud, as part of the *New Deal Technologique*, directly fuels demand in this area.<sup>23</sup> Furthermore, the planned rollout of 5G and the expansion of IoT applications will create new, highly specialized roles in network planning and architecture. Professionals in this field are critical for ensuring reliable, secure, and scalable connectivity for all other digital services.

**Table 2.7: Employment Profile - Digital Infrastructure and Cloud Services**

Job Title	Location (s)	Engagement Type	Technical Skills	Soft Skills & Languages	Qualifications & Certifications	Experience Level	Indicative Monthly Salary (XOF)
<b>Network Architect</b>	Dakar	Full-time	Network Design (LAN/WAN), Routing/Switching (Cisco, Juniper), Firewalls, SD-WAN, TCP/IP	Strategic Planning, Problem-Solving, Systems Thinking, French (Fluent), English (Technical)	Bachelor's/Master's in Engineering/CS; Certifications (CCIE, JNCIE)	Senior Level	900,000 - 2,500,000+

<b>Cloud Solutions Architect</b>	Dakar, Remote	Full-time, Contract	AWS, Azure, GCP services; Infrastructure as Code (Terraform); Containerization (Docker, Kubernetes); Microservices Architecture <sup>7</sup>	Business Acumen, Communication, Strategic Design. French & English (Fluent)	Degree in CS/IT; Cloud Architect certifications (AWS Certified Solutions Architect)	Senior Level	1,000,000 - 3,000,000+ (Local); Up to 5,000,000+ (Remote) <sup>56</sup>
<b>Systems Engineer / Administrator</b>	Dakar, Thiès	Full-time	Linux/Windows Server Admin, Virtualization (VMware, Hyper-V), Scripting (Bash, PowerShell), Monitoring Tools	Reliability, Problem-Solving, Attention to Detail. French (Fluent)	Bac+3/5 in IT; Certifications (LPIC, MCSA)	Mid-Level (3-7 years)	450,000 - 1,200,000
<b>Telecommunications Network Planner (5G/IoT)</b>	Dakar	Full-time	RF Planning, Core Network Architecture (5GC), IoT Protocol	Forward-Thinking, Analytical Skills, Project Management.	Master's in Telecom Engineering	Senior Level	1,000,000 - 2,800,000+ (Estimated)

			s (MQTT, LoRaWAN), RAN technologies	French (Fluent), English (Technical)			
<b>Cloud Engineer</b>	Dakar, Remote	Full-time, Contract	Cloud platform implementation (AWS, Azure), CI/CD, Automation (Ansible), Security Best Practices <sup>36</sup>	Collaboration, Automation Mindset, Adaptability. French (Fluent), English (Professional)	Bachelor's in IT; Cloud Practitioner/Associate certifications	Mid-Level (2-5 years)	500,000 - 1,500,000 (Local); Up to 3,500,000+ (Remote) <sup>56</sup>

## 2.8. Emerging Technologies

This sub-sector represents the frontier of the Platinum Economy, focusing on technologies with the potential to create entirely new markets and disrupt existing ones. It includes fields like blockchain, the Internet of Things (IoT), robotics, and financial technology (Fintech). While some areas, like Fintech, are relatively mature in Senegal with major players like Wave <sup>5</sup>, others like blockchain and robotics are still nascent. Employment in this sub-sector is often found in innovative startups, corporate R&D labs, or specialized consulting firms. The roles are highly technical and require a commitment to continuous learning, as the technologies evolve at a rapid pace. Fostering growth in these areas is key to positioning Senegal not just as a consumer of technology, but as a creator of future innovations.

**Table 2.8: Employment Profile - Emerging Technologies**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languag es	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Blockch ain Develop er</b>	Dakar, Remote	Full-time, Freelanc e	Solidity, Rust, Web3.js, Ethers.js , Smart Contract Develop ment, EVM, Cryptog raphy principle s <sup>57</sup>	Innovati on, Security Mindset, Problem -Solving. English (Fluent) is often required	Degree in CS; specializ ed online courses and project portfolio	Mid to Senior Level	High, often paid in USD for remote/f reelance roles
<b>Internet of Things (IoT) Enginee r</b>	Dakar	Full-time, Project-based	Embedd ed Systems (C/C++), IoT Protocol s (MQTT, CoAP), Sensor Integrati on, Cloud IoT Platform s (AWS IoT, Azure IoT Hub)	Systems Thinking , Hardwar e/Softw are Integrati on, Reliabilit y. French (Fluent), English (Technic al)	Bachelor 's/Maste r's in Electrica l/Compu ter Engineer ing	Mid-Level (3+ years)	600,000 - 1,600,000 (Estimat ed)
<b>Robotics / Mechat ronics</b>	Dakar (Industri al/Acade mic)	Full-time	PLC Program ming, CAD/CA	Hands-on Problem Solving,	DUT/Lic ence or Engineer ing	Mid-Level	400,000 - 1,200,000



<b>Technologist</b>			M software , Robot Operating System (ROS), Mechanical/Electrical Systems	Interdisciplinary Thinking . French (Fluent)	degree in Mechatronics, Robotics , or Industrial Automation		(Estimated)
<b>Fintech Specialist / Developer</b>	Dakar	Full-time, Contract	Payment Gateway Integration, Mobile Money APIs, Secure Coding Practices, Financial Regulations (e.g., PCI DSS) 29	Business Acumen, Security Focus, Collaboration. French (Fluent), English (Professional)	Degree in CS/Finance; experience in banking/ payments sector	Mid to Senior Level	600,000 - 2,000,000+

## 2.9. Education and Training for High-Skill Roles

The growth of all other Platinum Economy sub-sectors is contingent on the strength of this one. This domain includes the professionals responsible for designing and delivering the education and training that produces the next generation of tech talent. It spans from university curriculum developers and coding bootcamp instructors to instructional designers creating engaging e-learning content. These roles are critical for closing the skills gap identified by national strategies and global

indices.<sup>4</sup> Professionals in this field must combine pedagogical expertise with up-to-date knowledge of industry trends and technologies to ensure that the talent supply chain is responsive to the dynamic needs of the market.

**Table 2.9: Employment Profile - Education and Training for High-Skill Roles**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languag es	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Curricul um Developer (ICT/STEM)</b>	Dakar, Thiès	Full-time, Contract	Subject Matter Expertise, Pedagogical Design, Learning Outcome Mapping , Assessment Design	Collaboration, Innovation, Communication. French (Fluent)	Master's /PhD in the relevant field + experience in education	Senior Level	Varies (Public sector/private institution)
<b>Coding Bootcamp Instructor</b>	Dakar	Full-time, Part-time	Expertise in a specific stack (e.g., MERN, Python/ Data Science) , Code Review, Mentoring <sup>8</sup>	Mentorship, Public Speaking, Patience , Empathy . French (Fluent)	Senior-level industry experience as a developer/data scientist	Senior Level	500,000 - 1,500,000+
<b>E-</b>	Dakar,	Full-	LMS	Problem	Degree	Mid-	400,00

<b>learning Platform Developer</b>	Remote	time, Freelance	platforms (Moodle), SCORM/xAPI standards, Web Development skills (PHP, JavaScript), Cloud hosting <sup>60</sup>	-Solving, User-Centricity, Project Management. French (Fluent)	in CS or IT with experience in educational technology <sup>60</sup>	Level (2-5 years)	0 - 900,000
<b>Instructional Designer (Digital Skills)</b>	Dakar	Full-time, Contract	ADDIE/SAM models, Storyboarding, Content Authoring Tools (Articulate, Captivate), Video Production <sup>60</sup>	Creativity, Communication, Project Management. French (Fluent)	Master's in Instructional Design, Educational Technology, or related field	Mid-Level	450,000 - 1,000,000

## 2.10. Policy, Regulation, and Standards

This sub-sector operates at the intersection of technology, law, and governance. Professionals in these roles are responsible for creating the regulatory environment that allows the Platinum Economy to flourish while protecting citizens and ensuring fair competition. This includes analyzing technology policy, drafting digital

regulations, overseeing data protection compliance, and advising on national cybersecurity strategy. These roles are predominantly found within government ministries (e.g., Ministry of Communication, Telecommunications and Digital Economy), regulatory bodies (e.g., ARTP, CDP), and specialized consulting firms. The demand for these experts is directly driven by the implementation of the National Data Strategy and the New Deal Technologique's focus on digital sovereignty and security.<sup>20</sup>

**Table 2.10: Employment Profile - Policy, Regulation, and Standards**

Job Title	Location (s)	Engagement Type	Technical Skills	Soft Skills & Languages	Qualifications & Certifications	Experience Level	Indicative Monthly Salary (XOF)
<b>Technology Policy Analyst</b>	Dakar	Full-time (Government, Think Tank)	Policy Analysis, Economic Impact Assessment, Comparative Law, Stakeholder Consultation	Analytical Rigor, Writing, Communication, Neutrality. French & English (Fluent)	Master's /PhD in Public Policy, Law, or Economics with a tech focus	Mid to Senior Level	Public sector scale or donor-funded rates
<b>Digital Regulation Specialist</b>	Dakar	Full-time (Regulator/Consultancy)	Telecom Law, Competition Law, E-commerce Regulation, Platform Governance	Legal Analysis, Negotiation, Strategic Thinking. French & English (Fluent)	Master's in Law or Economics with specialization in regulation	Senior Level	800,000 - 2,500,000+

<b>Data Protection Officer (DPO) / Oversight</b>	Dakar	Full-time, Consultant	Data Protection Law (Senegalese & international), Risk Assessment, Audit, Compliance Management <sup>42</sup>	Integrity, Communication, Attention to Detail. French (Fluent)	Law degree + DPO certification (e.g., CIPP/E) <sup>42</sup>	Senior Level	700,000 - 2,000,000+
<b>Cybersecurity Policy Advisor</b>	Dakar	Full-time (Government/Military)	National Security Strategy, Critical Infrastructure Protection, Cyber Threat Intelligence, International Norms <sup>61</sup>	Strategic Thinking, Discretion, Communication. French & English (Fluent)	Master's in International Relations, Security Studies, or Cybersecurity	Senior Level	Public sector scale (often high-level)

## 2.11. Support Functions

While not always in the spotlight, these support roles are the connective tissue that holds innovation projects and technology companies together. They ensure that projects are delivered on time and on budget, products are well-documented and of high quality, and user needs are understood and met. This sub-sector includes

project managers who orchestrate complex initiatives, technical writers who make technology understandable, quality assurance engineers who ensure products are reliable, and user researchers who provide the critical insights that guide development. The availability and quality of these professionals are a key indicator of an ecosystem's maturity, reflecting its ability to execute complex projects professionally and at scale.

**Table 2.11: Employment Profile - Support Functions**

Job Title	Location (s)	Engage ment Type	Technic al Skills	Soft Skills & Languages	Qualifica tions & Certifica tions	Experien ce Level	Indicativ e Monthly Salary (XOF)
<b>Project Manager (Innovation/IT)</b>	Dakar, Kaolack, Kédougou	Full-time, Contract	Agile/Scrum, Waterfall, Project Management Software (Jira, MS Project), Budgeting, Risk Management <sup>62</sup>	Leadership, Communication, Organization, Negotiation. French (Fluent), English (Professional)	Bachelor's/Master's; PMP, PRINCE2, or Scrum Master certification	Mid to Senior Level	600,000 - 1,800,000+
<b>Technical Writer / Documentalist</b>	Dakar	Full-time, Freelance	API Documentation (Swagger), Content Management Systems, Markdown, Version	Clarity, Precision, Empathy for the User, Organization. French & English (Fluent)	Degree in a technical field or communications with a strong technical portfolio	Mid-Level	350,000 - 750,000

			Control (Git)				
<b>Quality Assurance (QA) &amp; Testing Engineer</b>	Dakar	Full-time	Test Automation (Selenium, Cypress), Manual Testing, Test Case Design, Bug Tracking (Jira), Performance Testing	Attention to Detail, Analytical Mindset, Communication. French (Fluent)	Bachelor's in CS/IT; ISTQB certification is a plus	Entry to Senior Level	300,000 - 900,000
<b>User Researcher</b>	Dakar	Full-time, Contract	User Interviews, Surveys, Usability Testing, Persona Development, Data Analysis (qualitative & quantitative)	Empathy, Active Listening, Analytical Skills, Communication. French (Fluent), Wolof (for local research)	Degree in HCI, Psychology, Anthropology, or related field	Mid-Level	400,000 - 800,000
<b>Product Support Engineer / Technical</b>	Dakar	Full-time	Troubleshooting, SQL (for queries), CRM systems,	Problem-Solving, Patience, Communication,	Bac+2/3 in IT or equivalent experience	Entry to Mid-Level	200,000 - 500,000

Support Specialist			Knowledge of specific product architecture <sup>64</sup>	Empathy . French (Fluent), English (for international clients)			
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## Part III: The Talent Supply Chain: Education and Professional Development

The capacity of Senegal's Platinum Economy to achieve its ambitious goals is fundamentally constrained by the quality and quantity of its talent supply chain. This section maps the critical institutions, from formal university programs to agile vocational training centers, that are responsible for educating and upskilling the workforce.

### 3.1. The Foundation: Higher Education and Research Institutions

Senegal's universities and specialized institutes form the bedrock of its talent pipeline, providing the foundational theoretical knowledge and advanced degrees required for the most sophisticated roles in the Platinum Economy. Several key institutions have developed programs specifically tailored to the needs of the digital and knowledge sectors.

484. **Université Cheikh Anta Diop de Dakar (UCAD) and École Supérieure Polytechnique (ESP):** As the country's largest and oldest university, UCAD, through its affiliated ESP, is a major source of engineering and technical talent. ESP offers a highly relevant **Master in Artificial Intelligence and Big Data (MIABD)** within its Chemical Engineering and Applied Biology department. The curriculum is designed to equip students with skills in Big Data platforms,



distributed computing, Deep Learning, and the implementation of AI applications like chatbots and decision support systems.<sup>9</sup> The institution also offers foundational degrees in computer engineering, management, and other STEM fields.<sup>9</sup>

485. **Université de Thiès (UFR SES & EPT):** The University of Thiès is another key player, particularly through its UFR des Sciences Économiques et Sociales (SES) and the École Polytechnique de Thiès (EPT). The UFR SES offers a **Master in Data Science and Applications (SDA)**, which focuses on mathematical concepts, NoSQL databases, Big Data frameworks, and advanced machine learning techniques.<sup>49</sup> The EPT provides a five-year engineering program with a specialization in **Génie Informatique et Télécommunications** (Computer Engineering and Telecommunications), designed to produce high-level engineers capable of designing and managing complex software and network architectures.<sup>41</sup>
486. **Dakar Institute of Technology (DIT):** A private institution that has carved a niche in market-responsive tech education. DIT offers a **Licence (Bachelor's) in Big Data**, a three-year program covering foundational skills in Python, R, Machine Learning, Big Data Architecture, and data management in compliance with regulations like GDPR. The program explicitly aims to produce Junior Data Scientists, Data Engineers, and Data Analysts.<sup>67</sup>
487. **African Institute for Mathematical Sciences (AIMS):** AIMS is a pan-African network of centers of excellence with a campus in Mbour, Senegal. It represents the pinnacle of mathematical science education on the continent. AIMS offers a world-class, fully-funded, 10-month **Master's in Mathematical Sciences**, which attracts top graduates from across Africa. Key initiatives include a specialization in **Machine Intelligence (AMMI)**, backed by Google and Facebook, and a **Co-operative Master's in Data Science**, which integrates industry placements, directly addressing the need for practical experience.<sup>40</sup> AIMS is a critical source of elite talent for research and advanced data science roles.

**Table 3.1: Key Higher Education Institutions for the Platinum Economy**

Institution	Key Department/ School	Relevant Degree Programs	Core Curriculum Focus	Research Focus Areas	Contact Information
<b>Université Cheikh Anta</b>	École Supérieure	Master en Intelligence	Big Data Platforms,	AI Applications,	Tel: +221 33 824 05 40;

<b>Diop (UCAD)</b>	Polytechnique (ESP)	Artificielle et Big Data (MIABD); Diplôme d'Ingénieur de Conception (DIC) en Génie Informatique	Deep Learning, Distributed Computing, Functional Programming, AI Algorithms <sup>9</sup>	Data Management Systems	Location: Dakar
<b>Université de Thiès</b>	UFR Sciences Économiques et Sociales (SES); École Polytechnique de Thiès (EPT)	Master en Sciences des Données et Applications (SDA); Diplôme d'Ingénieur en Génie Informatique et Télécommunications	NoSQL Databases, Big Data Frameworks, Reinforcement Learning, Network Architecture, Software Engineering <sup>49</sup>	Data Mining, Distributed Systems, AI, Knowledge Engineering	Location: Thiès
<b>Dakar Institute of Technology (DIT)</b>	N/A (Private Institute)	Licence en Informatique "Big Data"	Python, R, Machine Learning, Big Data Architecture, Data Management & GDPR, Containerization (Docker) <sup>67</sup>	Applied Data Science, Web Development	Tel: +221 33 822 47 33; Email: info@dit.sn; Location: Dakar
<b>African Institute for Mathematical Sciences (AIMS) Senegal</b>	N/A (Pan-African Institute)	Master's in Mathematical Sciences; African Master's in Machine Intelligence (AMMI); Co-	Machine Learning, Climate Science, Data Science, Core Mathematics	Mathematics & Applications, AI for Science, Malaria Modelling	Location: Mbour-Thies; Km2 route de Joal

		op Master's in Data Science	I Sciences <sup>40</sup>		
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### 3.2. The Accelerators: Vocational Training and Digital Skills Bootcamps

Complementing the formal education system is a dynamic and growing ecosystem of vocational and non-traditional training providers. These organizations are crucial for their agility, offering intensive, practical, and industry-aligned programs that can rapidly skill, reskill, and upskill talent to meet immediate market demand.

488. **Orange Digital Center (ODC):** A flagship initiative by the national telecom operator, the ODC in Dakar is a comprehensive ecosystem in itself. Its core training component is the **École du Code Sonatel Academy**, the first free coding school in West Africa. This 10-month, project-based program trains young people in high-demand digital professions.<sup>10</sup> The ODC also houses a **Solidarity FabLab** for digital manufacturing and prototyping, an accelerator (**Orange Fab**), and a **5G Lab**, providing a holistic environment for learning, creating, and launching ventures.<sup>72</sup>
489. **Simplon.co:** This social enterprise, with a presence in Senegal since 2017, focuses on digital training as a lever for inclusion.<sup>75</sup> Simplon offers a range of intensive, tuition-free programs targeting in-demand tech professions like **Development, Data/AI, and Cybersecurity**. It partners with corporations and foundations to deliver tailored training that often targets unemployed youth and those seeking professional reconversion, directly addressing both skills gaps and social inclusion goals.<sup>35</sup>
490. **GOMYCODE:** A prominent private coding bootcamp with a campus in Dakar, GOMYCODE offers immersive 5-month programs in **Full-Stack Web Development, Data Science, and Cybersecurity**. Their model emphasizes practical, project-based learning led by industry experts. They report a 70% employment rate for their graduates and provide indicative local starting salaries for these roles, playing a key role in setting market expectations and providing a fast track to employment for aspiring tech professionals.<sup>8</sup>
491. **Hubs and Other Initiatives:** Major innovation hubs like **CTIC Dakar** and **Jokkolabs** are also significant contributors to the training landscape. As part of

their incubation and acceleration services, they provide workshops, masterclasses, and mentorship on technical and business topics.<sup>47</sup> CTIC Dakar, for instance, offers pre-incubation, acceleration, and incubation programs that include technical and commercial support.<sup>48</sup> Jokkolabs runs an online "Academy" with courses on the entrepreneurial journey, from structuring a business model to building a business plan.<sup>47</sup>

**Table 3.2: Leading Vocational and Digital Skills Training Providers**

Provider	Program Specializations	Duration	Target Audience	Key Partnerships	Contact Information
<b>Orange Digital Center</b>	Web/Mobile Development, Digital Skills (TechKi), Prototyping (FabLab)	10 months (École du Code)	Youth (students, graduates, drop-outs), Entrepreneurs	Ministry of Vocational Training, UNDP	Location: Dakar; Email: <a href="mailto:contact@orangedigitalcenter.sn">contact@orangedigitalcenter.sn</a>
<b>Simplon.co Senegal</b>	Web Development, Data/AI, Cybersecurity, Digital Skills for Industry	Varies (intensive bootcamps)	Youth, Unemployed, Professionals seeking reconversion	TotalEnergies Foundation, Corporate Partners	Location: Dakar; Website: <a href="http://simplon.co">simplon.co</a>
<b>GOMYCODE Senegal</b>	Full-Stack Development, Data Science, Cybersecurity, Digital Marketing	5 months (Full-time bootcamps)	Career changers, Graduates, Aspiring tech professionals	Meta	Tel: +221 77 526 38 59; Location: Dakar
<b>CTIC Dakar</b>	Entrepreneurship, Business Modeling, Technical &	3 months (Pre-incubation) to 1 year+ (Incubation)	Project holders, Startups (idea to growth)	World Bank, IFC, OPTIC	Tel: +221 33 842 49 00; Location: Dakar

	Commercial Acceleration		stage)		
<b>Jokkolabs Dakar</b>	Entrepreneurship, Business Plan Development, Community Workshops	Self-paced courses, Events	Entrepreneurs, Creatives, Innovators	Global Entrepreneurship Week, Africa Code Week	Tel: +221 33 827 38 31; Email: officedakar@jokkolabs.co

## Part IV: Market Dynamics and Strategic Intelligence

### 4.1. Labor Market and Compensation Analysis

The labor market for Senegal's Platinum Economy is characterized by a complex interplay of local demand, global opportunities, and significant wage disparities. While a nascent local market offers growing opportunities, it competes directly with a global remote work ecosystem that offers substantially higher compensation, creating a critical challenge for talent attraction and retention within domestic firms.

Local salary benchmarks, derived from national job portals and surveys, show considerable variation and are generally modest compared to global standards. For instance, a junior web developer might expect a starting salary in the range of 250,000 to 350,000 XOF per month.<sup>8</sup> Votresalaire.org indicates a broader starting range for application programmers of 336,442 to 907,151 XOF per month, increasing with experience.<sup>33</sup> Data from Paylab.com reflects wide salary bands, with 80% of DevOps Engineers earning between 115,595 and 461,983 XOF monthly, and Data Scientists earning between 97,491 and 373,669 XOF.<sup>52</sup> These figures suggest a market that is still maturing, with less standardized compensation structures.

This local reality is starkly contrasted by the opportunities available through international remote work. Data from global hiring platforms demonstrates a dramatic

salary arbitrage. A remote Software Developer based in Senegal can command a median annual salary of \$52,076 (approximately 2,600,000 XOF/month), while a remote DevOps Engineer can earn a median of \$80,015 annually (approximately 4,000,000 XOF/month).<sup>11</sup> This represents a potential tenfold increase over entry-level local salaries and is significantly higher than even senior-level local compensation.

This discrepancy is the single most important dynamic shaping the high-end talent market in Senegal. It demonstrates that Senegalese professionals possess globally competitive skills, but it simultaneously creates an immense challenge for local companies, startups, and even public sector entities seeking to hire and retain experienced talent. Local firms cannot realistically compete on salary alone. This forces them to compete on other factors, such as mission, culture, local impact, and equity, but it undeniably puts them at a structural disadvantage. This dynamic fuels a "brain drain" not of people leaving the country, but of talent leaving the *local* economy to serve international markets from within Senegal's borders.

The freelance and gig economy further amplifies this trend. Platforms like Upwork, AfricaShore, and the local Dakarfreelance.com provide Senegalese professionals with direct access to a global client base, allowing them to bypass the local salary structure entirely.<sup>80</sup> This ecosystem is particularly active for roles like web development, graphic design, and digital marketing, enabling a significant portion of the tech workforce to operate within a globalized, contract-based framework.

**Table 4.1: Indicative Monthly Salary Ranges (XOF/USD) for Key Platinum Economy Roles: Local Market vs. Global Remote**

Job Role	Local Market Salary Range (XOF)	Local Market Salary Range (USD Equivalent)	Global Remote Salary Range (USD)	Global Remote Salary Range (XOF Equivalent)	Key Data Sources
Software Developer (Mid-level)	400,000 - 1,000,000	\$660 - \$1,650	\$4,340 (Median)	~2,600,000	11
Data Scientist (Mid-level)	300,000 - 700,000	\$500 - \$1,150	N/A (High demand, comparable)	N/A	8

			to developers)		
<b>DevOps Engineer (Mid-level)</b>	350,000 - 800,000	\$580 - \$1,320	\$6,670 (Median)	~4,000,000	12
<b>Cybersecurity Analyst (Mid-level)</b>	400,000 - 900,000	\$660 - \$1,500	N/A (High demand, comparable to DevOps)	N/A	8

*Note: USD equivalents are estimated at 605 XOF/USD for illustrative purposes. Local ranges are synthesized from multiple sources and represent a broad spectrum from junior to experienced roles. Remote salaries are median figures from global platforms.*

## 4.2. Gender and Inclusion in Senegal's Tech Sector

Achieving inclusive growth, a central tenet of the PSE, requires a deliberate focus on gender equality within the burgeoning Platinum Economy. While Senegal has a vibrant ecosystem of initiatives aimed at promoting women in technology, significant structural barriers and a "leaky pipeline" persist, hindering the full participation and advancement of women in the sector.

The challenge is quantifiable and multifaceted. The GII highlights Senegal's poor performance on the "Females employed w/advanced degrees" indicator, ranking 117th globally.<sup>4</sup> Reports suggest that women hold only 35% of IT jobs, and the tech sector is still widely perceived as a "masculine domain".<sup>13</sup> A 2017 study by CRES noted that women in Senegal have one-third less chance than men to benefit from ICTs, facing barriers related to the cost and accessibility of technology and internet connectivity.<sup>83</sup> Furthermore, within households, women often have less decision-making power regarding the acquisition and use of technology.<sup>83</sup>

In response, a rich tapestry of initiatives has emerged. These include:

492. **Hubs and Networks: Jiguène Tech Hub**, founded in 2012, stands out as West Africa's first tech hub run by and for women, having trained hundreds in

technology and leadership skills.<sup>13</sup> Other key networks include **Women In Tech Senegal**, **Ladies Tech Hub**, and **GALSEN AI**, which specifically focuses on empowering women in artificial intelligence.<sup>15</sup>

493. **Corporate and Institutional Programs:** Major corporations and international bodies are active participants. Orange Senegal has launched the **Prize for Female Digital Entrepreneurship**, and UNESCO supports the **YouthMobile** initiative to train girls in mobile app development.<sup>13</sup> Universities are also playing a role; ESP and EPT have launched awareness campaigns in high schools to encourage girls to pursue STEM subjects, reaching over 5000 girls.<sup>14</sup>

494. **Investment and Funding:** The **Women's Investment Club Senegal (WIC Senegal)** is a critical initiative that groups female investors to support women's entrepreneurship, including in the tech sector.<sup>15</sup>

495. **Government and Donor Projects:** Large-scale projects like **Goin'Digital**, with a budget of \$14.9 million, aim to tackle digital inclusion at a national level.<sup>85</sup>

Despite the proliferation of these valuable programs, which primarily focus on encouraging girls and young women to *enter* the tech pipeline, a more profound challenge remains. The data and anecdotal evidence suggest a "leaky pipeline" effect: women may be entering the field but are not advancing to senior technical and leadership positions at the same rate as their male counterparts. The critical issue is shifting from simply increasing participation to ensuring retention and career progression. This requires a new wave of interventions focused on mentorship for mid-career women, leadership development programs, and strengthening the funding ecosystem for female-founded startups. Without these measures, the Platinum Economy risks failing to leverage the full potential of half its population, thereby limiting its own growth and innovation capacity.

#### 4.3. Decentralizing Opportunity: The Growth of Secondary Tech Hubs

For the Platinum Economy to be truly national and inclusive, its opportunities must extend beyond the capital city of Dakar. Recognizing this, government programs and ecosystem partners are making concerted efforts to cultivate technology and innovation clusters in secondary cities, notably Thiès, Saint-Louis, and Ziguinchor. These initiatives aim to leverage regional strengths and create localized engines of growth.



496. **Thiès:** Located strategically near Dakar, Thiès is being positioned as a "ville numérique" (digital city) under the **Smart Sénégal** program. This involves significant public investment in digital infrastructure, including public Wi-Fi, a "Maison du Citoyen" (Citizen House), and a Safe City video surveillance system.<sup>86</sup> The program has also modernized educational facilities at the **Institut Supérieur d'Enseignement Professionnel (ISEP) de Thiès** with VDI equipment and fiber optic connectivity.<sup>86</sup> Civil society organizations like **Paradigm Initiative** are also active in the region, running digital inclusion and training programs for youth.<sup>87</sup>
497. **Saint-Louis:** The historic city of Saint-Louis is home to **Teranga Tech Incub'**, an innovation hub with a specific focus on the "blue economy" (aquaculture, marine resources) and sustainable tourism.<sup>88</sup> The incubator provides a 230-square-meter equipped space and runs a six-month program for local entrepreneurs, connecting them with a network of experts from institutions like Université Gaston Berger (UGB) and the IRD. Its portfolio includes startups working on ecological charcoal (Gold Green), integrated fish farming (DIAGAMBAL), and marine data collection (DeepSEA).<sup>88</sup>
498. **Ziguinchor:** In the Casamance region, development efforts are focused on fostering a "green economy." **Teranga Tech Incub'** also operates a hub in Ziguinchor dedicated to supporting entrepreneurs in green technology and the cultural and creative industries (ICC).<sup>89</sup> This initiative partners with the University of Ziguinchor and organizations like Makesense Africa to provide tailored support. Separately, the **I&P Education and Employment program**, in partnership with the Mastercard Foundation, is investing in **ISM Ziguinchor** to strengthen its digital capacity and improve the employability of youth in the region, with a focus on empowering women.<sup>90</sup>

These decentralization efforts are crucial for spreading the benefits of the digital transformation, creating jobs in diverse regions, and tailoring innovation to solve local challenges in agriculture, environment, and resource management.

## **Part V: Strategic Recommendations for a Thriving Platinum Economy**

The preceding analysis of Senegal's Platinum Economy reveals a landscape of immense potential constrained by specific, addressable structural challenges. To translate the ambitious national vision into a sustainable, inclusive, and globally competitive reality, stakeholders must pursue a coordinated strategy focused on strengthening the talent pipeline, broadening the innovation base, and creating a more dynamic market environment. The following recommendations are directed at key actors in the ecosystem.

### **5.1. For Workforce Development Stakeholders (Ministries of Education/Training, Universities, Training Centers)**

499. **Recommendation 1: Bridge the Theory-Practice Gap through Mandatory Experiential Learning.** The gap between academic curricula and the practical, agile needs of the tech industry is a significant bottleneck. To address this, a national policy should be implemented requiring all students in ICT, engineering, and data science degree programs to complete a mandatory, credit-bearing internship or co-op placement. This can be modeled on the successful approach of AIMS, which integrates industry placements into its master's programs.<sup>68</sup> Universities like UCAD/ESP and EPT should be funded and incentivized to build robust industry partnership offices capable of sourcing and managing thousands of placements annually. This will ensure graduates possess not only theoretical knowledge but also the practical skills and professional network necessary for immediate employability, directly addressing the market's demand for job-ready talent.

500. **Recommendation 2: Establish a National Digital Skills Certification Framework.** The current landscape features a mix of formal degrees, bootcamp certificates, and online credentials, making it difficult for employers to assess and compare candidate qualifications. The Ministry of Vocational Training, in collaboration with the Ministry of the Digital Economy and key industry associations like OPTIC<sup>91</sup>, should lead the creation of a unified National Digital Skills Certification Framework. This framework would not replace existing degrees but would provide a standardized benchmark for specific competencies (e.g., "Certified Full-Stack Developer," "Certified Data Analyst"). It would map the curricula of universities, bootcamps like GOMYCODE<sup>8</sup>, and centers like Orange Digital Center<sup>10</sup> to these standards, creating clearer pathways for students and

greater transparency for employers.

## 5.2. For Innovation Ecosystem Planners (APIX, DER/FJ, Hubs, Investors)

- **Recommendation 3: Shift Investment Focus from Incubation to Acceleration and Growth Funding.** Senegal's ecosystem is relatively rich in incubators for ideation-stage startups but suffers from a critical lack of capital and support for startups ready to scale (the "missing middle"). Public and private investment vehicles, including the Délégation Générale à l'Entreprenariat Rapide des Femmes et des Jeunes (DER/FJ) <sup>92</sup> and international partners, should pivot their focus. This involves creating larger, dedicated funds for seed and Series A rounds and supporting more intensive accelerator programs like the Meta-backed Llama Impact AI accelerator.<sup>93</sup> The goal is to help proven businesses grow, as this is where the majority of high-value, sustainable jobs are created, directly addressing the weakness in "Business Sophistication".<sup>4</sup>
- **Recommendation 4: Design and Implement a "Remote Diaspora" Engagement Strategy.** The significant salary arbitrage driving top talent to work remotely for foreign firms is a major threat to local companies. Instead of fighting this trend, Senegal should leverage it. A formal strategy should be developed to engage this "remote diaspora." This could include: (1) creating a dedicated network for these professionals; (2) offering tax incentives or co-investment funds for them to angel-invest in local startups; and (3) establishing mentorship programs where they can provide senior-level expertise to local founders. This would help repatriate capital and, more importantly, the critical senior-level experience that the local ecosystem currently lacks, turning a brain drain into a "brain circulation."

## 5.3. For Economic Policymakers (Ministries of Economy, Digital Economy)

- **Recommendation 5: Launch a National Applied Research Fund to Forge University-Industry Linkages.** To directly address the critical weakness in R&D identified by the GII and GKI <sup>4</sup>, a dedicated National Applied Research Fund should be established. This fund's sole purpose would be to co-finance R&D

projects that are jointly proposed and executed by a university research team and a private sector company. This would ensure that research is directed at solving real-world commercial problems. The fund should also provide grants to establish and staff professional Technology Transfer Offices (TTOs) within UCAD, EPT, and AIMS, tasked with identifying, protecting, and licensing university-generated intellectual property for commercialization.

- **Recommendation 6: Develop a Real-Time Platinum Economy Labor Market Observatory.** The current data on the high-skill labor market is fragmented, lagging, and often lacks crucial details like salary benchmarks. The government, through the Agence Nationale de la Statistique et de la Démographie (ANSD) <sup>94</sup> and in partnership with job portals (e.g., Emploisenegal.com), tech hubs, and professional associations, should create a dedicated Labor Market Observatory for the Platinum Economy. This observatory would use API integrations, automated scraping, and regular, targeted surveys of companies and professionals to provide a real-time dashboard on:

- Skills in highest demand.
- Emerging job roles.
- Current salary benchmarks (local and remote).
- Hiring trends by sector and region.

This would equip policymakers with the agile, evidence-based intelligence needed to fine-tune educational curricula, workforce development programs, and investment strategies in near real-time, ensuring that Senegal's national strategy remains aligned with the dynamic reality of its most promising economic sector.

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# Senegal's Yellow Economy: A Comprehensive Workforce and Employment Opportunity Analysis

## Part I: The Strategic Context of Public and Social Sector Employment

The employment landscape of Senegal's public and social sectors, collectively termed the "Yellow Economy," is not a random collection of jobs but a structured market shaped by deliberate national policy. Three foundational pillars—the Plan Sénégal Émergent (PSE), the National Social Protection Strategy (SNPS), and the ongoing decentralization reforms—act as powerful catalysts, creating sustained demand for a diverse and evolving workforce. Understanding these strategic drivers is essential to mapping the opportunities and skill requirements that define this critical segment of the nation's economy.

### 1.1 The Plan Sénégal Émergent (PSE) as a Workforce Demand Catalyst

The Plan Sénégal Émergent is the central framework for the country's economic and social policy through 2035 and serves as the primary engine for workforce demand in the public and para-public sectors.<sup>1</sup> Its three strategic axes translate directly into specific categories of employment, creating a predictable pipeline for professionals with skills aligned with national development goals.

501. **Axis 1: Structural Transformation of the Economy:** The PSE's emphasis on developing infrastructure, agribusiness, mining, tourism, and special economic zones like the Dakar Integrated Special Economic Zone (DISEZ) generates direct employment for professionals in urban planning, project management, and public-private partnership (PPP) coordination.<sup>1</sup> This creates a need for a public sector workforce capable of regulatory oversight, industrial policy implementation, and managing complex, large-scale projects.<sup>5</sup>

502. **Axis 2: Human Capital, Social Protection, and Sustainable Development:**

This axis forms the bedrock of the Yellow Economy. By mandating significant public investment in education, health, and social protection, it creates a direct and sustained demand for roles in public health administration, education coordination, and social program management.<sup>1</sup> The International Monetary Fund (IMF) has underscored the importance of strengthening social safety nets as a prerequisite for the PSE's success, reinforcing the long-term, structural nature of employment in this area.<sup>2</sup> This policy focus is the source of jobs in social protection, from high-level program design to field-level implementation.<sup>3</sup>

503. **Axis 3: Governance, Institutions, Peace, and Security:** This axis drives the demand for professionals skilled in public administration reform, justice, transparency, and anti-corruption measures.<sup>2</sup> The emergence of job titles such as "*Chargé de projet – Protection des lanceurs d'alerte*" (Project Officer - Whistleblower Protection) within non-governmental organizations (NGOs) is a direct manifestation of this policy priority being implemented through civil society partners.<sup>3</sup> This also fuels recruitment into the justice sector through institutions like the Centre de Formation Judiciaire (CFJ).<sup>8</sup>

The project-based nature of the PSE's implementation creates a discernible and cyclical pattern of workforce demand. The lifecycle of a typical PSE initiative begins with a need for **policy analysts, procurement specialists, and strategic planners** during the design and launch phases. As projects move into implementation, demand shifts towards **project managers, community outreach officers, and technical field staff**. Finally, during the concluding phases, a wave of hiring occurs for **monitoring and evaluation (M&E) experts, data analysts, and auditors** to assess impact and ensure accountability, a process heavily emphasized by government and donor partners.<sup>2</sup> This predictable sequence offers a strategic advantage to training institutions and job seekers who can anticipate future skill demands based on the national project pipeline.

## 1.2 The National Social Protection Strategy (SNPS) and its Employment Implications

Senegal's National Social Protection Strategy (SNPS) is a specialized and significant driver of employment within the Yellow Economy, mandating a workforce with a

unique blend of social, administrative, and, increasingly, digital competencies. The strategy's flagship programs, the *Programme National de Bourses de Sécurité Familiale (PNBSF)*—a national cash transfer system—and the *Couverture Maladie Universelle (CMU)* for universal health coverage, are major employers.<sup>11</sup>

These initiatives create a clear demand for specific roles. For instance, World Vision has recruited for a "*Superviseur Régional Cash for Education*" to manage cash-based interventions in regions like Kolda and Sédhiou, a role that directly supports the PNBSF's objectives.<sup>3</sup> The institutional framework for these positions is provided by the Ministry of Health and Social Action and its

*Direction Générale de l'Action Sociale (DGAS)*, which includes directorates for Medico-Social Action, Vulnerable Groups, and Persons with Disabilities.<sup>12</sup> International partners are also deeply involved; UNICEF, for example, has sought consultants to conduct high-level analysis of local government spending on social protection, indicating a need for advanced policy and financial skills.<sup>6</sup>

A critical consequence of the SNPS is its role in accelerating the digitalization of the public sector. The immense challenge of managing large-scale beneficiary databases for the PNBSF and CMU, which aim to cover vast segments of the population including the informal sector, necessitates robust and interoperable digital platforms.<sup>11</sup> This aligns with IMF recommendations for "interoperable management information systems" and central M&E for social safety nets.<sup>2</sup> The government's broader "Smart Senegal" and e-governance initiatives provide the technological backbone for this transformation.<sup>13</sup> Consequently, traditional social work is evolving. A modern Social Protection Officer is not only a field agent but also a manager of digital beneficiary data. This evolution is creating a new sub-field of "Digital Social Protection," generating demand for new roles such as

**Digital Social Protection Platform Manager and Data Management Specialist for Social Programs.**

### **1.3 Decentralization and Territorial Development**

The "Acte III" decentralization policy is fundamentally reshaping the geography of public sector employment in Senegal. It actively shifts roles, responsibilities, and

resources from the capital, Dakar, to the country's 14 regions and numerous municipalities, thereby creating significant demand for localized governance and development expertise. The *Ministère de la gouvernance locale du développement et de l'aménagement du territoire (MGLDAT)* is the primary institution overseeing this transformation.<sup>14</sup>

The MGLDAT's mandate to support local authorities and integrate national priorities into *Plans de Développement Communaux* (Municipal Development Plans) directly creates jobs at the sub-national level.<sup>14</sup> This is evident in job postings that explicitly target multiple regions. For example, a single vacancy for a

"*Spécialiste en Développement Communautaire*" listed opportunities across all of Senegal's administrative regions, from Dakar to Kédougou and Ziguinchor.<sup>15</sup> Similarly, project supervisor roles are often based in specific regions, such as Kolda or Matam.<sup>3</sup> National programs like the

*Programme national de Développement local (PNDL)* and the *Programme d'Appui aux Communes et aux Agglomérations du Sénégal (PACASen)* further institutionalize this demand for a decentralized workforce.<sup>14</sup>

This shift towards local implementation necessitates a "dual-skill" competency profile for many Yellow Economy professionals. Beyond core technical expertise in areas like M&E or program management, successful candidates must possess strong soft skills in community engagement, participatory facilitation, and cross-cultural communication. Job descriptions for regional roles consistently emphasize the ability to "animate and guide the community" (*animer et d'amener la communauté*) and "strengthen the capacities of local partners" (*former et renforcer les capacités des partenaires*).<sup>15</sup> This requirement is echoed in postings from international organizations, which call for communication styles adapted to diverse audiences.<sup>16</sup> A policy expert effective in a Dakar-based ministry may therefore lack the requisite facilitation skills to succeed in a regional or municipal role, a critical consideration for both recruitment and professional development programs.

## **Part II: The Institutional and Employment Landscape**

The Yellow Economy is not a monolithic job market but a complex ecosystem

composed of distinct employer types and a wide spectrum of employment arrangements. Navigating this landscape requires understanding the unique recruitment cultures, funding cycles, and career pathways associated with public, private, and non-profit actors.

## 2.1 The Employer Ecosystem: Public, Private, and Non-Profit Actors

The institutional landscape of Senegal's Yellow Economy is diverse, spanning central government ministries, autonomous public agencies, and a vibrant national and international non-profit sector.

504. **Central Government:** Ministries such as the Ministry of Public Service, the Ministry of Health and Social Action, and the Ministry of Local Governance are the primary employers of permanent civil servants.<sup>12</sup> Recruitment for these roles is highly structured, managed through competitive examinations (*concours*) for entry into elite training institutions like the *École Nationale d'Administration (ENA)* and the *Centre de Formation Judiciaire (CFJ)*, with applications centralized on the official portal, [emploi-fpublique.sec.gouv.sn](http://emploi-fpublique.sec.gouv.sn).<sup>18</sup>
505. **Public Agencies:** A growing number of semi-autonomous public agencies operate with their own recruitment processes. These include *Sénégal Numérique S.A.* (formerly ADIE), the engine of the state's digital transformation, and the *Agence Nationale de la Statistique et de la Démographie (ANSD)*, which seeks specialized technical skills in data and statistics.<sup>13</sup>
506. **International and Local NGOs:** This sector is a major source of employment, particularly for project-based roles. Leading international NGOs (INGOs) such as **Oxfam**, **Save the Children**, **Plan International**, and **Humanité & Inclusion** are constantly recruiting for development and humanitarian aid programs.<sup>23</sup> They are complemented by a dynamic local civil society, including organizations like the *Association pour une Dynamique de Progrès Economique et Social (ADPES)* and federations like the *Fédération des Organisations Non Gouvernementales du Sénégal (FONGS)*, which provide crucial grassroots employment opportunities.<sup>27</sup>
507. **UN System and Development Partners:** United Nations agencies, including **UNDP**, **UNICEF**, **WFP**, and **UNFPA**, are significant employers of national and international staff, consultants, and interns, with operations centered in Dakar but covering the entire country.<sup>6</sup> Bilateral and multilateral partners like the

*Agence Française de Développement (AFD)* and the **African Development Bank (AfDB)** primarily fund projects implemented by others but also hire local experts and program staff directly.<sup>32</sup>

**Table 1: Directory of Key Yellow Economy Employers and Recruitment Channels**

Employer Category	Specific Employer Name	Primary Recruitment Portal / Method
<b>Central Government</b>	Ministry of Public Service & Transformation	emploi-fpublique.sec.gouv.sn <sup>18</sup>
	École Nationale d'Administration (ENA)	concoursena.sec.gouv.sn / Direct announcements <sup>19</sup>
	Centre de Formation Judiciaire (CFJ)	www.cfj.sn / Direct announcements <sup>9</sup>
<b>Public Agencies</b>	Sénégal Numérique S.A. (formerly ADIE)	www.adie.sn/carriere/emploi <sup>22</sup>
	Agence Nationale de la Statistique (ANSD)	recrute.ansd.sn <sup>21</sup>
<b>UN Agencies</b>	UNDP, UNICEF, UNFPA, WFP, FAO	UNjobs.org, UNTalent.org, ReliefWeb.int, Agency Websites <sup>6</sup>
<b>International NGOs</b>	Oxfam, Save the Children, Plan Int'l, Tdh	ReliefWeb.int, Impactpool.org, DevelopmentAid.org, Direct Websites <sup>23</sup>
<b>National Job Boards</b>	(Aggregates Public, NGO, and Private roles)	EmploiDakar.com, Emploisenegal.com, Optioncarriere.sn <sup>3</sup>
<b>Youth Employment</b>	Agence Nationale pour la Promotion de l'Emploi des Jeunes (ANPEJ)	anpej.sn <sup>40</sup>



## 2.2 A Typology of Employment Arrangements

Employment in the Yellow Economy extends far beyond traditional permanent positions, encompassing a full spectrum of work structures that offer varying levels of stability, compensation, and career progression.

- 508. **Permanent Civil Service:** These are career-for-life positions within government ministries, offering the highest level of job security. Entry is typically gained through the competitive *concours* system.<sup>7</sup>
- 509. **Fixed-Term Contracts (CDD - *Contrat à Durée Déterminée*):** This is the predominant employment model within the NGO and development sector. Job postings consistently specify CDD contracts with durations tied directly to project funding cycles, as seen in roles for community development specialists and communications assistants.<sup>15</sup>
- 510. **Indefinite Contracts (CDI - *Contrat à Durée Indéterminée*):** While less common in the project-driven development world, permanent contracts are offered for core operational, managerial, and administrative roles within established NGOs and some private sector entities contributing to social goals.<sup>39</sup>
- 511. **Consultancy:** This is a major pathway for senior-level experts providing specialized technical assistance. UN agencies, NGOs, and government bodies regularly hire consultants for short-term assignments like program evaluations or policy studies.<sup>6</sup> Compensation is often structured as a daily rate, which can be substantial for highly specialized expertise.<sup>43</sup>
- 512. **Internships (Stages):** Internships are a critical entry point for young graduates. Opportunities are facilitated by the national youth employment agency, **ANPEJ**, and offered directly by government bodies, such as the Museum of Black Civilizations, and international organizations like GIZ and the International Organization for Migration (IOM).<sup>40</sup>
- 513. **Volunteer Pathways (*Bénévolat/Volontariat*):** Structured volunteer opportunities are provided by a range of organizations, including **France Volontaires**, the Canadian organization **SUCO**, and the **U.S. Peace Corps**. These roles focus on technical assistance, community development, and cultural exchange, offering valuable field experience.<sup>46</sup>
- 514. **Freelance:** A flexible and growing segment, particularly for task-based work. Platforms like Upwork and AfricaShore demonstrate a market for freelance social workers, researchers, and digital communication specialists, though the market for high-level policy freelancing is less formalized.<sup>49</sup>

The prevalence of short-term, project-based contracts has cultivated a "portfolio career" model for a significant portion of the development workforce. Professionals in this space often move from one project-funded contract to another, across different organizations, rather than progressing up a single institutional ladder. This reality means that job security is tied to the project lifecycle, not the employer. Consequently, a successful development professional in Senegal must be adept at networking, proposal writing, and building a personal brand to ensure a continuous pipeline of work. This dynamic fosters a highly flexible labor market but also introduces a degree of precarity compared to the stability of the traditional civil service.

### Part III: Sub-Sector Workforce Analysis

This section provides a granular examination of the nine key functional areas within Senegal's Yellow Economy, detailing the specific roles, employer types, and competency requirements that characterize each sub-sector.

#### 3.1 Government Administration and Civil Service

- 515. **Roles:** *Administrateur Civil* (Civil Administrator), *Gestionnaire* (Manager/Administrator), Budget Manager, Procurement Coordinator, Human Resources Officer, Regional/Municipal Administrator.
- 516. **Employers:** The Ministry of Public Service and Transformation is the central administrative body, alongside sector-specific ministries (Health, Local Governance) and decentralized regional and municipal governments.<sup>12</sup>
- 517. **Skills & Pathways:** Core competencies include public finance management, administrative law, human resources procedures, and a deep understanding of the *Code des Marchés Publics* (Public Procurement Code). The primary entry pathway is through competitive examinations (*concours*) for elite institutions like the **École Nationale d'Administration (ENA)**, which trains senior officials (Cycle A and B), and the **Centre de Formation Judiciaire (CFJ)**, which prepares judicial staff and specialized inspectors.<sup>9</sup> Recruitment notices and processes are centralized on the government's public service portal.<sup>18</sup>

518. **Geography:** Senior policy and administrative leadership roles are heavily concentrated in Dakar. Service delivery and administrative support functions are increasingly decentralized to regional capitals and municipalities.

### 3.2 Public Policy and Research Functions

519. **Roles:** Policy Analyst, Research Officer, Economic Policy Coordinator, Social Policy Specialist, Public Sector Strategy Consultant.
520. **Employers:** This sub-sector includes ministry planning units, public research institutes like the *Agence Nationale de la Statistique et de la Démographie (ANSD)*, international research bodies like the International Food Policy Research Institute (IFPRI), and a growing number of private consulting firms (e.g., Deloitte, IFE Consult, JGM International) that serve public sector clients.<sup>21</sup>
521. **Skills & Pathways:** Demand is high for individuals with advanced degrees (Master's, PhD) and skills in quantitative and qualitative analysis, economic modeling, policy evaluation, and high-level report writing.<sup>31</sup> The pathway can be direct employment or, very commonly, through consultancy. Firms like Deloitte actively recruit for roles like "*Consultant Confirmé Stratégie Secteur Public*" to advise on governance, agriculture, and other key policy areas.<sup>53</sup>
522. **Geography:** These roles are overwhelmingly concentrated in Dakar, the center of government and international organizations.

### 3.3 Social Protection and Welfare Programming

- **Roles:** Social Protection Program Coordinator, Cash Transfer Supervisor, Beneficiary Systems Manager, *Travailleur Médico-Social* (Medico-Social Worker), Social Protection Inspector.
- **Employers:** Key employers include the *Délégation Générale à la Protection Sociale et à la Solidarité Nationale (DGPSN)*, the Ministry of Health and Social Action, and numerous NGOs like World Vision that implement social safety net programs on the ground.<sup>3</sup> UNICEF is also a key partner and recruiter in this space.<sup>6</sup>

- **Skills & Pathways:** Required skills include program management, community outreach, and case management. Increasingly, digital literacy for managing beneficiary databases is essential. Pathways include civil service roles, such as the *Inspecteur de l'éducation surveillée et de la protection sociale* recruited via the CFJ, and project-based positions within NGOs.<sup>3</sup>
- **Geography:** While policy design is Dakar-based, program implementation is by nature decentralized. Roles like regional supervisors are located in administrative centers across the country, including Kaffrine, Kolda, Matam, and Sédhiou.<sup>3</sup>

### 3.4 Development Sector and NGO Management

- **Roles:** Program Manager, Project Coordinator, Grants and Partnership Officer, Country Director, Business Development Associate.
- **Employers:** This is a vast ecosystem dominated by international NGOs (Oxfam, Save the Children, Plan International, Terre des hommes) and UN Agencies (UNDP, WFP, FAO).<sup>23</sup>
- **Skills & Pathways:** Expertise in Project Cycle Management (PCM), donor compliance (e.g., World Bank, EU, UNICEF procedures), grant writing, and financial oversight are paramount. Fluency in both French and English is often a mandatory requirement. Careers progress through fixed-term contracts advertised on specialized international job boards like ReliefWeb, UNjobs, and DevelopmentAid.<sup>6</sup>
- **Geography:** Management and coordination hubs are located in Dakar, but program activities necessitate a significant staff presence in all 14 regions of Senegal.

### 3.5 Community Development and Outreach

- **Roles:** *Spécialiste en Développement Communautaire*, Outreach Specialist, Local Development Facilitator, Field Agent.
- **Employers:** Local and international NGOs, government decentralization programs (PNDL, PACASen), and any social program requiring a grassroots presence are the main employers.<sup>14</sup>

- **Skills & Pathways:** Essential skills include participatory planning methods, community mobilization, facilitation, and conflict resolution. Fluency in local languages (e.g., Wolof, Pulaar, Seereer) is a significant asset and often a requirement.<sup>15</sup> These are often entry-to-mid-level roles, with volunteer pathways via organizations like SUCO and France Volontaires serving as a key entry point.<sup>46</sup>
- **Geography:** By definition, these roles are located outside the capital, in regional towns and rural communities across the country.<sup>15</sup>

### 3.6 Monitoring, Evaluation, and Data Analysis

- **Roles:** Monitoring and Evaluation (M&E) Coordinator/Officer, Program Evaluation Specialist, Data Analyst, Survey Coordinator, Research Associate.
- **Employers:** Demand for M&E skills is cross-cutting. Employers include government agencies (ANSD), nearly all international and local NGOs (World Vision, IMPACT Initiatives), UN agencies (UN Women maintains a roster of evaluation consultants), and research organizations.<sup>3</sup>
- **Skills & Pathways:** This is an increasingly specialized and in-demand career track. Technical skills include M&E framework design (logical frameworks, theory of change), data analysis using statistical software (SPSS, Stata), data collection using mobile tools (KoboToolbox, ODK), and data visualization (Tableau, PowerBI). Internships, such as those offered by GIZ, provide a clear pathway into the field.<sup>3</sup>
- **Geography:** A mix of Dakar-based positions for strategic analysis and tool design, and regional/field-based roles for data collection management and quality assurance.

### 3.7 Communications and Advocacy

- **Roles:** Communications Officer, Advocacy Coordinator, Public Communications Manager, Social Media Manager.
- **Employers:** NGOs with advocacy mandates (e.g., Secours Islamique France, Marie Stopes), government ministries for public awareness campaigns, and UN agencies are the primary recruiters.<sup>41</sup>

- **Skills & Pathways:** Core competencies include strategic communication, content creation (press releases, reports, videos), media relations, social media management, and advocacy campaign design. A single role often combines both communications and advocacy functions, such as the "*Assistant (e) Communication et Plaidoyer*" position.<sup>41</sup>
- **Geography:** These roles are predominantly based in Dakar to ensure proximity to national media outlets and key policy-making institutions.

### 3.8 Urban Planning and Local Governance Support

- **Roles:** *Urbaniste* (Urban Planner), GIS Specialist, Planning Assistant, Local Governance Support Officer.
- **Employers:** The Ministry of Urbanism, Housing, and Public Hygiene, along with municipal governments, are the main public sector employers.<sup>13</sup> Development agencies like AFD also support urban development projects.<sup>33</sup>
- **Skills & Pathways:** Technical skills in spatial analysis using GIS software (QGIS, ArcGIS), urban development planning, and knowledge of land tenure law are critical. A direct talent pipeline is being created by institutions like the *Université Amadou-Mahtar-Mbow (UAM)*, which offers specialized degrees in Urbanism, Architecture, and Sustainable Territorial Planning.<sup>56</sup> The government has also undertaken large-scale recruitment for related roles, such as the hiring of 12,000 agents for public hygiene.<sup>13</sup>
- **Geography:** Positions exist at the national ministry level in Dakar and within the technical service departments of municipalities throughout Senegal.

### 3.9 Emerging Digital and Innovation Roles

- **Roles:** E-governance Platform Coordinator, Digital Innovation Manager, Data Management Specialist, Civic Tech Coordinator, Data/Business Intelligence Analyst.
- **Employers:** *Sénégal Numérique S.A.* is the flagship public agency driving this agenda and a key employer for roles like "Data Analyst" and "Business Intelligence Analyst".<sup>13</sup> Other ministries are also recruiting for positions like

"Social media et Web strategist".<sup>22</sup> Initiatives like the government's "Gov'athon du service public" signal a broader push for innovation within the civil service.<sup>7</sup>

- **Skills & Pathways:** These are new roles often filled by individuals with backgrounds in computer science, IT, and digital marketing. Required skills include digital platform management, data analysis and visualization, Agile project management, and user experience (UX) design.
- **Geography:** Employment opportunities are heavily concentrated in Dakar and the emerging technology hub of Diamniadio.

**Table 2: Core Competency Matrix by Yellow Economy Sub-Sector**

Sub-Sector	Technical Skills	Digital Skills	Soft Skills
<b>Gov't Administration</b>	Public Finance, Administrative Law, Procurement	Office Suite, E-government portals	Process Management, Hierarchy Navigation
<b>Public Policy</b>	Policy Analysis, Economic Modeling, Benchmarking	Statistical Software (Stata, R), Office Suite	Critical Thinking, Synthesis, Report Writing
<b>Social Protection</b>	Case Management, Eligibility Assessment, Social Work	Beneficiary Databases, Mobile Data Entry	Empathy, Communication, Community Outreach
<b>NGO Management</b>	Project Cycle Management, Grant Writing, Donor Reporting	MS Project, Financial Software, M&E Platforms	Leadership, Negotiation, Partnership Building
<b>Community Dev.</b>	Participatory Planning, Capacity Building	Basic Mobile Tools, Social Media	Facilitation, Cross-Cultural Communication, Mediation
<b>M&amp;E / Data Analysis</b>	Impact Assessment, Survey Design, Logframes	KoboToolbox, ODK, SPSS, PowerBI, Tableau	Analytical Rigor, Attention to Detail, Objectivity
<b>Communications</b>	Strategic Comms, Media Relations,	Social Media Mgt, Adobe Suite, CMS	Persuasion, Public Speaking, Networking



	Content Creation		
<b>Urban Planning</b>	Spatial Analysis, Land Use Law, Infrastructure Design	GIS (QGIS, ArcGIS), AutoCAD	Public Consultation, Stakeholder Engagement
<b>Digital Governance</b>	Platform Management, Agile Methods, UX Design	Cloud Platforms, BI Tools, Database Mgt (SQL)	Problem Solving, Innovation, Adaptability

## Part IV: Professional Development and Workforce Capacity

This section assesses the supply side of the labor market, examining Senegal's educational infrastructure and professional networks to determine their alignment with the evolving demands of the Yellow Economy.

### 4.1 The Educational and Training Ecosystem

Senegal possesses a mature and diverse educational landscape for public and social sector careers. However, a gap persists between traditional academic offerings and the practical, digitally-focused, and project-oriented skills demanded by the modern marketplace.

- Elite Public Institutions:** The *École Nationale d'Administration (ENA)* remains the premier training ground for the senior civil service, offering programs in public administration and management.<sup>19</sup> For social work, the *École Nationale des Travailleurs Sociaux Spécialisés (ENTSS)* is the key national institution.<sup>57</sup>
- Public Universities:** The *Université Cheikh Anta Diop (UCAD)* in Dakar is a central player, with its Faculty of Law and Political Science (FSJP) offering Master's degrees in Public Administration and specialized courses in local public finance and territorial planning.<sup>58</sup> UCAD also hosts numerous professional schools relevant to the Yellow Economy, such as the *École nationale de Développement sanitaire et social (ENDSS)* and the *École Supérieure d'Economie Appliquée (ESEA)*.<sup>59</sup>



- **Private Universities and Schools:** The private sector has been agile in responding to market needs. **Groupe ISM** offers a comprehensive suite of relevant programs, including a Licence and Master in Public Administration and an MBA in Project Management, directly targeting the skills required by the development sector.<sup>5</sup>  
**Supdeco** also provides a Licence in Public Administration.<sup>62</sup>
- **Vocational and Certification Programs:** Recognizing the demand for specific, verifiable skills, institutions like **Groupe ISM** and **ESTM** offer professional certifications in Project Management (PMP, CAPM) and agile methodologies (Scrum), which are highly valued by NGO and international employers.<sup>63</sup>

**Table 3: Leading Training Institutions and Relevant Public/Social Sector Programs**

Institution Name	Type	Relevant Degree / Certification	Key Skills Taught	Target Career Path
<b>École Nationale d'Administration (ENA)</b>	Elite Public School	Cycle A/B Diplomas	Public Admin, Management, Public Finance	Senior Civil Service, Government Administration <sup>19</sup>
<b>Université Cheikh Anta Diop (UCAD-FSJP)</b>	Public University	Master in Public Administration	Public Law, Local Finance, Territorial Mgt.	Public Policy, Local Governance <sup>58</sup>
<b>École Nationale des Trav. Sociaux (ENTSS)</b>	Public Professional School	State Diploma in Social Work (DEAS)	Social Work, Case Management, Medico-social	Social Worker, Social Protection Officer <sup>57</sup>
<b>Groupe ISM</b>	Private University	MBA Management de Projets	Project Mgt. (PMBOK), Risk, M&E, Procurement	NGO Program Manager, Project Coordinator <sup>61</sup>
<b>Groupe ISM</b>	Private University	Master in Public Governance	Policy Analysis, E-governance, PPP Mgt.	Policy Advisor, Public Sector Consultant <sup>60</sup>
<b>Université</b>	Public University	Licence/Master	Urban Planning,	Urban Planner,

<b>Amadou-Mahtar-Mbow (UAM)</b>		in Urbanism	GIS, Sustainable Dev.	Municipal Technical Staff <sup>56</sup>
<b>ESTM / Groupe ISM</b>	Private Prof. Training	PMP / CAPM / Scrum Certifications	Project Planning, Agile Methods, Risk Mgt.	Project Manager (all sectors) <sup>63</sup>

## 4.2 The Role of Professional Networks and Associations

Professional associations within Senegal's social and development sectors serve as important hubs for identity, advocacy, and knowledge sharing. However, their role in formal job placement appears secondary to the dominance of online recruitment platforms.

- **Social Work:** The *Federation Senegalaise Des Travailleurs Sociaux (FSTS)* is the official national body, affiliated with the International Federation of Social Workers (IFSW) and representing over 500 professionals and multiple associations.<sup>65</sup> Historical networks like the *Réseau national des travailleurs sociaux (R.N.T.S.)* also exist to promote the profession's recognition.<sup>57</sup>
- **Development and NGOs:** The landscape includes federations of grassroots organizations, such as the *Fédération des Organisations Non Gouvernementales du Sénégal (FONGS)*, which play a critical role in coordinating implementation at the community level.<sup>28</sup> There are also numerous professional development associations like *ADPES* that support specific socio-economic sectors.<sup>27</sup>

Despite the vitality of these networks for collaboration and advocacy, there is a clear disconnect between their activities and the modern, digitally-driven job market. The overwhelming majority of vacancies analyzed for this report were found on digital job boards (e.g., EmploiDakar, ReliefWeb) and official institutional portals, not through association bulletins or networks.<sup>3</sup> This suggests that while professional associations are essential for building community and advancing sectoral interests, their function in the labor market matching process is limited. For job seekers, this means an

effective job search strategy must prioritize a strong online presence and active monitoring of digital recruitment platforms over-relying on traditional association networks.

## **Part V: Strategic Synthesis and Forward-Looking Recommendations**

The analysis of Senegal's Yellow Economy reveals a dynamic and rapidly evolving employment landscape. It is a market defined by the convergence of public policy priorities and the operational demands of a modern development sector. Key trends, skill gaps, and geographic disparities emerge, pointing toward a clear set of strategic actions required to build a workforce capable of meeting the nation's development ambitions.

### **5.1 Synthesis of Key Findings: Skill Gaps, Geographic Disparities, and Emerging Trends**

- 523. **The Rise of the Hybrid Professional:** The most sought-after professional in today's Yellow Economy is a hybrid, blending traditional knowledge of public administration with modern competencies in project management, digital literacy, and data analysis. A purely administrative or purely activist profile is no longer sufficient.
- 524. **The Digital Imperative:** Digitalization is not a peripheral IT function but a core, cross-cutting requirement. It is fundamentally transforming roles in social protection (beneficiary management), public administration (e-governance), and M&E (mobile data collection and visualization). A significant skill gap exists for professionals who can bridge the gap between social policy and digital platform management.
- 525. **The M&E Revolution:** The demand for skills in Monitoring, Evaluation, Accountability, and Learning (MEAL) is one of the most significant trends. Driven by donor reporting requirements and a government-wide push for results-based management, M&E is now a distinct and highly valued career path, with acute demand for specialists proficient in modern data tools.
- 526. **The Dakar-Region Divide:** A stark geographic disparity persists. High-level

policy, research, and digital innovation roles are concentrated in Dakar. In contrast, decentralized implementation roles in the regions demand a different skill set centered on community engagement, facilitation, and local language proficiency. This creates two parallel, and not always interchangeable, career tracks.

527. **A Fragmented but Transparent Market:** While the employment market is fragmented across numerous government, UN, and NGO channels, it is also highly transparent. A consolidated set of online platforms—including official government portals and international development job boards—provides comprehensive access to the vast majority of available opportunities.

## 5.2 Strategic Recommendations for National Workforce Planning

To align Senegal's human capital with the demands of the Yellow Economy, a concerted effort is needed from government, educational institutions, and development partners.

### For Government (Ministry of Public Service, ANPEJ):

528. **Modernize Civil Service Training:** The curricula of the ENA and other civil service training centers must be updated to include mandatory, practical modules on Project Cycle Management, Digital Governance, and Data Analysis for Public Policy. This will bridge the skills gap between traditional administrators and the project-oriented development sector.
529. **Create a Unified "Yellow Economy" Jobs Portal:** The government should expand the [emploi-fpublique.sec.gouv.sn](http://emploi-fpublique.sec.gouv.sn) portal or partner with a leading national platform like [EmploiDakar.com](http://EmploiDakar.com) to create a single, comprehensive national portal. This platform should aggregate vacancies from government, public agencies, and key NGO and UN partners to improve labor market efficiency and transparency for all stakeholders.

### For Educational Institutions (UCAD, ISM, UAM, etc.):

530. **Develop Specialized, Market-Aligned Master's Programs:** Universities should launch or expand specialized graduate programs in high-demand fields such as "Digital Governance and Public Policy" and "Monitoring and Evaluation for Development." These programs must incorporate practical training on the

specific software and methodologies used in the field (e.g., KoboToolbox, PowerBI, QGIS).

531. **Mandate and Structure Internships:** Formal partnerships should be established between universities and key Yellow Economy employers (ministries, agencies, NGOs). All students in public administration, social work, and development studies programs should be required to complete structured, supervised internships that provide meaningful, practical experience and create a clearer school-to-work transition.

#### **For Development Partners (World Bank, AFD, UNDP, etc.):**

532. **Invest in "Hybrid Skill" Capacity Building:** Funding should be directed towards targeted training programs that equip existing civil servants and NGO staff with the "hybrid" skills in highest demand. This includes workshops on digital platform management for social protection officers, advanced data analysis for M&E staff, and grant management for public sector officials involved in donor-funded projects.
533. **Promote Regional Talent Hubs:** To counter the heavy concentration of talent in Dakar, development partners should support the establishment of professional training centers and networking events in regional capitals like Saint-Louis, Ziguinchor, Kaolack, and Tambacounda. This would build local capacity, improve the effectiveness of decentralized programs, and create more equitable economic opportunities across the country.

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