AGRICULTURE, WOMEN AND YOUTH IN AFRICA IN THE COVID-19 ERA

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**Introduction and Background****: Definitions, scope, and organization of the Report**

The report focuses on the place of the youth and women in Africa’s agricultural sector. Africa is a diverse continent and an attempt to paint a uniform and undifferentiated picture of the agricultural sector is unrealistic. To come close to a realistic analysis, we restrict the report to Sub-Saharan Africa (SSA) given that the geography of North Africa, dominated by the Sahara Desert offers a different agricultural context compared to the SSA. While the definition of women is straightforward, the youth refer to the population of men and women aged between [18 and 35 years](https://iasl-online.org/resources/Documents/Harlan1-12.pdf). We define agriculture to include all activities that involve directly raising crops and livestock, for direct consumption or for sale or for both. The term “farmer” refers all men and women engaged in agriculture on a full time or part time basis. Finally, smallholder agriculture refers to the agricultural activity conducted on less than [two hectares of land](https://www.sciencedirect.com/science/article/pii/S0378429011001225?casa_token=EFWV-mcEWkcAAAAA:XAj0GqIK_xS-5U9HQMHjYBsT56HGwh-gLcmMvBRN31xxgbC6d9Kecem5_Q9BI3FR9Fa0IFNW5fYe).

The report proceeds as follows. In the first chapter, the four sections examine the challenges facing agriculture in Africa at a general level. Next, the chapter addresses the place of women and the youth in agriculture and how to address the challenges to harness this demographic group. The last section concludes and outlines the layout of the remaining two chapters of the report.

Chapter 1: Agriculture in Africa: An overview

While Africa has over 200,000 acres of idle [arable land](https://www.economist.com/middle-east-and-africa/2018/04/28/africa-has-plenty-of-land-why-is-it-so-hard-to-make-a-living-from-it), the continent remains a net food importer. Agriculture is the largest employer and a major economic sector in most African countries. However, productivity remains low coupled with huge post-harvest losses, price uncertainty occasioned by disjointed markets, lack of capital, geographical barriers to food distribution, and critically, the threat of climate change. With a population expected to hit [2 billion by 2050](https://www.un.org/en/sections/issues-depth/population/index.html), most of it youthful, Africa has to realize her potential in agriculture to feed the additional people. As the table below shows, Africa, more than any other region of the world, is in the greatest need for feeding its youthful population, failure of which could lead to food related turbulence.

Table 1: Median Age by Region in 2020, source, Authors’ construction from the data from UNDP

|  |  |
| --- | --- |
| Region | Median Age (years) |
| Africa | 19.68 |
| Asia | 32.04 |
| Europe | 42.54 |
| Latin America and the Caribbean | 30.96 |
| Northern America | 38.61 |
| Oceania | 33.35 |

To feed its meteorically rising population, the continent must overcome several challenges among them scale, use of technology, market failures, land tenure system, capital, climate change, and, central to this report, the involvement of women and the youth. As COVID-19 has illustrated, countries can face a shortage of critical supplies, including food, in times of crisis. For instance, Vietnam, a chief exporter of rice to Africa halted exports at the height of the pandemic in [March 2020](https://www.reuters.com/article/health-coronavirus-vietnam-rice-idUSL4N2BI2MT) putting millions relying on this staple food in a precarious situation. COVID-19 restrictions also led to supply chain bottlenecks that affected movement of imported food from the ports to the hinterland and, internally, from farms to markets within and between African countries.[[1]](#footnote-2) The ensuing economic lockdowns pushed many urban dwellers into smallholder farming for [survival](https://www.economist.com/middle-east-and-africa/2020/04/23/the-race-to-feed-africa-during-a-pandemic).

To effectively respond to the linked issues of agriculture and food security in Africa, we need to start by examining the state of agriculture on the continent considering the challenges. This approach would serve as a foundation for a discussions, analyses, and proposals on the involvement of women and youth in Agriculture in the COVID-19 era. Our thesis is that for Africa to feed the ballooning population, the involvement of women and the youth is vital. The pertinent issue is the identification and resolution of the barriers that result in the low levels of participation in Agriculture among these two groups. As a case in point, the [World Bank](https://www.worldbank.org/en/programs/africa-myths-and-facts) report titled *Agriculture in Africa: Telling Facts* *from Myths* shows that women contribute 40% of labor to agriculture in spite of being about 50% of the population. The youth, on the other hand, face hurdles acquiring land and capital to pursue farming which exacerbates attitude problems towards Agriculture as a [viable career option](https://d1wqtxts1xzle7.cloudfront.net/45744858/Attitudes_of_Rural_youth-agriculture-ARaouf-Hassan_and_Baig.pdf?1463580177=&response-content-disposition=inline%3B+filename%3DAttitudes_of_rural_youth_towards_agricul.pdf&Expires=1614584436&Signature=XO9qhxzLHje-6YFgKHn99cJEcAHWa5JA-MMQotpsK1-yjhoMSlylwgWLFVUohCIZOjgUQhGf6cTZQwhFaWecWTxN0VYZpvmO6q51tyWnxlHUADhvUiLnbrycQbrT8aU4E~5bleU2ybw-wSKze3yX~TEIXtkWAc79bGshf-CTrF56yFmkgciAJo7B9qEbR9cgIjdqcRLVXXQGKJjQ4fCYMJBCncCyz9rFopzRfMTD4Jr5V03pkbV-jq1WehOCD516zlXUXt8wvvd5hPPtm6Q3yiBRvl2a17W9OdsfhAyubs-DcaGDWxfKgY773-wv0miXGk9zcyHbuKqthu4TCirhtA__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA). It is important to grasp the fact that Africa is diverse and that the manifestation and applicability issues and recommendations put forth in this chapter could vary depending on the context. For instance, while South Africa has low levels of participation of youth and women in agriculture, the nature of farming is predominantly large scale and commercial unlike the rest of the continent.

**Scale**

Researchers estimate that there are approximately 570 million family farms worldwide, the majority being small-scale and operated by family members. In spite of the fact that Africa is land-[abundant](https://www.sciencedirect.com/science/article/pii/S0306919214000888), most of the arable idle land is located in a few countries, notably, the Democratic Republic of Congo, South Sudan, and the Sudan. Except for South Africa, the rest of the continent is dominated by smallholder farming, defined as farming practices on less than 2 hectares of land. A study by the High-Level Panel of Experts on Food Security (HLPE) estimates that 73% of farms in Africa are less than one hectare, while 85% are less than 2 hectares, accounting for 25% of the agricultural land. By contrast, 50% of farms in Europe are less than two hectares and form 25% of the agricultural [land].[[2]](#footnote-3) Still, researchers expect the average size of land in Africa to decline in [most land scarce countries](https://www.sciencedirect.com/science/article/abs/pii/S2211912413000254) until an expansion in non-farm economic activity absorbs the majority of the job market entrants. Surprisingly, even as small farms get smaller, the larger farms are increasing in size as financially endowed professionals acquire land in rural areas. However the increase in size of the already large farms is not enough to offset the decline in the average size of farms. Also, elites owning the larger size of farms do not take agriculture seriously and even where they do, opt for biofuels, timber, flowers, and other [non-food crops](https://www.economist.com/middle-east-and-africa/2018/04/28/africa-has-plenty-of-land-why-is-it-so-hard-to-make-a-living-from-it).

As is the case globally, smallholder farming in Africa presents many challenges and promising opportunities all at once. Let us start with the opportunities. A survey by the World Bank established that larger farms in Africa received inputs less intensively relative to small farms. The finding implies that there is an opportunity for intensifying small farms as is happening already with maize. Given that majority of Africans eke a living, directly or indirectly out of smallholder agriculture, even a modest increase in farm productivity promises huge gains in raising incomes and, hence reducing poverty. Many countries in Asia and Africa initially neglected agriculture in favour of industrialization after independence. However, several countries in Asia were quick to rethink their stance. The ensuing support to smallholder farmers led to the green revolution in Asia that created the bedrock of prospering economies in the following decades.[[3]](#footnote-4) On the contrary, Africa has not been as supportive of smallholder farming. The result has been low productivity and apathy from farmers, leading to stagnation and even a decline in rural incomes. For example, some coffee farmers in Kenya have opted to [uproot their coffee bushes](https://www.youtube.com/watch?v=8yyPIEM-IH8) owing to the low prices of coffee beans in the market, a situation blamed on mismanagement and the numerous middlemen between farmers and buyers. The policy failures in Africa are a vital starting point, starting with the examination of the political economy of [agricultural policy in Africa](https://www.sciencedirect.com/science/article/pii/S0305750X10000975?casa_token=UrbBhG1DnAEAAAAA:_8MwrB124-9qL0X1bX2-Y__BzdoJqKj3eu179OC-1rlsSav4L-Dv-CNQXFwNuNr7KUJlXrpR-stn). The Asian experience shows that smallholders can do better with appropriate policy support.

The challenges of smallholder farming stem from diseconomies of scale. The World Bank reports that among smallholder farmers in Africa, two thirds report not using inorganic fertilizer. Use of organic fertilizer varies from a high of 77% in Malawi to a low of 41% in Nigeria. For smallholder farmers, owning machinery such as a tractor would be costly, and many opt for shared schemes. A dismal 3% of smallholder farms adopt irrigation. With smallholder farms, it is difficult to negotiate favourable prices with buyers, turning many smallholder farmers to price takers. Lack of adequate collateral limits capital acquisition. Hence, smallholders in Africa have not adopted modern farming techniques as a rational choice coupled with lack of alternatives and low awareness. Researchers, project that for the next decades, as Africa’s population rises amid a low industrial base, capital per farm worker will drop simultaneously with the shrinkage of average land size, limiting the use of land-intensive, labour-saving techniques and modern equipment. Again, declining farming area has sparked clashes between sedentary crop farmers and pastoralists in places like [Northern Nigeria](https://core.ac.uk/download/pdf/234681356.pdf). Market failures, especially that arising from information asymmetry, leads to constrained markets for farm produce. As a result, some researchers hold the view that smallholder farmers cannot “farm their way out of poverty” due to the low scale of operations unless they supplement farm income with alternative sources.[[4]](#footnote-5) If returns to agriculture do not improve, it follows that women and youth would not be attracted to farming and, instead, a scramble for the few opportunities in the services and industrial sectors. In the sections that follow, we examine each of these constrains.

Table 2: Trends in Average Farm Sizes in Africa (1960-2000)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country | y1960 | y1970 | y1980 | y1990 | y2000 | Direction |
| Cape Verde |  |  | 1.4651 | 1.2855 | 0.9967 | decrease |
| Central African Republic | 1.947 | 1.734 | 0.8964 |  |  | decrease |
| Congo | - | 1.371 | 0.9893 |  |  | decrease |
| Cote d’Ivoire | - | 5.009 |  | - | 3.8935 | decrease |
| Democratic Republic of the Congo |  | 2.324 | - | 0.5330 |  | decrease |
| Ethiopia |  |  | 1.4304 | 0.7996 | 1.0268 | decrease |
| Guinea Bissau | 3.020 | - | - | 1.443 | - | decrease |
| Kenya | 11.744 | 4.125 | 2.5171 | - | - | decrease |
| Lesotho | 2.191 | 1.987 | - | 1.4435 | - | decrease |
| Madagascar | 1.040 | - | 1.3241 | - | 0.8580 | decrease |
| Malawi | - | 1.538 | 1.1729 | 0.7476 | - | decrease |
| Mali | 4.355 | - | 3.2718 | - | - | decrease |
| Réunion |  | 1.975 | 3.5614 | 4.4186 | 4.6544 | increase |
| Senegal | 3.630 | - | - | - | 4.2964 | increase |
| Sierra Leone |  | 1.819 | 1.6305 | - | - | decrease |
| Swaziland |  | 19.473 | 11.7899 | - | - | decrease |
| Tanzania |  | 1.266 |  | 2.7797 | 2.4475 | increase |
| Togo |  | 2.626 | 1.414 | 1.5457 | 1.9606 | neither |
| Uganda | 3.293 | - | - | 2.1606 | - | decrease |

Source: Authors’ construction from the data available at [https://www.sciencedirect.com/science/article/pii/S0305750X15002703#m0005](https://www.sciencedirect.com/science/article/pii/S0305750X15002703" \l "m0005)

The above table only captures snapshots of country-level agricultural census data conducted under FAO guidelines. Notably, many countries in Africa have not done agricultural census for years meaning that policy work is essentially based on guesswork. Zimbabwe, for instance, last did an agricultural census in 1960 even as the country has gone through turbulent policy-cum-political action is to be responsible for its conversion from a food secure nation to one faced with food shortages.

## Market failures

Market failures occur when individuals acting in their self-interest lead to outcomes that are detrimental to the whole group or society. When markets fail, the price mechanism does not adequately account for all the costs and benefits necessary to provide and consume a product or service. As a result, there is an inefficient distribution of goods and services in the [free market](https://ideas.repec.org/a/prg/jnleam/v2010y2010i2id97.html). Market failures are especially common in Africa’s agriculture. For instance, when farmers flood the market with a given product, each farmer is acting to further their individual goal of sourcing income. On the downside, too many goods lead to inadequate demand, low prices, and spoilt goods. In pastoral communities in Africa where land is communal, uncontrolled numbers of livestock lead to land degradation and ultimately inadequate pasture and water for the herds. In agriculture, the market failures may also manifest in market factors where subdivision of land makes it not viable to do farming due [to scale](https://www.harper-adams.ac.uk/events/ifsa/papers/5/5.4 Minarelli.pdf).

A chief source of market failure in agriculture is information asymmetry. While farmers struggle with excess produce in local markets, consumers in another part of the country or globe could be suffering from a shortage of the commodity. But neither the farmer nor the consumer is aware of this due to communication failures. The solutions to market failures are a mix of state interventions and market solutions, especially using information technology. The idea is to use technology to link farmers to potential customers thereby expanding the geographical scope of the market. State interventions include policies and institutions that promote economic inclusion and [market access](https://www.emerald.com/insight/content/doi/10.1108/AFR-08-2018-0062/full/html).

## Technology

Technology connotes all the knowledge available for production. For smallholder farmers in Africa, the scale of operations, lack of capital and low awareness hinders the access and use of technology. Although Africa has seen increases in crop yields over time, most of it came from expansion of land under cultivation. As noted, the expansion of land is no longer feasible. An increase in yields per unit area under cultivation is possible by the adoption of modern technologies. Already, researchers have documented the vital technological inputs for agriculture revolution. Examples include the adoption of better seed varieties, and the development and uptake of new agronomic techniques that fit [smallholder farming](http://www.fao.org/e-agriculture/news/how-technology-can-cure-market-failures-agriculture-information-age-economist-special-report). However, a critical issue is that the low scale of operations makes it uneconomical to employ technologies like mechanization. Lack of awareness is also a barrier to use of technology. Despite this, there are some semi-automation techniques that can help improve productivity.

Agricultural extension is another vital input for creating awareness among farmers. In coffee producing regions of Africa, for instance, a simple practice like properly pruning coffee plants allows for improved quality of coffee berries during harvest, yet most farmers do not do pruning due to ignorance. To many coffee farmers it seems counter-intuitive that fewer branches on coffee bushes could more berries. Extension is especially important given that adoption of technology by smallholder farmers is hampered by not just a shortage of critical technologies like better seed varieties but also due to limited access to information and negative perception about the new [seed varieties](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Impact+of+modern+agricultural+technologies+on+smallholder+welfare%3A+Evidencefrom+Tanzania+and+Ethiopia&btnG=). As noted, technology can also help mitigate market failure. 2KUZE, an online platform developed by Mastercard Foundation through funding from the Bill and Melinda Gates foundation links farmers to prospective customers in rural Kenya. Typically, farmers will post their products on the platform where customers across the country bid, with payments done electronically.

However, information technology also adds another layer of know how that farmers could harness to address critical off farm agricultural impediments like market failure and information as addressed earlier. Scholars opine that digital technologies hold the highest potential for creating employment for young people, promoting economic activity, and hence improving food security. Platforms like Esoko, Farmerline, and Trotro Tractor have given farmers services like market information and extension services through [voice messages, SMS, and multimedia](http://www.fao.org/e-agriculture/blog/how-digital-technologies-can-help-africa’s-smallholder-farmers). Technology’s place in Agriculture spans beyond improving productivity. Lending technologies are helping smallholder farmers access much needed credit. Mobile phone lenders afford farmers a line of credit, a major hindrance to agricultural intensification. Although its adequacy and terms of the lending are subject to heated debate, they certainly do fill a significant gap as we discuss in the section on capital.

## Land Ownership

Gendered land ownerships system in Africa favours men, arising out of their traditional role as heads of the family units. In pastoral communities, much of the land is communal, leading to unsustainable overgrazing and conflict over pasture and water. The land question directly emanates from a lingering issue of the ease of doing business in Africa, institutional quality and property rights. For [women](https://journals.sagepub.com/doi/full/10.1177/2277976016658738?casa_token=ME8A0IllyVEAAAAA%3ArcNi_khUpK3SU-PCt3OshpnR4b_m4G0dkieOcAzPRPihxDqfmxc19zaiR9lZiViLl1c86C1DvinjEm4) and the youth, the skewed land ownership also has implications on the capacity to raise capital as land is an attractive form of collateral for financial institutions. Beyond ownership, little of the land in Africa has formal documentation, making it hard to establish proof of ownership and hence limiting long term planning. Research shows that land tenure security is essential for pro-poor land use that would ultimately ensure national [food security](http://www.mekonglandforum.org/node/2428).

Rwanda offers an example that it is possible to have almost universal land tenure regularization. In 2012/13, the country undertook and completed a countrywide land tenure regularisation, issuing documentation to many smallholder [farmers](https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-7705). The process has shown promising results with nd US$ 2.6 billion worth of mortgages secured against land and property. Also, the program enhanced land access for legally married women - about 76% of married couples- allowing better recording of inheritance rights without gender bias. Moreover, the program had positive impact on investment and maintenance of [soil conservation measures](https://www.sciencedirect.com/science/article/pii/S0304387813001818). Some researchers posit that secure land tenure rights correlate positively with farm productivity, although evidence is still mixed. Still, many subsequent land inheritance and sales in Rwanda have remained informal, threatening to reverse the gains made in the country. In other African countries, the process of land regularisation is still at its infancy if it exists at all.

## Capital

Like other micro, small, and medium enterprises, access to capital is a significant obstacle to the intensification of smallholder farming. A 2018 study on smallholder farming in Ethiopia and Tanzania found that capital, more than any other factor, contributed to farmers’ willingness and capacity to adopt modern technologies. Yet, smallholder farmers often operate informally, lack collateral and credit history, and suffer from financial exclusion[[5]](#footnote-6) altogether. Estimates by the Food and Agricultural Organization (FAO) show that less than 10% of smallholder farmers access adequate financing even for high value cash crops like tea and coffee. Less than 1% of commercial bank credit goes into agriculture and less than 4.7% of adults in rural areas in developing countries have a loan from a formal financial institution.

There is a plethora of challenges in the link between agriculture and capital in Africa. For women and the youth, the lack of access to capital has implications on all aspects of agriculture including access to land, markets, and technology uptake. Even where smallholder farmers have access to financial services, their cash flows may be insufficient to qualify them for credit products. Uptake of agricultural insurance has also been low due to lack of information and capital. Experiments with state owned banks after independence had disastrous outcomes due to mismanagement and lending based on political connections. Mainstream commercial banks keep off agricultural lending due to uncertainty of income streams, even where they can apply relationship lending. Modern lending technologies are bridging the financing gap though there are some accusations of predatory lending practices. Farmers’ cooperatives also hold a better promise with better regulations and state support. Several governments have had explicit arrangements with commercial banks to lend to the youth and women, especially those engaged in the agricultural sector. Microfinance institutions (MFIs) in Africa offer some potential solution to the financing problem despite concerns of unsustainable [debt burdens and vulnerability of borrowers](https://www.tandfonline.com/doi/full/10.1080/03066150.2018.1460597?casa_token=jwdl_4q8_hIAAAAA%3AOh-5PcJnopN92QFOe4uGFkBE5CKFrmxE3gMhqCKiD2ApWyCSrPIfcv69pXQz8iX49E3X6sECJasLXFIpCw). However, the scale of financing required to finance agriculture adequately is beyond what many MFIs can afford. There is need for continued state support to microfinance to extend scale of lending and absorb potential loan write-offs.

## Climate Change

Climate change presents a pressing challenge for the world and Africa in particular. Although Africa contributes about 2% of greenhouse gases, scientists predict that the continent will suffer disproportionately from the outcomes of [climate change](https://www.economist.com/special-report/2020/03/26/african-countries-must-get-smarter-with-their-agriculture). The expected effects include unreliable rainfall patterns as has been witnessed in parts of eastern Africa. The Southern Africa region has had temperature rise at a rate twice the global average. In the Sahel, increased desertification will push more people into food insecurity. The rise in temperatures will lead to a spread of human, livestock and human diseases like Malaria to areas currently not affected. Climate change will ultimately exacerbate the challenges facing agriculture outlined earlier.

What are some of the effects of climate change on smallholder farming in Africa? (Source: Cohn, et al. (2017 in the references)

* When smallholder systems suffer climate impacts to production this may trigger a cascade of problems including poverty, hunger, civil conflict, migration, and a disproportionately high amount of lost work.
* Smallholders cope with a changing climate in ways that are distinct from other farmers. Environmental and social outcomes depend on how these coping strategies evolve underboth development and climate change.
* Smallholders present greenhouse gas emissions paradox. They emit a small amount of carbon dioxide (CO2) per capita and are poor, making Green House Gases (GHG) regulation unwarranted. At the same time, they produce relatively GHG-intensive food and emit disproportionate quantities of black carbon using traditional biomass.
* Targeting smallholders may be important for many climate mitigation and adaptation policies. Doing so effectively will depend on innovative solutions to the transaction costs that enrolling smallholders often impose.
* Substantial progress has been made in understanding risks that climate change poses to smallholders, and opportunities to limit the problem; however, a great deal of uncertainty remains concerning most of the dimensions.

Many national government and global bodies like the World Bank have anticipated the effects of climate change and set up mechanisms to tackle them. However, many of the anticipated benefits are yet to reach smallholder farmers, likely because the programs are still in their infant stages. The World Bank, for example, has the Climate Investment Funds “[to accelerate climate action by empowering transformations in clean technology, energy access, climate resilience, and sustainable forests in developing and middle-income countries](https://www.climateinvestmentfunds.org/).” Research shows that the ability to cope with climate change is proportionate to the size of landholding, making climate change adaptation and smallholder farming even more difficult to reconcile in [Africa’s setting](https://www.sciencedirect.com/science/article/pii/S2211601X16000584).

## Responding to the Challenges of Youth and Women in Agriculture

Africa has a young population, with a median age of 19 years, while women form over 50% of the population. However, these two groups face hurdles in meaningfully participating in agriculture. The meaningful participation of youth and women in agriculture should sensibly start by addressing the barriers discussed in the earlier sections. We highlight some of the potential solutions in the sections that follow.

The trends in the average size of land in Africa mean that there is little that could be done to expand scale in the short and medium term. One possible strategy is to use [cooperatives](https://www.nepad.org/nepadspanishfund/good-practice/cooperatives-development) to aggregate farmers to do value addition and marketing of agricultural produce. However, cooperatives face a governance challenge as [collective organizations with limited managerial capital](https://medium.com/@Spore_Magazine_54746/spotlight-on-africa-professional-management-for-agricultural-cooperatives-bf3b472904a7). There are some pockets of successful cooperatives though, like [Al Fouarate in Morocco and Githunguri Dairy Farmers Cooperative in Kenya](http://www.fao.org/3/i6672e/i6672e.pdf). Technology could be useful in curing market failures, and the youth are especially more receptive of information technology (IT) that they could harness in this respect. However, the scale of operations in many farms in Africa is such that most of the available technology cannot apply. For instance, while large scale tea farmers can mechanize tea picking, it is not cost effective to do so for small farms, unless through a cooperative. Recommendations have been made that to attract the youth and women into farming in Africa, the three must be technology suitable for smallholder farming beyond the outdated hand tools. The push starts with the creation of sustainable mechanization strategies that point to policies and strategies involving the private sector to avail usable and affordable farm technologies.

Regarding land, decentralized service provisions for land registration and information campaigns help reduce but not to eliminate the extent of informality in land dealings. States must implement strategies to test the efficacy of different approaches to ensure full registration, scale up promising ones, and rigorously monitor the effect of doing so is described. An important aspect is the digitization of land and land transfer systems which allows expeditious and low-cost transfer of land. As a case in point, a low-cost approach to land registration and certification of restricted property rights that was implemented in Ethiopia from the late 1990s led to enhanced land rental market participation of (potential) tenant and landlord households and especially participation of [female-headed landlord households](https://scholar.googleusercontent.com/scholar.bib?q=info:ea7abEPAOScJ:scholar.google.com/&output=citation&scisdr=CgVFhLxREP_0sscvtVw:AAGBfm0AAAAAYEYprVyO7HPdiCXbVY0vkFYwlQP-r1Zb&scisig=AAGBfm0AAAAAYEYprZpMcFkhqkq25f3UO8cjD53urJ2O&scisf=4&ct=citation&cd=-1&hl=en). The youth would also benefit from such an approach.

Access to capital presents a challenge that countries have tackled using the concept of microfinance and digital lending to supplement youth and women focused state funds. The main challenge in Africa was that many people neither accessed nor used financial services leave alone apply for a loan facility, mainly due to cost and lack of funds. The advent of mobile money allows more people, especially in rural areas to save and borrow. However, the size and duration of loans may not be adequate to finance farming. Climate change calls for education and awareness-creation on coping mechanisms. In addition, research and development of resilient seeds, technology and farming systems will allow farmers to adapt to the changing temperatures and rainfall patterns.

**Chapter 2**

**Enhancing Youth and Women Entrepreneurship in Africa’s Agriculture**

**Value Chains, Market Failure & Technology in Agriculture**

**Background**

In the previous chapter, we examined the hurdles facing Africa’s agriculture ranging from the small scale of operations to climate change. In this chapter, we pick out two areas that are of prime importance for women and youth: addressing market failure, and focusing on supply chains. Whilst all the factors hampering youth and women involvement in agriculture need to be resolved, these two areas are critical for at least three reasons. First, an assumption can be made that youth and women are already involved in agricultural production even though the conditions under which they operate are not conducive, and the levels of productivity are low. Accessing markets is therefore important as a starting point. Secondly, even though factors such as capital and technology are crucial for investment in smallholder agriculture, it may be argued that women and youth can start with the little they have in these respects and scale up with time. Market access would put money in their pockets, somewhat beginning the journey towards more elaborate final outlays. The third point is that market failure and broken supply chains constitute a demotivation for women and youth. Any indication that markets are available for agricultural produce for entrepreneurial women and youth in agriculture would serve as a pull factor especially in the face of the high levels of unemployment on the continent.

In the short to medium term, land ownership structure will remain in favour of men for historical reasons. As noted, the youth are more receptive of information technology than their seniors. The youth’s capacity to develop and exploit technology gives them a twin advantage; they can either develop technology to sell or can innovate technology for use in their agricultural ventures. The agricultural value chain in Africa can be long and winding. Due to low scale, farmers are not able to negotiate with large customers. Instead, the produce goes through numerous middlemen with farmers on the losing end. Also, technology can be of use with local value addition initiatives over and above the communal sale of produce via cooperatives. Lastly, technology would allow farmers to better cope with climate change. Both these initiatives would gain a lot from state policy and infrastructure support.

**Youth and Women Entrepreneurs in the Value Chain**

Development of agriculture in Africa will allow the continent to overcome at least three challenges: unemployment, food insecurity, and by extension, civil conflict. One way is to invest in the [agricultural value chain](http://chede.org/chede/wp-content/uploads/2014/04/Agricultural-Value-Chains-in-SSA.pdf) and to facilitate women and youth to participate. Given the challenges of shrinking land size and climate change, opportunities exist up the value chain, most visibly the processing of agricultural produce and the production of inputs like fertilizers and chemicals. Many researchers have vouched for value addition to mitigate volatile prices of primary commodities even outside agriculture. For instance, Côte d’Ivoire and Ghana are well known Cocoa producers, accounting for 63% of global output worth US$ 5.75 [Billion](https://www.econstor.eu/bitstream/10419/184687/1/1039833039.pdf). However, the two countries account for 6% of global chocolate market worth US$ 100 Billion, with the chocolate production mantle belonging to the Swiss. Ethiopia and Kenya, leading coffee producers globally, have very low value addition processes. Liberia continues to export almost all its rubber and imports tires even though it is a leading rubber producer. This can be said of many more agricultural produces across the continent. If Africa’s agriculture could capture a small portion of the value difference between raw materials and primary products, it would massively benefit the economies and the farmers. To allow for value addition, three issues require fixing: domestic policy regarding the export of raw materials, technology for value addition and international trade politics.

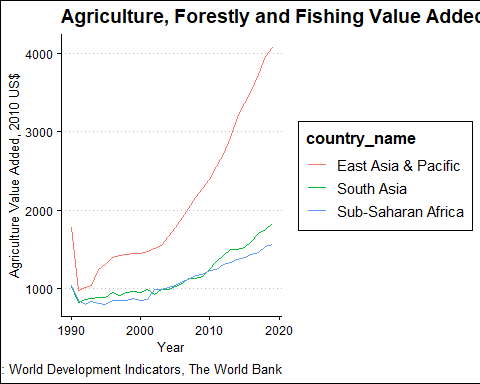
The domestic policy towards the need for value addition is already getting the attention of the political class in Africa. In a speech in 2017, [Nana Akufo-Addo](https://foodtank.com/news/2018/08/ghanaian-chocolate-revolution/), Ghana’s president stated the following.

“… the trend cannot and should not continue. It is time to enter different kinds of commercial interests, to see more processing and value-enhancing aspects of the development of the cocoa industry in Ghana….”

Initially, most of the processing happened where the consumers were, in Europe and America. However, with a rising middle class in Africa with a taste for produce such as coffee, chocolates and many more, Africa should harness its youthful population to process primary products and take advantage of the population dividend. With a population projected to hit 2 billion by 2050, this budding market ought to be taken seriously. In some places, this is beginning to take shape. Rwanda, for instance, has embarked on local assembly of VW vehicles instead of importing them whole, shifting some of the value chain locally. The idea of tax breaks for completely knocked down vehicle parts implemented in Rwanda could work for agriculture too.

However, figure 1 below shows that Africa has really underperformed in terms of agricultural value addition. While East Asia and the Pacific show a meteoric rise in value addition, consistent with the green revolution in these regions, Africa’s levels remain the lowest, at par with war torn countries in South Asia like Afghanistan.

Figure 1: Agriculture Value-Added 1990-2019, Constant 2010 US$



Africa may have an abundance of natural resources, but it suffers from a reverse dependency technology. The tax incentives would allow for acquisition and adoption of foreign technology. It is with the growth in the scale of production that firms would have resources to invest in R&D. The producers could source other inputs into the value addition, like milk and sugar in the case of cocoa, but get some tax relief if they need to import extra quantities. Moreover, some export duty and tax holiday on value added products would motivate more value addition. With the major global markets dominated by brands from the developed world, Africa’s value addition focus should aim at meeting the demands of local, regional and niche [global markets](https://www.econstor.eu/bitstream/10419/184687/1/1039833039.pdf). The coming into force of the Africa Continental Free Trade Area agreement opens up the chance to take up regional markets. As noted in the first chapter, the policy failures, especially regarding smallholder agriculture and production have roots in political self-interests. While political elites swiftly negotiate favourable terms for their produce like flowers, there is less enthusiasm in passing legislation to develop smallholder agriculture. This partisanship is beyond the scope of the report.

In some countries, some of the policies are already yielding results out of participation of women and the youth. For instance, in Ghana, there is a budding industry for chocolates led by young, female entrepreneurs. One such venture is 57chocolates, started in 2016 by two sisters in Accra. Already, the company has found a substantial local market that it struggles to satisfy. Similarly, Ethiopia’s success in the leather industry is due, in part, to favourable policies towards foreign direct investment and the realization of the potential that lies in the massive youth labour pool. Another part of the value chain that is often neglected is the production of agricultural inputs. With increasing change in attitudes towards agriculture, big corporates like the Dangote group are stepping in to fill the gap and creating the much-needed jobs and availing agricultural inputs at affordable prices.

The development of Africa’s agricultural value chain is not only limited to local politics as international trade politics are at play too, especially the trade deals between Africa and the West. Some commentators argue that the trade deals that Africa and the West enter into compete with the agricultural ventures that smallholder farmers could profitably engage in, like poultry. Some have argued that international trade politics serve to preserve the agricultural interests of the elites in the developing world by trading them off with the legitimate interests of the poor. Researchers give a case where the elites enter deals to sustain exports of cut flowers into European markets and allow the heavily subsidized European farmers to import products that smallholder farmers in Africa produce.

Finally, the agricultural inputs value chain has three core shortcomings: low capacity among farmers, little government involvement especially in funding R&D and extension, and, consequently, low private sector involvement in availing latest farming technologies. The result is a loss of employment opportunities both in the weak value chain and the ensuing low productivity in the sector. It is worth noting that the strongest motivator for women and youth to engage in agriculture is to make the sector more lucrative. Value addition will go a long way in addressing much of the apathy. Also, the agricultural value chain, both upstream and downstream offers much promise for job creation. In the next section, we examine the opportunities for women and youth to address market failures in agriculture.

**Youth and Women Role in Addressing market Failure**

While market failure is a major challenge in smallholder agriculture, it presents huge potential for youth and women. Already, there are a substantial number of information technology start-ups that are addressing the challenge. It is worthwhile to examine some promising ventures. One of the challenges facing agriculture in Africa is market fragmentation where farmers cannot link up with consumers of their products unless through exploitative middlemen. Online platforms such as Esoko, Farmerline, and Trotro Tractor operating in Ghana provide farmers with accessible services. The services include voice messages and SMS extension advice which help farmers obtain information about how to access markets and [extension services](http://www.fao.org/e-agriculture/blog/how-digital-technologies-can-help-africa’s-smallholder-farmers).

Table 3: Sample tech farms in Africa

|  |  |  |
| --- | --- | --- |
| Fintech Company | Country | Service Offered |
| Olam | Ghana | One of the world’s biggest cocoa buyers are using mobile phones and text message to connect with farmers. Using smart phones, Olam has mapped farmers and geo-located them to connect them to the markets. |
| Wefarm | Kenya | Has established a social network for farmers and allows them to exchange information by text message’(economist) |
| PowerStove Energy | Nigeria | Delivers smokeless, IoT enabled cookstove that generates electricity |
| Acre Africa | Kenya | Offers insurance to farmers for their crops and animals. The interesting aspects about Acre Africa is that, if its automatic weather monitors in the field detect a drought, farmers receive a pay-out through their phones without submitting a claim. |
| Whispa Health | Nigeria | A mobile App that provides young people with non-judgemental access to sexual and reproductive health information |
| GrowAgric | Kenya | A crowd funding platform that connects farmers to much needed working capital |
| Bryt-Knowledge | Zimbabwe | A multifaceted online educational platform that connects students with subject matter experts using technology |
| Slide | Kenya | An e-commerce distribution channel that leverages the power of the community or group buying to provide goods to end customers more cheaply |
| Xetova | Kenya | A Technology solutions provider for the procurement ecosystem |
| Jirogasy | Madagascar | Which manufactures, assenbles and designs solar home systems and communication systems for solar |
| 2KUZE | Kenya | Links up thousands of farmers and traders in a virtual market place, using text messages on basic mobile phones |

Source: www.disrupt-africa.com

But information technology can also help improve farm productivity. () point out three potential areas; improving decision making in agriculture, improve farm management and farming technology, and the use of technology to improve productivity. Information technology could help improve farm decision making by facilitating practices like record keeping that tend to be missing in smallholder agriculture. Record keeping could allow farmers assess the viability of their farming activities, allowing for adjustments and better decision making.

Likewise, technology could allow farmers to access up to date weather information. What is notable, and relevant to this report is that over 70% of the subscribers of digitization for agriculture are between 18-35 years. However, () of CIO magazine notes that much of the IT initiatives are dominated by male youths, leaving more room for the involvement of women. Table 1 shows examples of technology-based ventures operational around Africa. The firms in the table target different sectors that directly or indirectly target agriculture from linking customers to markets to improved energy systems. The variety illustrates the wide range of opportunities for youth and women in the sector. The cross-cutting issues addressed in the next section will go a long way in improving the participation of women in IT.

**How Well Can Women and Youth Harness Technology**

Most of the existing farming technology developed in the west does not fit well with the smallholder farming prevalent in Africa. Women and youth could tap these opportunities and evidence suggests they already are. Illuminuim Greenhouses illustrates, a company based in Nairobi, Kenya’s capital illustrates the power of technology in improving the productivity of farms. Ordinarily, the construction of a modern greenhouse would be costly. In most cases, the existing greenhouse technology is not targeted at smallholder farmers. Illuminium has stepped in to fill this gap, as spelled out in their [mission statement](https://illuminumgreenhouses.com/).

We construct affordable modern greenhouses and install automated drip irrigation kits for smallholder farmers by using locally available materials and solar powered sensors.

[Grekkon Tehnologies](https://grekkon.com/) is also a notable entrant in affordable irrigation systems. Elsewhere on the continent, CTA’s “*Transforming Africa’s agriculture: Eyes in the sky, smart techs on the ground*” uses unmanned aerial vehicles to deliver services to farmers. The drones enable real time data gathering, processing and dissemination to enhance decision-making and so improve productivity and yields. Another notable venture is Ethiopia’s “80-28” hotline. The hotline offers advice to farmers advisory and currently has about 4 million users, the highest on the continent. It is a free service, whose success stems partly from the delivery of services in local languages. “80-28” model of aligning services to local circumstances encourages farmers to subscribe willingly. Mobile applications like RiceAdvice allow farmers to receive advice on modern farming technologies in Mali and Senegal. In Burkina Faso, digital entrepreneurs offer information services to farmers through *iDEAL BURKINA* project. These examples illustrate the ample opportunities that exist in the use of digital technology in availing services to farmers.

Beyond just creating opportunities for the tech-prenuers, the adoption of these technologies has improved the on-farm productivity. A program in Ghana dubbed “*Feed the Future Ghana Agriculture Technology Transfer Project*”. The project involved the private sector, government, and research institutes to enhance the productivity of smallholder farmers through dissemination and encouraging the adoption of modern farming technologies. The results were impressive. The agricultural output went up by over 250% for maize, soya beans, and rice. In addition, the increased use of inputs led to a US$ 7.8 million increase in sales of fertilizer, seeds, and chemicals. The spillovers included 124 new public-private partnerships formed, $5.9 million in grants to beneficiaries, stimulating additional private sector investments, and over $2.77 million leveraged in new private sector investment in agriculture.

The example from Ghana shows the potential that exists in the development and adoption of technologies for farming. While we mentioned quite a few, there are numerous other opportunities like in low-cost techniques for harvesting and storing rainwater for irrigation. In addition, women and youth could harness indigenous knowledge systems to developing post-harvest conservation technologies and value addition techniques. Capacity building on technology adoption also offers ample working opportunities for women and the youth.

**Cross-cutting Issues**

The bid to involve more youth and women require a relook of issues like basic infrastructure, land inheritance system, and policies supportive of agriculture, especially smallholder farming. These cross-cutting issues also offer opportunities for the youth and women. In Africa, many small farms are in remote geographical areas without basics like water, energy, roads and communication infrastructure. The United Nations (UN) Expert Group Meeting titled “*Financing Africa’s Infrastructure and Agricultural Development: Inclusive Growth for Economic Transformation*” notes that “can be no meaningful agricultural development without advancements in infrastructure”. The group lays out the bare minimums at the government level to support infrastructure growth in Africa; stop the bleeding due to illicit financial flows, cut back excessive tax incentives for foreign direct investment, and curb the hoarding of sovereign funds in foreign banks.

Among the critical infrastructural gaps in agriculture, especially afflicting women and the youth is access to finance. The financial infrastructure in Africa has not afforded the two groups access to credit, savings and insurance. Both the state and the private sector hold the key to developing infrastructure in Africa. However, many countries on the continent are yet to meet the 10% of GDP investment threshold set out in the Maputo declaration of 2003. As noted, the private sector role at improving access to finance is already visible with the mobile money revolution in Africa. However, researchers have raised concerns about the costs and duration of mobile loans which do not allow for [adequate utilization in agriculture](https://www.un.org/en/africa/osaa/pdf/events/2017/20171016/Report_of_EGM_Financing.pdf).

Infrastructure goes beyond finance. The Comprehensive Africa Agriculture Development Programme (CAADP) of NEPAD lays down the core of [infrastructure requirements](http://www.fao.org/3/y6831e/y6831e-02.htm).

* Pay immediate attention to management and use of water for agriculture so that the important task of food production is not at the mercy of fickle weather.
* To ensure competitiveness, invest in better infrastructure to facilitate access to rural areas and thereby reduce the costs of production, storage, and extraction of produce to markets. In parallel with this, they should pay attention to trade-related capacity building to enhance Africa’s market access.
* Apply at farm level modern productivity enhancing practices, using properly adapted approaches tested under the special programme for food security.
* Build readiness and response capacity to natural and man-made disasters which, if left unattended, can undermine, or reverse any gains in productivity that the other interventions can achieve; and
* Support research, development, promotion of adoption as an important long-term guarantor of productivity and therefore competitiveness.

Also, measures to reduce exploitation of farmers by middlemen and marketing agencies by managing the red tape and corruption that dominates these bodies. In Kenya’s tea sector, the Kenya Tea Development Authority (KTDA) has been at loggerheads with the government regarding legislation aimed at boosting income for smallholder farmers. example. Democratisation allows people to engage leaders and question the lack of political will to support smallholder agriculture. Lastly, provision of energy is key which, with the advent of affordable solar energy and mini grids, should reach smallholder farmers faster than the centralised power grids.

**Conclusion**

In this section, we examined the opportunities in agriculture that exist for women and the youth. First, the agricultural value chain offers a large opportunity in value addition of agricultural commodities instead of relying on the export of primary agricultural commodities. A few days ago, the president of Ghana has captured this well, announcing that Ghana would [no longer export raw Cocoa to Switzerland](https://www.youtube.com/watch?v=DbvocKxDtSc&t=382s).

“Ghana’s is, currently, Switzerland’s largest trading partner in Sub-Saharan Africa, largely from the export of Gold and Cocoa and the import of chemicals and pharmaceutical products as well as light machinery and military equipment from Switzerland. However, as I have stated on several occasions, Ghana no longer wants to be dependent on the production and export of raw materials, including cocoa beans. We intend to process more and more of our cocoa within our country with the aim of producing more chocolate ourselves because we believe that there can be no future prosperity for the Ghanaian people in the short medium, and long term if we continue to retain economic structures that are dependent on the production and export of raw materials” - Ghanaian president Nana Akufo-Addo in a Speech in Switzerland, March 10, 2021.

The speech by the Ghanaian president captures the spirit that will allow more Africans, mainly the youth and women to participate in and benefit from agriculture through value addition. Political will has been a significant stumbling block in the development of agriculture in Africa and the development of more democratic environments allows the citizens to question the policies passed by the political class.

Information technology is one of the promising areas for youth and women to tap into. Systems that link farmers and customers, FinTech applications that allow farmers to access credit, savings and insurance products are especially promising. These technologies could also aid at improving farm productivity by allowing farmers to access information regarding latest farming techniques and access to weather information. Beyond IT, on-farm technology like the development of affordable irrigation and greenhouse systems will create opportunities both from the demand and supply side.

For these opportunities to see light of day, there are infrastructure issues that the state must fix. These include roads, energy, communication, and financial infrastructure. Noting that most farms are inaccessible, the existence of a good road and rail network will allow products to easily reach consumers. The energy infrastructure in rural areas is especially vital with the advent of cheap solar panels and mini grids which also present business opportunities for women and the youth.

The infrastructure, together with sound policies in agriculture will allow for the increase in agricultural production and access to markets. The best way to attract youth and women in agriculture is to make the sector more lucrative which requires the involvement of both the private and public sector.

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1. See commentary by Njeru and Ayieko (2020) [↑](#footnote-ref-2)
2. Investing in smallholder agriculture for food security. A report by The High Level Panel of Experts on Food Security and Nutrition (Vol. 6). Rome: FAO [↑](#footnote-ref-3)
3. The early green revolution economies in Asia were India, Indonesia, and the Philippines. South Korea, Taiwan, China, Malaysia, and Thailand also later registered impressive results, see Birner and Resnick (2010) [↑](#footnote-ref-4)
4. See Gassner et al. (2019) and Masters et al. (2013) for analysis showing that smallholder farmers in Africa cannot escape farming through farming alone [↑](#footnote-ref-5)
5. By financial exclusion, we refer to a situation where individuals cannot access and use appropriate and affordable financial services like savings, credit, and insurance [↑](#footnote-ref-6)