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Youth Entrepreneurship in Agribusiness

Nigeria Country Report



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Acronyms and Abbreviations

ADP	Agricultural Development Program
AFCTA	African Free Trade Act
AGOA	African Growth and Opportunity Act
APP	Agricultural Promotion Policy
APPEALS	Agro Processing, Productivity Enhancement and Livelihood Improvement Support
ARMTI	Agricultural and Rural Management Training Institute
ATA	Agriculture Transformation Agenda
CBN	Central Bank of Nigeria
CEO	Chief Executive Officer
CORY	Creating Opportunities for Rural Youth
ECOWAS	Economic Community of Western Africa
FIIRO	Federal Institute of Industrial Research Oshodi
FMARD	Federal Ministry of Agriculture and Rural Development
GSM	Global System for Mobile Communications
ICT	Information and Communication Technologies
IFAD	International Fund for Agricultural Development
IGO	Intergovernmental Organization
IITA	International Institute of Tropical Agriculture
ILO	International Labor Organization
MBA	Master's in Business Administration
NACCIMA	Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture
NAIC	Nigerian Agricultural Insurance Corporation
NARS	National Agricultural Research System
NBS	National Baseline Youth Survey of Nigerian Youth Development Fund (NYDF)
NEET	Not in employment, education or training
NEPC	Nigerian Export Promotion Council
NGO	Non-governmental organization
NYENET	Nigeria Youth Entrepreneurship Network
NYP	National Youth Policy
NYSC	National Youth Service Corps
SDGs	Sustainable Development Goals
SME	Small and Medium-Sized Enterprises
UK	United Kingdom
UN	United Nations
US	United States of America
USAID	United States Agency for International Development
VAT	Value-Added Tax
WAAPP	West Africa Agricultural Productivity Program
YE	Youth entrepreneur/ Youth entrepreneurs
YEAP	Youth Employment Agricultural Programme
YEDP	Youth Entrepreneurship Development Programme
YISA	Youth Initiative for Sustainable Agriculture in Nigeria

Executive Summary

Promoting rural entrepreneurship is recognized as an effective way to increase youth engagement in economic activities and address rural unemployment. However, the ideal pre-conditions remain largely unresearched. All age-groups face certain recurring challenges associated with agriculture and agribusiness. These include access to technology, weather uncertainty, poor market linkages and price risks. For young people, these challenges are typically exacerbated by a lack of relevant skills and experience.

Addressing these challenges requires answers to some key questions: Which factors drive the success of youth entrepreneurs in developing countries? What type of business 'ecosystem' is best suited for their development? What roles should the various stakeholders play in making youth entrepreneurship flourish nationally? How can young people expand their start-ups to become small, medium or large-scale businesses?

This report forms part of an international multi-country comparative study. It identifies key drivers for the success of youth entrepreneurship in Nigeria and examines challenges that the country's youth face on their way to becoming successful entrepreneurs. The report starts with a review of literature on the status of rural youth entrepreneurship in Nigeria. Seven detailed case studies of rural and urban agribusiness youth entrepreneurs (YE) then highlight specific challenges and opportunities. The insights gathered help address key policy and programmatic gaps. They also enable us to offer recommendations for strengthening youth empowerment through entrepreneurial opportunities.

In Nigeria, the government, private sector, NGOs and donors all support entrepreneurship in agriculture (including livestock and fishery). Several policies and strategies already facilitate the promotion of youth employment and entrepreneurship. Policy documents identify youth entrepreneurship development as a key strategy for agriculture and rural transformation. However, systematic translation of these strategies into investment and coordinated action remains limited. Entrepreneurship programs lack a systematic approach, operate in isolation, remain project-driven, involve few stakeholders and are poorly linked to other elements of a business ecosystem. Interventions have so far concentrated on training youth for employment rather than helping entrepreneurs to create jobs.

Some of the YE selected for study have links to research and innovation systems and have been able to upgrade their businesses in line with sector standards. However, none of them are fully integrated into larger supportive environments or a multi-stakeholder initiative on youth entrepreneurship. They have businesses of differing sizes, established at different speeds. Education up to undergraduate level seems to help accelerate business establishment and ultimate success. Vocational training for technical and business skill development nonetheless remains a necessary first step towards youth entrepreneurship. Scaling up then requires mentorship, with suitable incentives for the mentors.

Several insights emerge from the case studies. Both rural and urban YE emphasize challenges in accessing credit; many had to rely on family and personal funds to start their ventures. Urban YE, in particular, remark on high interest rates from banks as well as difficulties in matching funding from regional institutional investors. Access to finance is clearly crucial for setting up and expanding businesses.

Rural YE receive negligible institutional support; few have access to youth associations or Chambers of Commerce. They have to invest time and resources in accessing markets and getting updated market information. Skills training is also deemed helpful in strengthening youth entrepreneurship. Several YE

highlight that training by government, NGOs and international donors has helped them develop technical, business and managerial skills. Others emphasize that an exclusive focus on training can be misplaced, particularly when it is always the same entrepreneurs who benefit.

Personal motivation and a strong entrepreneurial mindset also play a key role. YE motivations range from helping solve the unemployment crisis and improving demand-supply linkages to proving the local business case for a novel industry. All YE emphasize the importance of detailed market analysis to understand the demand dynamics for local foods. In addition, many YE value their role as mentors to young members of their community. To sensitize youth to the benefits of agribusiness and help those who are interested get on the path to agri-entrepreneurship, some YE provide training, support and counseling.

Initial support from personal networks is perceived as critical. To various extents, all YE mentioned the importance of encouragement from family members, partners and business alumni, particularly in the early stages. Such encouragement includes financial backing, mentoring and network access. For urban YE, multinationals running competitions and providing mentoring are an additional useful source. International support structures are often more helpful than local ones – including from government – particularly in the early stages. Access to networks and mentoring is critical. Urban YE see university alumni, networking with entrepreneurs and/or established businesses, as well as mentoring from abroad as key. Our interviewees also highlight positive and negative aspects of the regulatory environment, the former being more pronounced than the latter. Challenges referred to include the government's tendency to support primary agriculture rather than market systems. YE also mention poor policy implementation and an opaque taxation system. The main operational challenges are logistics bottlenecks, poor access to finance and costly intra-African trade.

Our interviews and literature review highlighted the range of challenges that remain at policy, institutional, technology, infrastructure and individual levels. They all affect YE success. To accomplish the twin aim of food system transformation and youth involvement, Nigeria needs to take several key steps. This study concludes with some recommendations for policy makers, multinationals and the donor community. They include continuing efforts to improve infrastructure and technology access, creating and upholding regulatory product quality standards, improving YE access to credit and insurance, monitoring and evaluating policies and programs, and providing access to adequate and affordable education and training.

1. Introduction

Rural transformation is vital for the structural change needed for economic development. Achieving Sustainable Development Goals (SDGs) such as eliminating hunger and malnutrition depends heavily on rural transformation. Rural youth employment and entrepreneurship are key potential drivers of the process. The rural economy in many developing countries is characterized by a set of common phenomena: the proportion of young people in the countryside is increasing, but few of them view agriculture as an attractive profession, and therefore the farming population is ageing. Revitalizing the rural economy in developing countries will require strong engagement and empowerment of rural youth in agriculture enterprises.

Global youth population is projected to grow by seven percent to 1.3 billion in the year 2030, the target year for achieving the SDGs (UN, 2019). The ability of countries to harness this 'youth bulge' depends critically on several factors, including the provision of productive employment (UN, 2019). Of today's 1.2 billion people aged 15-25, one billion live in developing countries, and half of those in rural areas. Unemployment is likely to be three times higher than for their adult counterparts. In sub-Saharan Africa, two-thirds of rural youth depend on agriculture for their livelihood (SFI Advisors, 2019). Empowering youth through promoting entrepreneurship is increasingly seen as an approach to inclusive economic development. Several recent global reports highlight the challenges and opportunities.

The International Labor Organization (ILO) reports that one-fifth of young people worldwide are currently 'NEET', i.e. not in employment, education or training. However, the ILO argues that these youth can benefit significantly from digital innovations by becoming early adopters, using acquired skills at the workplace and helping to realize their entrepreneurial aspirations. Several countries have recently focused on digital technology to promote youth entrepreneurship, promoting ICT innovations to facilitate market linkages, access to finance and acquisition of financial, entrepreneurial and digital literacy skills (ILO, 2020).

The United Nations' (UN) 2018 World Youth Report estimated 13 percent overall youth unemployment in the previous year. Key challenges facing youth include the high cost of education, job insecurity, low wages and limited chances for on-the-job learning. Many national governments have so far failed to establish coordinated youth policies and programs, for example to create adequate employment and entrepreneurial opportunities. However, the UN report shows that countries are increasingly promoting youth entrepreneurship, with a growing programmatic focus on appropriate education to address employment challenges. The report states that helping aspiring youth acquire education and training can equip them with the acumen needed to navigate the world of business creation and development. It also highlights that besides skills training, most successful YE receive support. This typically takes the form of start-up grants, links to financial service providers, incubation of start-ups, technology, infrastructure, mentoring and facilitating access to potential investors (UN, 2018).

Innovations such as information and communication technologies (ICT) provide new opportunities. According to USAID (2019), interventions that seek to empower youth to start their own businesses are increasingly becoming part of the youth-oriented development agenda across the globe. Rural youth are well-placed to benefit from such technical innovations, as they are more likely than adults to own mobile phones and adopt financial, training and extension services which use these digital platforms. Innovative technologies can connect farmers to markets, thereby reducing transaction costs, and raising food system efficiencies and inclusion (USAID, 2019).

Several approaches can help address the employment and entrepreneurship challenges facing rural youth in developing countries. They include increasing the demand for staff through structural changes, training young people for agricultural jobs, as service providers or in self-employment. Further pathways include developing value chains, farmer-based organizations and agribusiness incubators for high-value crops and livestock products, and training rural youth for business opportunities there. Multi-stakeholder development of entrepreneurship ecosystems that connect large numbers of rural youth to market and business opportunities also shows some promise (SFI Advisors, 2019). Several successful examples of such multi-stakeholder approaches in agricultural development have been documented elsewhere (Winter et al, 2017). While they need to be adapted, such initiatives have been applied as a collective action tool to address issues related to climate smart agriculture, agricultural planning, and in building resilience of the market chains (Winter et al, 2017).

Rural youth nonetheless continue to face several constraints when engaging in agricultural enterprises. One major hurdle is limited access to many ingredients of agricultural success: land, credit, inputs (e.g. machinery, irrigation or improved seeds), agronomic and vocational training, insurance and lucrative markets. Farming is also becoming more challenging due to climate change, degradation of natural resources, water scarcity and loss of biodiversity.

Engaging youth in agribusiness is often heralded as an effective strategy for rural transformation. However, there is still limited clarity as to which interventions work best and why. This gap in evidence and knowledge prompts a number of research questions:

- What are the drivers of successful rural youth empowerment through entrepreneurship?
- Which policies and programs can help address challenges of rural youth entrepreneurship?
- What are the best approaches to developing youth entrepreneurship in rural areas?
- How can which models best be deployed to meet rural youth needs?
- How can different actors be incentivized to engage in rural entrepreneurship?
- Who is best placed to ‘deliver’ youth entrepreneurship?
- How can one ensure good governance and alignment of interests and activities across multi-stakeholder initiatives?
- What roles should private and public organizations play in generating opportunities?

We are addressing these questions in a series of country reports involving rural and agribusiness YE. The present country report focuses on Nigeria. The following section explains our methodology and conceptual framework. Section 3 examines overall youth employment in Nigeria, with a specific focus on policy, institutional and regulatory, technical and individual factors in the agriculture sector. Section 4 presents and synthesizes the YE case studies, whose key findings lead to recommendations in Section 5. The final section provides concluding remarks.

2. Conceptual Framework and Methodology

Entrepreneur development has been studied for a long time, particularly the factors contributing to success or failure. A broad set of enabling factors that drive the success of entrepreneurship has been identified. Entrepreneurship is likely to be successful in ecosystem that includes enabling policies and regulations, adequate infrastructure and financing, access to and adoption of technologies and innovation, as well as skilled entrepreneurially minded people. Such an ecosystem is typically the result of work by numerous stakeholders. They include academia, industry, government and entrepreneurs themselves.

Even within this kind of ecosystem, the development of youth entrepreneurship in rural agriculture poses additional challenges. First, rural youth typically have limited knowledge and business skills, as well as little or no exposure to the business environment. Second, while youth in general face risks associated with markets and technologies, the rural setting poses further uncertainties in terms of weather, production and price risks. Such risks are exacerbated by limited infrastructure for rural communities. Rural youth thus typically face a higher chance of business failure than urban entrepreneurs.

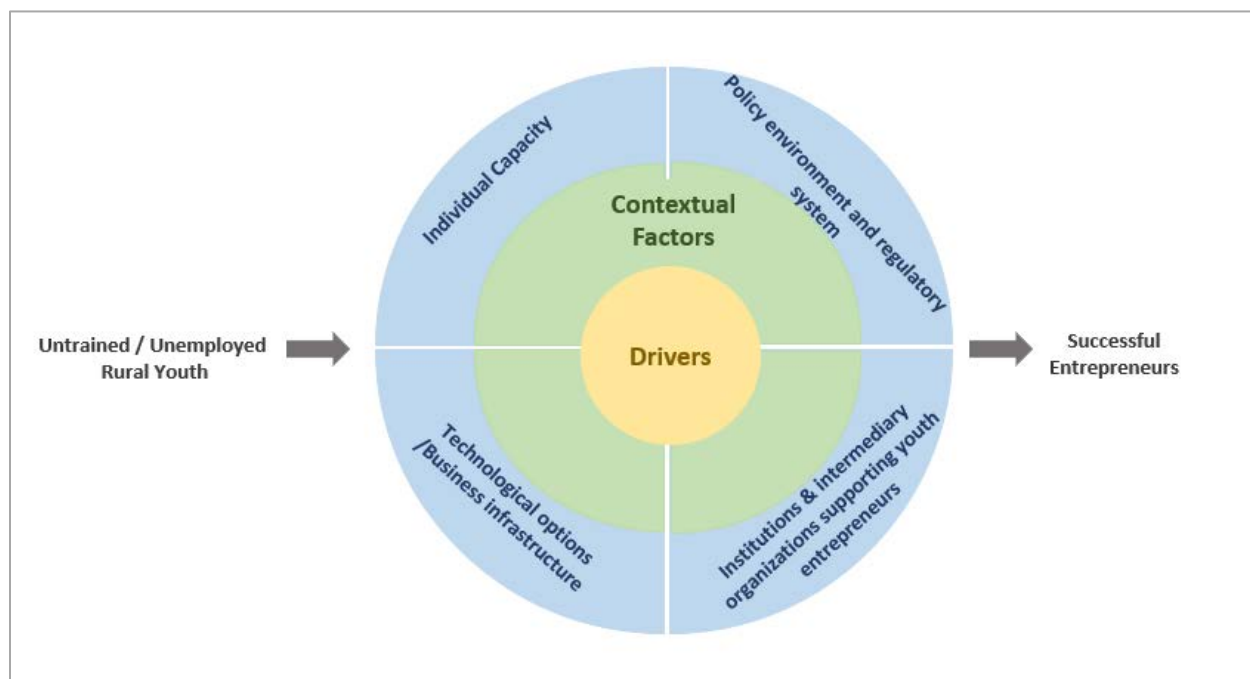
Evidence-based literature on youth entrepreneurship development remains limited. Understanding the issues, constraints, challenges and opportunities that rural youth face in initiating and successfully running their businesses requires studying them in their setting. In this paper we take two broad approaches to studying rural youth entrepreneurship and developing testable hypotheses. First, a systems approach places rural youth in the entrepreneurship ecosystem, as well as further embedding this within the broader food system. Second, we employ a multi-stakeholder perspective for analyzing and addressing the challenges. This two-pronged approach enables us to develop specific hypotheses to be tested through case studies. It also provides opportunities for identifying the relevant multi-stakeholder organizations, groups and individuals along the value chains.

The following section describes the conceptual framework, methodology, case study selection and data collection process.

Conceptual Framework

Figure 1 illustrates the conceptual framework used in this study for identifying a set of hypotheses tested through case studies. The framework allows delineation of contextual factors which are necessary but not sufficient, as well as drivers which are both necessary and sufficient for the successful development of rural youth entrepreneurship. It also enables evaluation of each case study across four 'key component' groups: policy environment and regulatory system, institutions and intermediary organizations supporting youth entrepreneurs, technological options and business infrastructure, and individual capacity and skills. Each of these components comprises a set of contextual factors and drivers that support and encourage rural youth empowerment through entrepreneurship, as presented in Table 1.

Figure 1: Framework for rural youth empowerment through entrepreneurship



Source: Authors' compilation

The advantages of using this framework are fourfold. First, it helps identify issues at the policy and entrepreneurship ecosystem level in various political economy settings. Second, it enables categorization and comparison of individual capacity and skill constraints that youth face in different policy and business environments. Third, it can trace needed interventions at the institutional and regulatory level, where gaps may work for and against youth engagement in agribusinesses. Finally, it is readily amenable to operationalization and application to a broader set of country case studies.

Table 1: Selected key factors and drivers for rural youth empowerment through entrepreneurship

Strategic Areas	Contextual Factors	Drivers
Policy environment and regulatory system	Political environment development for youth / youth migration	National youth policies / Social investment / youth development fund
	Public-Private Partnership opportunities	Harmonized policy system including an established entrepreneurship ecosystem
	Infrastructure for business / access to assets (such as land, markets, etc.)	Agribusiness strategies / policies (across agribusiness value chains)
	Governance and judicial system	Export / market / trade opportunities
	Sound financial system	Access to credit and insurance

	Regulatory environment	Regulatory support
Institutions and intermediary organizations supporting youth entrepreneurs	<p>Enabling business environment / financial services</p> <p>Existence of Chambers of Commerce</p> <p>Existence of technical institutions / skill development institutions / building youth capacity</p> <p>Existence of youth associations – networks and mentorships institutions</p> <p>Development of institutional partnerships in value chains</p>	<p>Multi-stakeholder approaches to youth and market opportunities</p> <p>Access to finance and credit</p> <p>Access to knowledge and skill development</p> <p>Support from Chambers of Commerce for youth development</p> <p>Farmer organizations, etc. encouraging youth development</p> <p>Agribusinesses courses available at technical institutions or post-secondary level</p>
Technological options / Business infrastructure	<p>Telecommunication infrastructure / ICT and its adoption</p> <p>Availability of technology and innovation</p> <p>Value chain development opportunities / agribusiness incubators / academic / research linkage</p> <p>Information and knowledge system supporting youth</p> <p>Rural roads, storage/logistics infrastructure</p>	<p>Connectivity / access to internet / Cost of mobile / data</p> <p>Access to new technology and its adoption by youth</p> <p>Youth are guided by an entrepreneur ecosystem with multi-stakeholder participation</p> <p>Access to relevant and reliable information</p> <p>Access to input and output markets / processing and storage facilities</p>
Individual capacity / Skills	<p>Working / family business experience</p> <p>Professional incubator facilities for the youth</p> <p>Access to knowledge and research</p> <p>Mentorship in business, networking and community support</p>	<p>Incentives and motivations</p> <p>Education / aptitude for learning</p> <p>Ability / soft skills exposure</p> <p>Business attitude and professional outlook and skills</p>

Source: Authors' compilation

Based on this conceptual framework, we developed four sets of hypotheses for studying the challenges and opportunities facing agricultural youth in developing their enterprises. Each case study presented has four sub-sections analyzing these hypotheses.

Policy and regulatory environment: This component refers to the policy environment, particularly to the constraints and support it poses for the development of youth entrepreneurship. It also highlights potential policy and regulatory changes needed to further promote youth entrepreneurship in agribusiness. Drivers of successful youth entrepreneurship include effective national youth policies, social investments, youth development funds, agribusiness strategies related to youth, access to credit and insurance, as well as market and trade opportunities. We hypothesize that an enabling policy environment that nurtures an entrepreneurship ecosystem and facilitates empowerment of youth entrepreneurs through multi-stakeholder participation is essential.

Institutions and intermediary organizations supporting youth: This component focuses on the roles played by relevant institutions and intermediaries in developing youth entrepreneurship. Key drivers include access to knowledge and skills development, support from Chambers of Commerce to pursue entrepreneurship ventures, and the availability of and access to agribusiness courses at technical or post-secondary institutions. We hypothesize that institutional support through multi-stakeholder approaches for connecting youth to agribusiness opportunities, providing credit, business education, skills development and partnerships can drive engagement of rural youth as entrepreneurs in agribusiness opportunities.

Technological options and business infrastructure: These factors and drivers relate to technological solutions, including access to mobile technology and other infrastructure needed to successfully run agribusinesses. Information and knowledge about markets and prices can be made available to entrepreneurs through ICT. Payment through mobile phones and other infrastructure for online transactions are increasingly important for small businesses in developing countries. The development of cold storage facilities for commodities, as well as logistical support for marketing produce locally and internationally is also needed. Finally, support to Research and Development (R&D) helps adapt technologies to local conditions and ensure continuous improvement so that YE remain competitive. We hypothesize that the availability of, and access to, appropriate technologies and infrastructure facilities help engage large numbers of agricultural youth.

Individual factors: Involvement of youth entrepreneurs in agribusiness also depends on individual factors for each YE. Studying these characteristics helps clarify the areas in which the youth may need help to develop specific technical skills and gain human, financial, political, social, and material capital for effectively initiating and expanding businesses. Key drivers include incentives and motivation to pursue entrepreneurial opportunities, education and aptitude, ability, soft skills and business attitude. We hypothesize that factors that contribute to the development of individual capacity and skills of youth will help generate numerous agricultural youth entrepreneurs.

Case Study Selection

The cases reported in this report were selected based on consultations with the national youth entrepreneurship units and their program managers. Other considerations included age of the entrepreneur, years in business operation, and nature of agribusiness value chains. In Nigeria, we began with a country level business ecosystem analysis to identify potential models of youth engagement in agribusinesses and rural enterprises. Based on the analysis and other selection criteria such as age, type of businesses, approachability, and main forms of support received (from the public, for profit and not-

for-profit sectors), we selected seven youth entrepreneurs for the study. Among them, four focus on rural agribusinesses. The other three are urban-based entrepreneurs seeking to connect farmers and aggregators better to markets and consumers.

Data Collection and Interview Process

Using the conceptual framework presented above, a detailed questionnaire was designed, and field interviews were conducted. The selected YE were personally interviewed in their business settings, as well as by phone. Policy makers and program managers responsible for youth programs in Nigeria were interviewed for further information. Field visits were conducted to selected YE business locations and operations. Discussions took place with a range of stakeholders, including leaders from governmental and industry institutions.

The detailed questionnaire was adapted to the urban YE context, and abridged interview templates were shared in advance. The interviews with urban YE were conducted online via Zoom and lasted between 1-1.5 hours. The interview format was semi-structured, a method that consists of asking common questions around chosen topics (as per the interview template), while still enabling the interviewer or interviewee to diverge and pursue a particular idea or response in more detail. The three urban interviews were recorded and transcribed to facilitate analysis of common challenges, opportunities and perceptions.

3. Status of Youth and Youth Policies in Nigeria

In this section, we present an overview of the status of rural youth and youth-related policies in Nigeria, within the context of studying opportunities for youth entrepreneurship development.

Youth Population in Nigeria

According to available data, in 2018, Nigeria had an estimated population of over 203.9 million, an annual population growth rate of 2.54 percent and a median age of 18.4 years (World Population Review; Central Intelligence Agency). As of 2016, over 41 percent of Nigeria’s population was below the age of 15. A large proportion of the population will thus soon be entering the labor market, requiring new job opportunities (National Bureau of Statistics, 2017).

Between 2011 and 2019, the share of unemployed youth increased from 9.5 percent to 16.2 percent, while the share of rural youth unemployment rose from 7.3 percent to 15.2 percent, respectively (Refer to Table 2) (ILOSTAT, 2020). Youth unemployment in rural areas was further exacerbated by the 2016 recession (Kalagbor et al, 2019). Policy makers have placed youth employment challenges at the center of their agenda. Without concerted policy and programmatic efforts, youth joblessness may pose serious political and socioeconomic challenges to national and state governments.

Table 2: Share of youth (15-29 years) unemployment (in percent)

Year	Total	Rural	Urban
2011	9.5	7.3	13.3
2013	9.4	5.3	16.4
2016	15.3	9.7	24.1
2019	16.2	15.2	18.8

Source: ILOSTAT (2020)

Youth Employment in the Agricultural Sector

The federal government recognizes the extent of the youth unemployment crisis in Nigeria and the role of agriculture in addressing it (NYP, 2019). In 2019, the share of agriculture in total employment was 35.1 percent (World Development Indicators). According to the most recent National Baseline Youth Survey (NBS), conducted in 2012, more than 37 percent of youth were engaged in agriculture. Of these, 48.4 percent were males and 51.6 percent females. Agriculture is a pivotal sector for youth employment in Nigeria, engaging more than one-third of the youth population in 2012 and today probably a higher proportion due to limited opportunities in non-farm sectors.

Table 3: Percentage distribution of youth in agriculture by farming activity, age and gender

STATE	AGE GROUP							
	15 – 19		20 – 24		25 – 29		30 - 35	
	Male	Female	Male	Female	Male	Female	Male	Female
Crop Production	64.4	35.6	55.4	44.6	54.4	45.6	60.4	39.6
Animal Husbandry	67.7	32.3	62.8	37.2	59.0	41.0	66.7	33.3
Aquatic	52.3	47.7	44.4	55.6	57.3	42.7	64.4	35.6
Others	100.0	-	-	-	100.0	-	79.7	20.3
National	63.8	35.2	56.5	43.7	55.2	44.8	61.6	38.4

Source: National Baseline Youth Survey (NBS 2012b)

According to NBS (2012b), youth agricultural firms and businesses generated a total of 16 billion dollars in 2012, of which crop farming activity had the highest contribution, followed by livestock, poultry, and fishing (NBS, 2012b). In this survey, males aged 15-19 were the most active youth group in crop production and animal husbandry, while those aged 30-35 were most active in the aquatic farming sub-sector. The most active female group was 20-24-year-olds in the aquatic farming sub-sector (See Table 3).

In recent years, several steps have been taken to stimulate the interest of youth in agriculture. These include the provision of special incentives such as credit facilities, skills training and internships (Kalagbor et al, 2019). Youth involvement in agriculture, including entrepreneurship, nonetheless remains limited. Contributing factors include inadequate knowledge of the potential of the agricultural sector, lack of access to relevant resources for profitable agricultural engagements, inadequate technical know-how for economically viable agribusinesses, lack of facilities to preserve agricultural products, inadequate access to the fair product marketing and food processing industries, inadequate access to funds, land, high-yield seeds and fertilizers, as well as a lack of political will to implement policies (Ajani et. al, 2015; Adesugba et. al., 2016; Ghebru et. al, 2018; Simelane et al., 2019).

Against the backdrop of these challenges, the following section outlines key existing initiatives for youth engagement and entrepreneurship in the agriculture sector related to the four sets of factors and drivers of the conceptual framework presented earlier.

Policy and regulatory environment for youth entrepreneurship

Policy initiatives focusing on youth entrepreneurship in Nigeria's agricultural sector are discussed below.

Nigeria Youth Policy (2019)

One of the key drivers identified for successful YE development is the presence of a national youth policy. Nigeria has one. The National Youth Policy (NYP) 2019, an update of NYP 2009, considers existing, new and emerging challenges. The policy targets everybody in Nigeria between the ages of 15 and 29. One of its thematic focus areas is to promote youth involvement in agriculture for national food security, social development and job creation.

The policy document discusses several major strategies. They include creation of the Nigerian Youth Development Fund (NYDF) with a special focus on credits and grants to youth entrepreneurs and 'agripreneurs'. Further approaches include enhancing agricultural extension services, increasing the number of providers to 1:1000 farmers by 2020 and 1:750 by 2022, with a priority on youth in agriculture, as well as improving youth access to farmland, establishing Agribusiness Incubation Centers, Enterprise Development Centers and Farm Settlements across the country. NYP 2019 also foresees provision of key infrastructural support such as ICT and social amenities to reduce rural-urban migration while creating jobs, an agricultural education curriculum focusing on practical skills such as entrepreneurship and business management, creating opportunities for youth in production for raw material exports, Nigerian cuisine ingredients for the diaspora, and processed products. The aim is to create opportunities for youth at every node of the value chain, based on comparative advantages in each geo-ecological zone (seed / seedling production, supply chain management / aggregation, processing, marketing, services including agricultural input supply, extension, mechanization, farming by proxy, and land matching program).

The policy recognizes that youth employment and entrepreneurship in agriculture and agribusiness are crucial for Nigeria's agriculture transformation. It also recognizes the extent of the youth unemployment crisis and its potential threat to economic and social stability. NYP 2019 states that by engaging youth in agriculture, Nigeria can address the challenges of youth unemployment, restiveness, an ageing farm

population, low productivity and poverty, as well as helping achieve sustainable food security. However, for several areas including export production and value chains, the policy does not provide specific targets or strategies for opportunity creation. There is also no discussion of YE access to insurance.

Agriculture Transformation Agenda (ATA) and Agricultural Promotion Policy (APP)

In 2010-11, the government of Nigeria established the Agricultural Transformation Agenda (ATA). This identified several value chains for which specific production targets were to be achieved in the following decade. These achievements would be enabled by boosting agricultural lending, input subsidies, developing crop processing zones, introducing high-yield crop varieties, and strengthening market access (National Association of Nigerian Traders, 2018). Over time, it was recognized that the ATA had failed to deliver on key policy drivers including access to credit, particularly for smallholders. Weak agribusiness strategies across the value chain led to insufficient access to improved seed varieties, and to rudimentary midstream logistics including warehouse and storage facilities (National Association of Nigerian Traders, 2018). The Federal Ministry of Agriculture and Rural Development (FMARD) also recognizes the inability of the country to meet its domestic requirement for food and the failure to meet the quality requirements for success in international markets (Ifeoma, 2019).

In 2016, the new government led by President Buhari introduced the APP, also known as the “Green Alternative”. This was intended as the national policy framework for driving growth and development of the agriculture sector. The policy covers the period 2016-2020, replacing the ATA which had been in place from 2011 to 2015. The APP also focuses on developing and launching entrepreneurship platforms that create a pathway for youth and women to engage in the agribusiness economy, expand capacity-building including technical training and access to financial services, and facilitate investment advisory support for potential entrepreneurs. The policy emphasizes export promotion through tariff reform, improvement in crop quality, involvement of the private sector and increased export orientation in specific crops.

The APP recognizes the low access rate for agricultural insurance. Measured by farmers enrolled and cropping area covered, the rate is only three percent. The Insurance Commission has licensed new agricultural insurance retailers, but the Nigerian Agricultural Insurance Corporation (NAIC) remains the dominant supplier. The APP proposed developing new products (e.g. microinsurance, weather-index insurance) and allowing private insurers to participate in government-sponsored programs.

Youth Entrepreneurship Development Programme (YEDP)

The Central Bank of Nigeria (CBN) launched YEDP in 2016, as part of its efforts to deepen credit delivery to address the challenges of unemployment, promote an entrepreneurial spirit among Nigerian youth and enhance the spread of small and medium enterprises (Central Bank of Nigeria, 2016). The program provides long-term working capital for startup and expansion projects by young graduates and non-graduates in several sectors. These include the farming of fish, poultry and snails (Central Bank of Nigeria, 2016).

The YEDP disbursed US\$500 thousand for 74 projects in the first two years since its inception in 2016 (Central Bank of Nigeria Annual Report, 2018). However, according to a 2019 report by the Carnegie Endowment for International Peace, obtaining CBN credit has remained challenging for small-scale and commercial farmers seeking to become entrepreneurs. According to the report, CBN’s Agricultural Credit Guarantee Scheme was poorly designed, badly implemented and difficult to access. For example, only one out of the 190 members of the Lagos State Chamber of Commerce’s farmers group who applied for a loan eventually received it (Carnegie Endowment for International Peace, 2019).

National Youth Service Corps (NYSC)

NYSC is a government scheme which aims to provide encouragement and develop common ties among Nigerian youth, as well as promote national unity (World Bank, 2018). A key focus is on training and mentoring young graduates in skills acquisition and entrepreneurship development (World Bank, 2018). The federal government currently allocates about US\$194 million to the program (Council on Foreign Relations, 2017). Three recent studies have highlighted that since the program began in 1973, its efficacy has been hampered by corruption, political and local security threats. Future success depends heavily on resolving these challenges (Chukwuemeka et al, 2014; Council on Foreign Relations, 2017; Oluwalogbon et al, 2019).

Institutional and intermediary environment

Some key institutional initiatives focusing on youth entrepreneurship, with a focus on the agricultural sector, are discussed below.

World Bank's West Africa Agricultural Productivity Program (WAAPP)

Officially ending in 2019, the WAAPP was a multi-year effort to transform West African agriculture by boosting productivity and sustainability. It aimed to reduce hunger, improve nutrition, create jobs and support collaboration across borders (World Bank, 2016). The program targeted six percent agricultural growth and increased food production and availability in West Africa (World Bank, 2016). WAAPP worked with scientists, researchers, extension workers and farmers to i) innovate, generate, disseminate and adopt improved technologies, ii) create enabling conditions for regional cooperation, iii) build human and institutional capacity across the region and iv) create youth employment, engage women and adapt to climate change (World Bank, 2016).

According to one success story highlighted by the World Bank in 2019, programs in fish farming, integrated aquaculture and novel ways of producing quality fingerlings have led young people and families either to start fish farming or expand their farms. This change has increased their incomes and livelihoods. The Bank also reports that WAAPP Nigeria trained interested students in selected schools on basic techniques for rearing fish to increase their interest in the fishery sector at a younger age. Although WAAPP has ended, due to its success in schools, the government has approved further such outreach schemes.

Nigeria Youth Entrepreneurship Network (NYENET) and Technology Fund

NYENET is a public-private partnership between the Federal Government of Nigeria, various ministries, departments and agencies, and the Anabel Group (Okoye et al., 2015). It aims to improve the organization and coordination of various entrepreneurship programs within the country (Okoye et al., 2015). Previously, entrepreneurship and empowerment programs for job creation were often hosted in several unrelated agencies. NYENET was designed as a platform to harmonize implementation and improve management, efficiency and effectiveness (Okoye et al., 2015). Although the results of this partnership are unclear, several recent initiatives by the Nigerian federal government show promise. For example, the Bank of Industry has allocated a technology fund of US\$20 million to support youth innovators and entrepreneurs. In addition, it also provides online training programs through its Youth Entrepreneurship Support Program for entrepreneurs in the age group of 18 and 35 years (Medium, 2020).

The Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)

Established in 1960, NACCIMA is an umbrella organization for various Chambers of Commerce (NACCIMA, 2019). Membership encompasses city, state and bilateral chambers, business/professional associations and corporate bodies (NACCIMA, 2019). NACCIMA engages in advocacy to influence public policies that promote free enterprise (NACCIMA, 2019).

Support from Chambers of Commerce is a key institutional driver for YE success. In recent years, NACCIMA has increased its support for youth engagement and entrepreneurship to reduce youth unemployment. In 2017, it launched a Youth Group to invest in the youth and economic future of Nigeria by providing education, entrepreneurial know-how and skills training to young people in business (NACCIMA, 2018.). NACCIMA also collaborates with institutions such as the Nigerian Export Promotion Council (NEPC) and Federal Institute of Industrial Research Oshodi (FIRO) in training and empowering youth in the areas of agriculture, agro-processing and non-oil export (NACCIMA, 2018).

Despite positive goals, Nigeria's business associations play a limited role in shaping government programs designed to help their small and medium-sized members. Chamber of Commerce members report that government officials rarely consult them and that getting access to financial institutions such as the CBN continues to be challenging (Carnegie Endowment for International Peace, 2019).

Technological options and infrastructure environment

Advances in agricultural technology remains limited in Nigeria. The National Agricultural Research System (NARS) has a poor record in generating and commercializing new agricultural technologies that meet local market needs (National Association of Nigerian Traders, 2018). Challenges include obtaining access to the output market, as well as addressing the gap between demand and supply of inputs such as improved variety of seeds. Post-harvest losses remain high, while illegal food imports deprive domestic farmers of market opportunities (National Association of Nigerian Traders, 2018).

According to APP, lack of quality market information restricts farmers' ability to identify opportunities, as well as hampering transparency and coordination. The policy further highlights limited investment in infrastructure and midstream logistics, including in warehouses, storage, processing systems and irrigation facilities.

As of 2018, 42 percent and 88 percent of the Nigerian population used internet and mobile subscriptions, respectively (World Development Indicators). The country is lagging behind in leveraging ICT due to weak governance and poor infrastructure (NYP, 2019; Global Innovation Index, 2018). Significant untapped opportunities remain for improving access to youth, as Nigeria currently ranks low in the Networked Readiness Index, which rates countries on performance in using ICT to boost competitiveness, innovation, and well-being. Published by the World Economic Forum, the 2016 ranking put Nigeria 119th out of 139 countries (World Economic Forum, 2016).

NYP 2019, APP, and several other government and non-government initiatives now aim to improve ICT infrastructure and access. Increased ICT use could enhance the involvement of youth in the agriculture sector and agribusiness. National licensing of the Global System for Mobile Communications (GSM) operators in the year 2000, for example, has opened up opportunities for engagement and economic advancement for millions of young Nigerians (NYP, 2019). To promote ICT for agriculture, the government has also proposed loans and grants to youth venturing into this domain (NYP, 2019).

Individual Factors

According to NYP 2019, Nigeria's youth do not only lack opportunities in agro-based enterprises. Many of them also do not adequately appreciate agriculture's potential. The policy highlights the popular youth view of the sector as non-prestigious, manual labor-oriented, demanding and lacking scope for commensurate economic returns. Lack of adequate agri-focused entrepreneurial education, training and extension services reinforces this negative opinion. Youth enrollment in agriculture vocational training

continues to be very low. There is a vicious cycle of lack of interest and lack of adequate funding in training, research, personnel and supporting infrastructure at tertiary educational institutions (Amadi et al, 2017). Inadequate extension services contribute to the lack of awareness and knowledge of technologies to improve agricultural productivity and minimize losses (APP, 2016).

In the agricultural sector, young Nigerians lag behind in motivation, education, ability and mentorship. The government recognizes these challenges and has proposed strategies to address them in NYP 2019. To improve youth motivation, incentives and skills, the policy proposes that graduates of agriculture shall be entitled to interest-free loans, using their NYSC certificate as collateral. Additionally, it aims to improve the proportion of extension services to clients, notably youth, as described above. The policy also mentions increasing public awareness of agriculture's immense benefits for youth and community development, as well as integrating vocational, technical and practical skills for agricultural entrepreneurship and business management.

In summary, several policies and strategies are in place in Nigeria that facilitate the promotion of youth employment and entrepreneurship. Policy documents in the agriculture sector identify youth entrepreneurship development as a key strategy for agriculture and rural transformation. However, systematic translation of these strategies into investments and programmatic action is limited. Most interventions focus on training for employment rather than developing entrepreneurs who can hire unemployed youth into their businesses. Established agribusinesses can hire only a limited number of young people; absorbing more of them into the jobs market requires greater entrepreneurship. Many youth entrepreneurship development programs lack a systematic approach, operate in isolation, remain project-driven, involve few stakeholders, and fail to link up well all the various elements of a business ecosystem.

4. Case Studies of Youth Entrepreneurs

In this section we present case studies from seven YE in Nigeria. Four are rural entrepreneurs: Steve, James, and Olu are engaged in the aquaculture sector, while Manir works in livestock and dairy farming. Another group of YE comprises the three urban agri-tech entrepreneurs Affiong, Job and Femi, who are co-founders and CEOs of e-commerce start-ups that use digital tools to link farmers with urban food markets. The below case studies highlight their stories, including their challenges, policy and institutional constraints, available opportunities for agribusinesses, and lessons they have learnt as YE. These case studies have been developed with a focus on identifying the driving factors that determine the development and success of youth entrepreneurship activities.

Rural Youth Entrepreneurs

CASE STUDY 1: Steve Okeleji – Fish producer and fingerling seller

Summary

Steve Okeleji is a fish producer, fingerling seller, and youth trainer. He represents a class of entrepreneurs who saw the potential for business early on in life. He faced several hurdles in building a business and had no support from external entities until a World Bank program supported him to expand his business skills to help other farmers in the area. Supported by connections and collaboration with political elites, Steve is now an experienced agribusiness entrepreneur who in addition trains an aspiring group of entrepreneurs. He manages a large business, which is also heavily invested in by former president of Nigeria, Olusegun Obasanjo. Steve's story is an example of a young aspiring entrepreneur overcoming hardship and challenges to obtain success.

Background

Steve is 35 years old and has a degree in Aquaculture from Abeyakuta State University. Growing up in Ogun State, Steve comes from a family of farmers. His father owned a large farm and his mother was a schoolteacher. He is one of four sons in the family and spent most of his childhood on the farm. He acquired an interest in fish rearing from early childhood and decided to pursue it during his late teens.

Steve was only 19 when he started the fish production business. When his university closed due to frequent teachers' strikes, he utilized the time to develop a small aquaculture business that produced fish and supplied fingerlings to farmers. Faced with an increasing demand for fingerlings, Steve started a fish farm in his state. He created the necessary infrastructure by digging bore wells and using a generator to accumulate the required electricity for farm operations. While initially the business involved around five employees, it gradually expanded over time. Steve is passionate about his work. As an effective networker, he meets and engages with different people in the business to expand his operations.

Occupation before the present venture and the reasons for change

While Steve originally wanted to be an engineer, he did not get into engineering school as he missed the needed scores to meet the eligibility requirement. He joined a bachelor's program in aquaculture as an alternative to engineering. He was supported by his father who believed aquaculture would be beneficial in the long run, given the emerging demand for fish in Nigeria. Before venturing into his own business, Steve worked as a fingerling distributor for a professor at his college who was already engaged in this business. Over time, Steve saw that the fingerlings demand was very high in comparison to what the professor could supply. Steve saw this as an opportunity to start his own farm to produce fingerlings and supply to the farmers.

Steve noticed that there was an opportunity for him in the emerging market for fingerlings in the northern part of Nigeria. The southern part of Nigeria was already growing fish and there were increasing fingerling suppliers to meet the needs of these farmers. While this involved additional effort and cost, it had the potential for high income. The key challenge was to create a supply system that could deliver the fingerlings to the customers on time.

The land Steve acquired and developed into a fish farm with developing water sources helped his business grow. However, Steve believes that factors like the lack of knowledge of business operations and industry best practices, as well as the significant capital costs required to run a business, can adversely affect businesses owned by young people like him. He also identified several other external constraints, such as the lack of mentorship by key players in the industry and enterprise management, low availability of soft loans and credit facilities, limited human capital due to the unavailability of training or inadequate course content in tertiary institutions of learning, as well as a lack of access to a concise data collection system to assist business planning.

Challenges and support received at the beginning of the business venture

Initially, growing fingerlings from broodstock at the farm level did not seem challenging. However, when Steve wanted to expand the business, ensuring availability of water became a challenge. This is partly due to the fact that his farm is located in a dry region. He overcame this challenge by digging bore wells and shifting the farm operation to a nearby water source. This problem later reemerged as the farm became vulnerable to floods. Also, the fingerlings production operation was jeopardized by the unpredicted parasite infection. The combination of these factors drove his business to a grinding halt. The table below provides details on the support received by the Steve during his business development and operation.

Table 4: Support received by the Youth Entrepreneur

Source of Support	Financial	Material / In-kind	Technology	Guidance & Training
Family members	Received support from father in the beginning	Shared farmland in early stages	Received support from father to understand basic farm practices	Received guidance from father on how to continue on the business, despite early challenges and failures
Community	Received support from professor in the university community who provided fingerlings on a loan basis A friend provided financial support to restart the business	None	Received fish breeding technological support from professor at the university	None
Private or political organizations	At a later stage of business, received support from a local politician (former president of Nigeria)	None	None	None
Development Partners (including NGO projects)	Received funding from World Bank's WAAPP which helped establish the training center	Received materials needed for running the center	Received technical support to develop the curriculum	Received technical assistance to run the project

As shown in the table above, the YE received support from his family, community, and mentor but did not receive any support from government organizations, especially in the early stages of his business.

Details about the business including cost, inputs, outputs, and outcomes of the business

Steve’s current business operation employs 10 young employees who are also trainees in the training center. The monthly expenditure of the business operation is around US\$10,000 per month, while the monthly return of all operations, including the training center, is about US\$6,000 per month. Steve has noted that he is currently making a loss, due to lack of a sufficient support structure to maximize opportunities across the value chain. He is therefore in the process of readjusting his portfolio to turn this situation around; for example, his current income from managing a private fish production facility is helping in this readjustment process. The table below provides an overview of the inputs, outputs, and outcomes of this venture.

Table 5: Inputs, Outputs, and Outcomes of current business venture

Inputs	Outputs	Outcomes
Personal fish production business	Fingerlings production / fish production	Serving the local fish farmers and consumers
Aquaculture Training Center	Training graduates	Training aquaculture production / business entrepreneurs
Africa Aquaculture Training Network	Sharing lessons and experiences and convening youth leaders	Developing leadership and capacity for the aquaculture industry in Nigeria and other parts of Africa
Private fish production facility	Producing and processing fish (up to 500 tons per year)	Providing quality fish to the domestic and export market Generating youth employment in the area in fish industry

While the business operation went through several years of tumultuous challenges, current operations have brought some relief and satisfaction for Steve due to the potential of earning a higher income in the future. Using the training approach, Steve was able to reduce the loss in the business that resulted from the inexperience of the workers. He was also able to stop the continuous instability arising from experienced workers leaving when they were able to learn how to produce fish and get them marketed. In addition, the training center can help fill staff gaps in the production operation.

Over the years, the above business has developed a social network with leading entrepreneurs and politicians in the state. Due to these connections, Steve serves as the chairman of Blue-Echo Foundation, a non-profit institution under the Aquatic Hub Afrique Network which provides training and support to the youth, women, smallholder farmers, fresh graduates, and other players along the aquaculture value chain. In addition, Steve is also the Managing Director and CEO of AQUASEAS Company Limited along with the Former President Obasanjo as Chairman. AQUASEAS signed a concession agreement with the Bayelsa State Government to manage the largest aquaculture outfit in Africa located in Yenegwe, Bayelsa State, Nigeria. The Bayelsa Aquaculture Village is currently situated on 127-hectares of land with a production capacity of about 15,000 tonnes of fish per annum. He has effectively used his managerial and business skills to move from small individual business ownership, entirely managed by him, to become a partner in a medium sized enterprise.

Current challenges faced by the YE

Steve points out that it is challenging to attract new trainees, as these are typically unable to pay the training fees set by him. He is now looking for sponsors to support trainees that he can later recruit. According to Steve, a major challenge in the fish production business is the range of natural disasters; in his case, the most significant have been parasite infections and floods. During both incidences, his business was completely wiped out, which was further compounded by the lack of disaster protection and available insurance mechanisms to address these risks. Moreover, Steve was not even aware of their existence, nor did he see the importance of insuring fish farms against disasters. As the industry develops further, Steve will require insurance mechanism to protect his business and investments in the event of natural disasters and other risks.

Steve points out that fish and fingerling production businesses are locality specific and need to be monitored for change in consumer preferences and competition from other states and even countries. The cost of production and distribution needs to be kept under control. The productivity of fish production is also compromised if there is no innovation in developing new broodstock, which must further be disseminated to farmers through fingerling producers. There is also a need for collective action in the aquaculture industry, for example arising from a multi-stakeholder initiative that is well connected to the policy ecosystem at the state and federal level; YE in turn could join and benefit from this.

Future Prospects

Steve has been influential in sharing business practices with the fish farmers in his area. This has increased with the establishment of the WAAPP training activity; more recently, following formation of the Africa Aquaculture Trainers Network, Steve is intending to share his knowledge beyond his state, Nigeria, and the rest of Africa. According to Steve, the prospects for scaling up look good, but the business model of training others needs rethinking. Currently, the trained YE are moving away and starting their own fish production units, with varying degrees of success. Some YE are also moving away from their businesses due to the lack of mentorship, continuous training and skill building. According to Steve, a franchising model would be more appropriate, whereby trained YE could be initially supported by an experienced YE to set up their businesses. In such a model, the experienced YE could provide training support as well as inputs from their own business to the trained YE for a fixed annual fee.

Steve notes that the prospects for replicating his model in other areas is high, given the growth of national demand for fish and the fact that Nigeria continues to import fish. However, YE entering fish production and marketing business require handholding for some time to establish production units and connect to markets. They need to be part of an association or network to have continuous information on production technologies and for linking to consumers. Again, a multi-stakeholder approach to business and sector development would be useful. For example, Steve has been isolated and worked without a support network of fingerling producers in his area. The local institutions were not developed to assist youth entrepreneurs like Steve and the regional governments did not pursue a strategic approach to develop youth entrepreneurs. Thus, a platform to bring various actors – including the youth – together in the aquaculture value chains was lacking.

Institutional and regulatory environment

According to Steve, there are no regulations or restrictions for launching a fish production business in his state, as it is considered a farming activity. Specialized fingerling production units have emerged in several states with strong infrastructure support, typically initiated by large scale businesses or politicians with sufficient resources to invest. These entities require licenses to operate as legal companies.

Steve did not depend on any association or business chamber to start up and run his business, as currently there is no such entity supporting small-scale fish producers or fingerling producers. However, there are several associations related to farming and farm businesses in Nigeria with which YE can associate and benefit from. Steve recommends that YE join an association, network or multi-stakeholder platform so that when things go wrong in the business, they have peers to share experiences and receive financial and other assistance.

The table below provides an overview of the skills training support received by Steve, described in more detail in the subsequent section.

Table 6: Skills training support received by the YE

	Business skills	Marketing skills	Technological skills
Self-Made	None	Acquired basic skills from the mentor professor at the university	Acquired from university and mentor professor at the university
External Informal Help	Acquired basic skills of how to run a business from family – mainly father	None	None
External Formal Training	None	Received training support from WAAPP to strengthen his marketing skills and to provide such skills to other YE as a trainer	Acquired from training received at university; frequently received skills training
Formal training through own finance	Acquired business skills	None	Acquired technological skills

Steve initially learned about the methods of producing fingerlings from an undergraduate education program at the University of Abeyakuta. Later, during the development stage of the business, he received little support from local institutions. For example, when parasites attacked his fingerlings production, he was provided with a poor diagnosis and incorrect prescriptions to solve the problem, which resulted in killing all fish. According to Steve, connecting YE with technical centers is critical for the survival of such businesses to survive in Nigeria. In this context, the development of agribusiness incubators can help in routinely monitoring challenges faced by small businesses and developing possible solutions.

Steve is constantly looking to increase and share his knowledge with the rest of his peers. However, he emphasizes that it is difficult for YE at the beginning of their journey to choose the nature of knowledge they would like to learn for their business. Having been in touch with international agencies and research institutions such as the International Institute of Tropical Agriculture (IITA) in Ibadan simplified the process for him. Collaborating with youth programs organized by these organizations has been helpful in sharing his knowledge with a large set of YE from Nigeria and the rest of Africa.

According to Steve, ensuring quality control in his business and production process is his responsibility. While there are no strict regulations in place (including for inputs in the fish farming industry), low-quality

products are often rejected by farmers and consumers. This area further requires support from policy and institutional regulatory mechanisms for effective engagement of YE in the fish production business, as well as to avoid future failures.

There are no relevant youth associations in the agriculture sector. However, Steve has not joined any associations as most allegedly do not achieve their purpose, due to mission deviation, internal politics, and other factors. In addition, developing institutional partnerships with the private and public sector has been difficult for him. In this context, a multi-stakeholder platform that brings together small- and large-scale businesspeople along with other actors in the industry would be needed for YE engaging in fish production and marketing businesses.

Technology and market access

Internet and mobile connectivity have been reliable and have helped Steve work efficiently. Maintaining a mobile phone is affordable in rural areas in Nigeria. Steve uses both a laptop and mobile phones effectively to receive information, as well as connect with social and business networks.

Access to new technology has been made possible through the local university system and international agencies such as IITA in Nigeria, and other organizations in Africa. The WorldFISH and its projects have been useful to track new technologies in Nigeria's aquaculture sector. Obtaining information on markets and prices is very important, as business can fail if reliable information on the markets and prices is not available on a daily basis. Steve has invested in connections with the business community to obtain the right information at the right time, in order to make right decisions.

Steve developed his own method of finding new markets. For example, when the local market was saturating for the fingerlings, he ventured to northern Nigeria to identify new markets. While this increased transportation costs, it was compensated by higher prices he could obtain from fish farmers. Steve's social networking skills have helped him get advice from various sources. In addition, he is constantly developing new mentors as his business expands and activities are diversified. Currently, he is being mentored by the former President of Nigeria Hon. Obasanjo, who has entrusted him with the promise of considerable business investments.

Individual factors affecting the YE

Steve has gone through several ups and downs in his business during the last 10 years. While the experience has been challenging, there have been rewards as well. He believes the support he received from his family and friends during hard times was crucial. In addition, Steve has been developing business skills at different levels to keep up with a rapidly growing business. He also benefited from leadership skill training such as executive management programs, which introduced modern management techniques. Steve is also working on building trust with potential partners from different businesses.

Steve has also developed skills in expanding his social network, which has helped him expand into new markets. Furthermore, he has been successful in identifying political connections that often open new avenues for the business. He emphasized the importance of the geographical location of a business and how it plays a crucial role in connecting to a larger consumer base. Research conducted at universities in the southern region on aquaculture has been helpful to help him stay afloat on the recent developments in the fingerlings and fish production business.

Steve has been business-oriented since childhood, watching his father run the farm and learning from his family members. The attitude of not giving up, looking for new opportunities to expand, and taking charge of the situation at all times has helped him build his self-confidence. In the last 10 years as a businessman,

Steve has developed management and people skills in addition to business and technical skills. These skills were not taught in any training program; instead, he has consciously followed a few role models to develop such skills. Whenever he goes to meetings or conferences, he develops a network of contacts to expand his business.

Impact on the community

According to Steve, his business has had a positive impact both on the youth and his community. He has been a role model to several YE who have undergone training in his center. The youth employed in his farm have learned new technologies and business skills. Some of them have moved on to develop their own farms and businesses. The gender impact of his business operation has been significant as around 30-40 percent of the employees and trainees are female. These female workers have gone on to develop fish farms and become self-sustaining members contributing to the family and community welfare.

Conclusion

The case of Steve Okeleji is an example of a youth who ventured into fingerling business after learning fingerling breeding skills from a mentor. With a college degree and the support of his family he was able to initiate and operate his business. Along the way he faced several challenges which he could overcome through a high level of tenacity, including by expanding his business to fish production and marketing as well as further developing and operating a fish production training center for the youth in his region. In addition, by developing his social and business networks, he is currently engaged in managing a large-scale fish production operation, while looking after his own business on the side.

The policy system was neither a hindrance nor conducive for him to initiate his own business. He explored new markets on his own to supply fingerlings to northern states when confronted with local competition. He faced several challenges related to production technology, which could have been overcome if an entrepreneurship ecosystem for the fish value chain had existed in his state. He took advantage of research conducted at a local university and the international research system (World Fish) to further develop his business. In addition, he was able to use his fish production, management and leadership skills to expand his activities to fish production and marketing along with establishing an aquaculture training center for the rural youth. However, while Steve has been successful, the absence of a multi-stakeholder platform to support the fish value chain as well as an organized agribusiness incubation center for transferring technologies for commercialization means that the youth trained by him have not been highly successful.

CASE STUDY 2: James Ogabo – Fish breeder and Breeding Service Provider

Summary

James is a fish breeder and on-site breeding service provider. Since his teenage years, James' desire was to become self-employed and independent. He wanted to have his own business and contribute to his country's development goal of youth empowerment, as well as bridge the gap between the demand and supply of fish in Nigeria. After acquiring fish breeding skills, he faced several challenges while setting up his business including lack of access to credit, technology, and information. His motivation to pursue his venture stems from his educational training and skills training, which he received on fish breeding, rearing, and processing through various government training programs. He is a successful fish breeding service provider, something he is very passionate about.

Background

James Ogabo graduated from the University of Agriculture, Makurdi with a bachelor's degree in Agricultural Sciences. He pursued a postgraduate diploma in Public Administration and a Master's in Public Administration. He also obtained a national certificate in management from the National Institute of Management and the Youth Employment Agricultural Programme (YEAP) organized by Agricultural and Rural Management Training Institute (ARMTI). He further completed a certification in vocational training on fish breeding, rearing, and processing from the Federal College of Fresh Water Fisheries Technology, New Bussa, Niger State, a program sponsored by the FMARD.

James gained important leadership, management, and entrepreneurship knowledge through these trainings, which motivated him to explore entrepreneurship further. He started attending several agricultural workshops and seminars on human resource management, as well as completing a training course in agribusiness entrepreneurship. These vocational trainings completely changed James' mind, moving away from working *for* someone to running something himself in agribusiness. He learned about fish breeding, rearing, and processing, and how to run aquaculture as a business model. He also acquired skills on mobilizing resources and agribusiness management skills. He was then all set to start his fish breeding business and calls himself a "fish breeder".

Occupation before the present venture and reasons for change

After his vocational training, James wanted to transfer his knowledge into practice. He started out by buying four broodstock, which after breeding rapidly produced thousands of fingerlings. However, this first breeding experience was not ideal, as he achieved little success due to poor water quality (high PH) and insufficient facilities for hatchery.

In 2016, James rented a pond in Buwari in Abuja where he stocked 3000 fingerlings. Unfortunately, in the same year, heavy downpour resulting in flooding led him to lose his investments. Not wanting to give up, James restocked the pond with fish again. In the next year, he became a victim of theft and lost his fish. These series of unfortunate events did not deter him. He rented some land in Benue state and embarked on fingerling production; since then, he has recorded some modest success. He learned from his past experiences and is now performing much better with excellent return to his investment. His current fish breeding business employs four persons, all of whom are aged below 35 years. He is also using his fish breeding skills to provide on-site fish breeding services to small-scale fish farmers in his state. In addition, he is involved in training young fish breeders through state run training programs.

Challenges and support received at the beginning of the business venture

As an aspiring entrepreneur, James faced several challenges. Access to finance was one of them, as it was difficult to approach risk reducing institutions and credit facilities for loans and grants. James does point out that the current government has initiated favorable agricultural policies and that there are provisions of loan facilities by CBN for youth corps who are willing to take up agriculture as a venture for livelihood and self-sustenance. Although Benue State has an enabling environment for business operations, the major challenge has been the lack of institutional and regulatory support. Access to new technology has also been difficult for him and other YE. James also recalls facing a shortage of instructional and informative materials. With limited access to literature and other research materials in a business that was relatively new to the country, James had to make additional efforts to prepare himself. The table below provides an overview of the support he has received.

Table 7: Support received by the YE

Source of Support	Financial	Material / In-kind	Technology	Guidance & Training
Family members	Received some initial assistance from father	Received help on building a pond with a capacity for 2000 fish	None	Received useful advice
Government	None	None	Learned about innovations in agronomic practices	Attended session on conducting aquaculture as a business at Banjul, Republic of Gambia. Attended agribusiness workshop in ARMTI in Abuja and Kwara State, which was sponsored by FAO and FMARD
Development Partners, including NGO projects	None	None	None	Received some guidance and support from Community Link and Empowerment initiative NGO

As shown in the above table, while James received support from family, government, and IGOs/NGOs, he was not supported by the community and the private sector.

Details about the business including cost, inputs, outputs, and outcomes of the business

James is involved in fingerling production, fish rearing, processing, and training. Through his production facility, he provides quality fish to the market and fingerling for rearing purposes. In addition, as part of his training support activities, he has trained over 1500 youth corps members on aquaculture farming. The table below provides an overview of the inputs, outputs, and outcomes of the venture.

Table 8: Inputs, Outputs, and Outcomes of the Business Venture

Inputs	Outputs	Outcomes
Personal fish production, brood stock, and feed	Fingerlings production / Fish rearing and Fish processing	Providing fingerling for fish rearing to raise them to table size production and sell processed fish as barbecue (roasted spiced fish)
Training	Training graduates in orientation camp and post camp on aquaculture farming, livestock management, and agri-business. Youth corps members	Over 1500 youth corps members have been trained out of which several are

	are sent by the federal government on a compulsory one-year mandatory community service to different states of the Federation.	currently practicing aquaculture farming
Training Network	Sharing lessons and experiences and convening youth leaders	Creating leadership and capacity for the aquaculture industry in Nigeria and in Africa
Private fish production facility	Producing 15 tons of fish per year, generating US \$15-16000 as revenues with a net profit of about US \$10-12000	Providing quality fish for domestic use and quality fingerlings for rearing Generating youth employment in the area in the fish industry

Current challenges faced by the YE

A key challenge faced by James is the lack of adequate funds to expand his business. While his family land is not large enough to expand his production activities, renting land is also expensive. The formal credit institutions are not ready to finance individuals seeking loans, and there are no insurance programs to protect investments if natural calamity occurs. While James would like to stay in fish production and breeding business, his inability to expand has driven him to take up on-site fish breeding as a service provider in his state. This requires frequent travel to clients’ farms in remote parts of the state. However, there is no systematic approach to fish production in his state and the fish value chain is not organized. Producers face market and price uncertainty due to lack of information on markets for their produce.

Future prospects

In addition to fish production and fish breeding activities, James owns farmland where he grows cassava, maize, and beans. He supports rural farmers in his area in adopting best agronomic practices. In addition, he plans to expand his business scope to create more employment opportunities for the youth. James plans to continue expanding his business along with sharing knowledge to empower youth. He aims to advocate for aquaculture as a means of income for youth in his state. For this, he seeks to set up orientation camps for young farmers and students in secondary schools for students to participate in discussions and organize events, in order to boost their knowledge and skill sets related to agriculture and aquaculture activities. He also wants to build a “Livestock Center”, which could be used for practical demonstrations to students. In the long run, he aims to supply fish and expand to poultry production operation as the demand for poultry increases in Nigeria.

Impact on the community

Today, James is not just an entrepreneur but also a successful trainer. He gets immense pleasure in training YE and sharing his knowledge with farmers and students. Some of his lecture topics include entrepreneurship skills for agribusiness, leadership skills development, mobilizing youths for community development, and knowledge on agricultural development.

Even though training is not a major source of his income – he earns only a small amount of \$500 per month from trainings – he says the experience is satisfying and impactful. Major beneficiaries of his training are youth corp members who are sent on a one-year mandatory community servicing NYSC and are trained on entrepreneurship skills for agribusiness. He has trained over 1500 youth corp members over two years. He also conducts paid consulting to earn additional income by engaging in capacity building efforts for youth and women in rural communities. James has now trained over 1000 people on fish breeding and processing. His rural capacity building effort, along with community cooperation has led

to an increase in number of women engaged in agriculture. He says about 40 percent of his trainees have converted their knowledge into practice.

Institutional and regulatory environment

James has received some support from the cooperative Ehu-Enehi, in the form of networking and business promotion. He has not received support from any Chamber of Commerce. He states that it has been difficult to access and approach risk reducing institutions and credit facilities. Lack of institutional support for the development of the fish value chain is a huge hurdle for young entrepreneurs venturing into aquaculture production and marketing activities. Lack of infrastructure and cold storage facilities also exposes the fish production system to market and price uncertainty and increases post-harvest losses. This lack of institutional support largely deters young entrepreneurs to enter the fish production business.

The table below provides the skills training support received by James.

Table 9: Skills training support received by the YE

	Business skills	Marketing skills	Technological skills
Self-Made	None	Learned the basic skills from an Aquaculture professor	None
External Informal Help	Learned some basic skills on running business from family, mainly father	Networked with friends who are in similar enterprise	None
External Formal Training	Learned some skills from FADAMA III project-a World Bank assisted project on agribusiness	Learned some skills from WAAPP	None
External Formal Training (Institutional)	Learned on agribusiness skills from ARMTI in Kwara State	None	Frequently received skills training from agricultural workshops
With own finance got formal training	Frequently received skills training	None	Sometimes attended training activities with own funding

Technology and market access

Access to new technologies in fish production business is a challenge for a young entrepreneur in Nigeria. James does not have access to a recirculating aquaculture system for controlling the water parameters to enable fish, fries, and fingerlings to have an optimal living condition. The productivity of his fish farm has been lower than optimal in the absence of such technology, and has resulted in frequent mortality of the fish, fries, and fingerlings. Due to his inability to obtain a loan from formal institutional sources, he has not been able to access this technology. The lack of market information on the fish demand and fish prices has also been a major challenge. Fish producers have not been able to work together due to lack of organizational skills among themselves. According to James, the creation of an entrepreneurship ecosystem for fish production may help in improving the technological and market access to the fish farmers in his state.

Individual factors affecting the YE

James comes from a farming background. He was able to educate himself in agriculture at the undergraduate level and public administration at the post graduate levels. He has invested in learning the technical and business skills needed for starting fish breeding and later moving into the fish production business. He has a high level of people skill, which is useful in expanding the on-site fish breeding services provision activity which brings additional income to supplement the fish production business that he runs.

Conclusion

Following his university degree, James launched his own fish breeding business on a small-scale. He obtained his training in fish breeding through a government youth program. James is ambitious and has always had a desire to become self-employed and independent. He is passionate about building youth capacity in agriculture and aquaculture businesses. In order to improve his technical and business skills he engaged in several training courses offered by government programs. He is highly self-motivated and seeks to support fellow youth in initiating businesses. Financial support from his family was limited, but they did provide moral support in starting his own business. He has also been facing regular challenges in expanding his fish production business. However, due to diversification of his activities from fish breeding to fish production, on-site breeding service provision and participating in youth training programs, he has been able to maintain a meaningful standard of living as a young entrepreneur.

CASE STUDY 3: Manir Umar Hussaini – Livestock and Dairy Enterprise

Summary

Manir Umar Hussaini runs a small-scale livestock production unit and a dairy enterprise that produces milk and dairy products that are supplied to retail stores and dairy value chains in Abuja's urban and peri-urban region. Initially trained by the FMARD-supported youth development program, Manir began his dairy business with just a few cows that has since developed into a self-sustaining enterprise. He also trains youth in his community, which has helped them set up farms that supply milk.

Background

Manir is 36 years old and completed his undergraduate degree in social sciences. He comes from a middle-class family; his father having worked as a bureaucrat in the federal government system. After several years of working in low-paid jobs, Manir received an invitation from the FMARD to attend a six-month course on youth entrepreneurship. He obtained a national certificate in management from the National Institute of Management and YEAP organized by ARMTI. He also completed a certification sponsored by the FMARD in vocational training on fish breeding, rearing, and processing from the Federal College of Fresh Water Fisheries Technology in New Bussa, Niger State.

The program brought selected youth from across the country to train in various entrepreneurship activities in New Bussa. Initially, Manir was not sure about the type of entrepreneurial activity he wanted to pursue. Also, it was unclear what kind of support he might receive to start his own business after the training was over – especially as only little information was shared during the training program on how to obtain funds and raise resources to start an enterprise. He chose beef cattle production and dairy management activities for his practical training, which he described as 'intensive and hands on.' The practical sessions helped him understand the production process of fattening cattle for beef production, as well as learning how to care for animals and acquiring technological know-how of running a small dairy operation. Manir was one of three people – out of a total of 50 participants – who went on to start and sustain a successful business. After attending this training, he was able to attend a YE follow-up training

by FMARD, during which he received a calf – the only free investment support for his livestock production business.

Occupation before the present situation and reason for change

Prior to setting up his own business, Manir was helping his father in several activities related to the family business. Undertaking these activities helped him develop some business and people skills. He did not face the pressure of earning money for his livelihood as his parents were able to support him financially during this period. He was ambitious to start his own business and was always looking for potential business opportunities. This was also a period of frustration for him, as the business opportunities he was interested in required specific technical skills as well as considerable start up investment. It is around this time that he received an invitation from FMARD, through a contact of his father, who encouraged him to go through the youth entrepreneurship training.

Challenges and support received in the initial period of the venture

The initial cost of starting the dairy farm was too high and Manir needed a strong guarantor to support him in obtaining the loan from commercial banks. The constraints around obtaining funding forced him to think about starting his business on a small scale. Starting small turned out to be a good approach, as the anticipated loss he could have incurred due to failure of the business would be low.

Manir used the profit he earned from selling the first calf to purchase three calves in the next cycle. The production operation took between 6-8 months, which gave him time to pursue other activities to earn additional income for survival. After he had close to 10 calves to grow, he expanded into a larger operation on a leased farm in a village outside Abuja. As income increased, he purchased land in the same village to establish his cattle fattening operation, which he currently runs.

A major challenge in the initial period of his business was his lack of organizational, financial, and management experience. While Manir was able to gain good exposure for the production aspects of the cattle fattening and dairying, he began his production activities with limited business or management knowledge. He quickly realized that this would be a major constraint for expanding his business. To overcome his skill deficiencies, he decided to pursue further studies and enrolled in a master’s program in public administration. He travelled to Ahmadu Bello University (ABU) twice a week for in-person courses, while attending to his business operations on the remaining days.

The two-year program helped him gain the necessary business skills. He learnt about institutions that could support him in his entrepreneurial venture, as well as gaining confidence to communicate more effectively with his business counterparts, government authorities, and other private businesses.

Table 10: Support Received during the beginning of the business enterprise

Source of Support	Financial	Material / In-kind	Technology	Guidance & Training
Family members	Received support from his father during initial period	Received consistent encouragement and support from family members	Received limited technical support from family members since they were not involved in the agricultural operations	Received informal advice from father and other family members on business management
Community	None	Received useful advice from	Received support from local farmers to	Received support and appreciation from

		elders in the community	establish veterinary services	village community for establishing and expanding the business
Private organizations	Received support from local veterinary services for which he paid for all the inputs and the vaccines	Received networking support from veterinary assistants who connected him to people who could provide advice on input and animal feed suppliers	Received technical knowledge support for running the business	Received advice and feedback from buyers of the fattened cattle which helped in identifying value chains that he could connect to selling his animals
Direct Govt. org. and support	Received subsidized grant for the establishment of the dairy processing unit	Received the first calf from FMARD to set up the initial cattle fattening operation	Received dairying operation and technology support for milk processing while he was establishing the processing unit	Received training on dairying and production practices for beef cattle in New Bussa

As shown in the table above, Manir received support from his family, community, government, and private organizations, but did not receive any support from development partners or IGOs/NGOs.

Details about the venture-costs, input, output, and outcomes

Manir currently employs around 20 youth in his business, who are supervised by 4 senior managers. The business incurs a per day cost of about US \$800 and a total revenue between US \$1300 – US \$1500 depending on the products sold and their quantity.

Table 11: Inputs, Outputs, Outcomes associated with the venture

Inputs	Outputs	Outcomes
Animal feed and animal protection drugs	Beef cattle, milk, and milk products	Supplying quality cattle and milk products which enhances livelihoods of local community
Technical training given to the youth employed on the farm and processing unit	Enhancing knowledge on cattle production, developing youth employment opportunities, and generating income for the youth in the communities near business	Providing the community with employment opportunities for both young men and women and training individuals for starting their own businesses
Managerial and business supervision by supervisors and the owner of the business	Creating business and marketing opportunities for the products; maintaining the quality of the products and ensuring continued production activities	Creating a sustainable business which is prepared to overcome production and marketing challenges

Current challenges faced by the YE

Over time, Manir has bought additional parcels of land surrounding his farm to graze his cattle. He currently owns around 40 acres of land to run his beef cattle production operations, produce milk and process the milk for yogurt. He has also expanded his activities to breeding cattle and supplying milk to a variety of markets, including the Abuja market. However, while he has hired more local youth as his business expanded, he has faced the challenge of youth moving to other farms to obtain higher wages after being trained by him. His farm has thus been becoming *less* efficient, as Manir has taken on the burden of training youth as well as incurring costs of their mistakes while under training.

Future prospects

Manir produces and supplies yogurt for the Abuja market. This was possible through the support of FMARD, which provides funds for subsidizing small milk processing units. To continue producing and supplying yogurt in the future, he requires a regular supply of milk from his dairy farm to the processing unit. He also needs trained labor to continue and further expand his operations, which continues to be a challenge. To overcome this, Manir has started engaging young women who reside in nearby villages. He has also trained rural youth in the area to produce milk which can be supplied to his processing unit. There is now a contractual arrangement between him and young milk producers who consistently supply him milk. As part of this contractual arrangement, Manir charges a fee for advising the newly established dairy farmers, which helps him cover costs incurred due to mistakes made by recently hired youth on his farm.

Impact on the community

In the process of establishing and developing his business, Manir has trained many youths in the villages surrounding his farm. Through his training, participants can establish their own dairy operations or work for other dairy operations in the village. Manir has also helped to empower the women in the area by providing them with employment opportunities. His farm has also become a model farm to learn about dairying and beef cattle production operations.

Institutional and Regulatory Environment

Starting and registering an agribusiness is a laborious process depending on the type of business, and state and local government authority where the business is operating. In the broad sense, the institutional mechanisms for quality control of food and agricultural products are largely determined by demand and supply of these commodities. According to Manir, no strict food safety laws are followed, and the supervisory mechanisms are often seen as rent seeking operations by the officials involved. The responsibility of producing quality and safe products falls solely on the business owners, and if they produce poor quality products, they will not be able to survive in the value chain.

Table 12: Skills based support received

	Business skills	Marketing skills	Technological skills
Self-Made	Learned some business skills through his effort	Learned some marketing skills through his effort	Strengthened technical skills through learning by doing
External Informal Help	Received family support in the beginning	Received family support in the beginning	Received help from a few friends who were producing beef cattle and farmers in the local community

External Formal Training	Studied master's in public administration	Studied master's in public administration	Organized a one-on-one training activity for the running of the processing unit. This included training of his already established staff in the production unit
External Formal Training (Institutional)	Attended seminars and conferences related to beef cattle production and marketing offered by the business association in Nigeria	Attended seminars and conferences related to beef cattle business operations offered by the business association in Nigeria	None
Formal training through own finance	Studied master's in public administration	Studied master's in public administration	None

Technology and market access

Technology for beef cattle production and the dairying operation was available and easy to access for Manir. The technology for the processing unit was provided to him by a government program. In the beginning, marketing was not a challenge either. However, when he expanded into the milk processing activity, availability of milk to produce the yogurt became a problem. The inputs needed for the processing unit had to be procured from outside his farm and he had to develop satellite farms using the youth trained by him in his farm to produce for the processing unit. He also had to develop a marketing channel to sell his processed products. Maintaining the quality of processed products has become a challenge as this requires highly trained and skilled labor which is often difficult to find.

Individual Impact

Manir's focus and commitment to become an entrepreneur led him to start his own enterprise. With the support of a government program and his family he is now a well-respected businessman in the community. He believes that his personal discipline, adaptability, sacrifice, and skill building efforts have significantly helped him. He is seen as a role model for the youth in the community. He is considered a trustworthy partner by those who supply him inputs as well as those who buy his products. People who are operating similar production activities come to him for advice.

Conclusion

Manir was able to start a business with the help of a training program, which taught him the technical skill and a modest support to start his business. His personal commitment, both to expanding his business and acquiring networking skills through further education, helped him focus on the growth of his business and further diversify into dairying and milk processing activities. He also transitioned from a young entrepreneur with minimal support to a full-scale businessman by paying careful attention to the details of his business. A major success factor has been the proximity to Abuja city, where he was able to identify markets for his cattle, milk and dairy products. He was also able to engage with the already-existent dairy value chain to supply milk to the city markets. Market availability and the support received in product aggregation were key factors for his success. Family support was also key, as was his education in helping him effectively engage in negotiations with business operators. He was able to train more youth in his community, both by serving his business as well as enabling them to take up their own entrepreneurial

activities. Through his own network of trained youth, Manir also developed an entrepreneurship ecosystem that helps identify the challenges that his young dairy producers face and handle them through linking them through larger value chain that he is part of.

CASE STUDY 4: Yahya Olubunmi Adebayo – Fish processing and retail fish marketing

Summary

Olu is a fish producer, processor, and retailer. She faced several hurdles in building her business, including a lack of credit. The training she received during her degree program and NYSC helped her tremendously. Having set-up her own fish farm, she now wants to upgrade her business into a medium-scale enterprise.

Background

Olu is 26 years old and comes from Ogun state. She is the eldest in the family of four children and holds bachelor's and master's degrees in aquaculture specializing in fish processing. Prior to starting her own business in 2016, she served as a Fishery Officer in the Ministry of Agriculture at an NYSC program in Abia state. As an independent entrepreneur, she earns an average of 4000 USD per month from her business which is about 10 times more than what she would have earned from a regular job in the public or private sector. Olu's story highlights some important lessons for YE in agribusinesses in Nigeria.

Olu comes from a family with an entrepreneurial culture. Her grandmother ran a small retail business in the neighborhood selling essential commodities, while Olu's mother, a trained nurse, owned a small retail pharmacy that operated during evening hours. Olu grew up experiencing a business culture, and becoming a businessperson was always on her mind. Her mother had some reservations about her entering the processed fish business, but she received full support from her husband. Olu's education in aquaculture and the training she received in the field were likely the most significant factors contributing to her choice of business. She was especially attracted to the potential prospects of selling fish in an urban setting.

Olu started her business by buying a used fish processing oven, using her own money that she had saved from her NYSC salary. However, she quickly realized that she had to expand in terms of volume and quality. Once the business started gaining popularity, the growing market demand motivated her to diversify the product line. Further, her husband helped her to quickly innovate and expand into owning a retail business. The business employs two people who produce dried fish in her processing facility, and another who is involved in packing the produce. She is also engaging one part-time retail helper in her shop, as well as a delivery service (motorbike taxi) to deliver dried fish to customers. She has been using Facebook as a medium to advertise her products and receive product demand through her mobile phone.

Olu's business was originally located in her mother's house backyard, where she had placed the first cast iron oven for drying the fish. Later, she moved it to her apartment where she ran the business for a few months. As the business expanded, she rented a processing facility from where the business operates today. Olu's business started as a "processing business", as she initially bought raw fish from farmers in and around Ibadan and processed them. However, the cost of production was high as raw fish was expensive. The high production cost prompted her to start producing her own fish and adding value through the processing. For this, she purchased an acre of land outside Ibadan with the support of her husband, and established some fish producing ponds. The land she purchased was suitable for fish production, as well as accessible to roads, nearby markets, and Ibadan where her processing facilities and retail store were located.

Olu now has the requisite infrastructure for conducting her enterprise successfully. She is using a charcoal oven to process her fish and has an adequate supply of electricity to operate her processing facility. She

also has access to quality internet, though the cost of internet is relatively high. She has also needed to employ technical skills to operate mobile phones to communicate with her customers.

Occupation before the present venture and the reasons for change

As a student of Aquaculture at the University of Ibadan, Olu was exposed to a series of courses that helped her learn aquaculture technologies in a systematic manner. At the University of Ibadan, the faculty of Aquaculture and Natural Resources has designed an undergraduate program in Aquaculture sciences that requires each graduate to complete practical sessions that provide opportunities to learn about real-world fish processing. During an exposure trip with her classmates to the National Marine Research Institute in Lagos during her undergraduate education, researchers at the institute displayed various species of processed fish including Mackerel and Tilapia.

It was here that she had her ‘business moment.’ Conspicuously missing were the processed products of catfish which was commonly eaten in Ibadan, including by relatively low-income households. Olu asked the researchers why there were no processed products of catfish on display, and whether the same processed products could be made from raw catfish. Not obtaining the answers she was looking for, Olu mulled over this for several days and began researching online for various solutions for processing catfish and its products. Her objective was to ensure that processed catfish could be available throughout the year, including during high market demand season. She was keen to experiment with processed catfish and had several discussions with fisheries scientists in Ibadan on food safety and catfish processing research. This experience increased her confidence in starting her small-scale business.

When Olu finished her undergraduate degree and began looking for opportunities to start a business, she was attracted by the potential prospects of selling fish. With the population of around eight million, the city of Ibadan has a huge potential to become a market for innovative products – and this is what drove Olu toward starting her small-scale business.

Olu is independent minded who sees things differently and did not want to work for another entity. She saw a business opportunity that could be operated from home and could help support her family. With existing skills from her education and NYSC, she had the confidence to start a business. She was also able to benefit from brainstorming ideas with her husband, who holds a master’s degree in animal science. This business has helped her both financially and socially, as she has been able to deliver fish to people who live far away or could not afford it.

Challenges and support received at the beginning of the business venture

Her major challenge was convincing her family – particularly her mother – that processing fish could be a sustainable business model. The second challenge was financing. She needed an oven to process the fish, which was expensive. Another challenge was finding a packaging method that could make the home-processed fish appealing to customers. Finally, her products had to stand out in the market among products from several competitors; thus, she had to work towards alluring customers towards her products with a reasonable price. The following table provides an overview of support received by the YE.

Table 13: Support received by the YE

Source of Support	Financial	Material / In-kind	Technology	Guidance & Training
Family members		None	Received some technical support from spouse who has	Received some business advice from mother and grandmother

			a Master's in Animal Science	
Community	None	None	Received support on understanding community needs in fish consumption from an alliance on promoting fish business	Received technical support through interactions with the community and working with other technical persons in the alliance
Private organizations	None	None	None	Initial interactions with supermarkets were useful to identify their needs and determine the level of packaging needed
Direct Govt. org. & support	None	None	The technology requirements that are available in a larger scale were clear as she worked in NYSC	Learned about the fish industry in the NYSC

As shown in the above table, Olu received support from family members, community, government and private sector, but did not receive any support from IGOs and NGOs.

Details about the business including cost, inputs, outputs, and outcomes of the business

The fixed cost of the initial operation included the cost of the oven and personal labor. The business started as a small needs-based processing operation. Currently, about 75 percent of the total revenue goes to meeting the cost of operation including raw fish production, labor cost, and running a retail store. The revenue from the business is around US \$12,000, and roughly US \$8,000 goes for the expenditure; the net income from the business is thus US \$4,000 per month. Olu used initial earnings to re-invest and help the business grow steadily.

Olu employs three fulltime people in the processing activity – two engaged in processing and one in packaging the processed fish. In addition, she employs a part-time retail shop supporter who takes care of customers when Olu is away. She also occasionally hires the motorbike to deliver the products at the doorstep of customers when needed.

A major fixed input includes the land purchased to run the fish farm. She obtained support from her then-future husband to buy an acre of land in a village nearby. In addition, she invested in three ovens for processing the fish and is currently renting the processing facility. The current operation processes and sells about 1.4 tons of dried fish every month.

The table below provides the inputs, outputs, and outcomes of this venture.

Table 14: Inputs, Outputs, and Outcomes of current business venture

Inputs	Outputs	Outcomes
Fish farm and processing facility	Fingerlings production / fish production	Serving the consumers through the retail store

Current challenges faced by the YE

A major problem is insufficient finance to expand the business. So far, she has been spending her own funds (personal and return from her business) to further grow the business. She is now at a stage where she needs serious investors to support her ambitions. In addition, she requires additional product development skills and is studying more to this end. Additionally, Olu points out that while there is increasing awareness and demand for fish oils as a good source of Omega-3, the extraction of fish oil from catfish and making it palatable is a challenge. She intends to address this in the future.

Apart from additional investments, Olu requires institutional support to expand her business into a medium scale business. Currently, she is not part of any business association or business chambers; Olu feels they are neither well-organized nor well-equipped to meet her unique needs and she is not aware of business association in her locality that focuses on catfish value addition. Furthermore, she must learn about the safety standards and food safety regulations and get certified from external certification bodies to export her products. This requires institutional support from the state government. These food safety regulations and stringent measures while testing her products could be a challenge for Olu, as she is a small business holder with limited capacity, and her current products are not tested by any agencies. As her business grows, she must ensure that it can pass any scrutiny of food safety regulations.

Future prospects

One of the main concerns highlighted by Olu is potential diseases that could affect her fish. Several broodstock are increasingly vulnerable to diseases, which has resulted in decreased productivity. Therefore, she feels that there is a need for continuous public research investment in developing new broodstock. Further, processed fish are susceptible to the contamination that could easily turn into an epidemic in her region, and that worries her.

Olu has big ambitions for her business including expanding fish production, increasing her retail presence, and creating a platform for online sale of her products. She is aware that these things will take time, and that she requires additional land and diversity in her products like producing fish oil. She does not expect the growth to be an easy ride in the near future, due to competition from her peers.

Olu states that quality is still a concern and that she needs to improve her product quality to become more competitive. However, that would require additional investments which she currently does not have.

Impact on the community

Since the business is not yet sourcing its products from farmers, it remains a family enterprise. Although the business is fulfilling the demands of consumers in the community, connecting with other farmers and external markets is still work in progress. At present, the business does not have a significant impact on unemployed youth. However, the business has employed some young women, which Olu believes is part of gender empowerment. As a woman, Olu has been a role model for many young female graduates coming out of the faculty of Aquaculture, at the University of Ibadan.

Institutional and regulatory environment

Olu's business is currently not insured. According to her, the small-scale nature of the business does not warrant insurance, despite specific risks associated with the production of the fish, mainly related to natural disasters such as flooding and disease outbreak. While obtaining the license to operate the business has not been difficult, there are specific time-consuming processes one must go through during business registration. Moreover, Olu's business is currently not supported by any Chamber of Commerce,

despite her ambitions for further development and exploration into new markets. The following table provides an overview of sources from which Olu has received skills training.

Table 14: Skills training support received by the YE

	Business skills	Marketing skills	Technological skills
Self-Made	Learned from her own research	Learned from her own research and networking	None
External Formal Training (Institutional)	Received formal training from NYSC	None	Received training from University of Ibadan and master's degree in aquaculture
Formal training from own finance	Received some training using her own finances	Received some training using her own finances	Received some training using her own finances

Olu's knowledge source for running her business has been her technical training at the University of Ibadan, as well as her master's degree in aquaculture specializing in fish processing. She is continuously updating her knowledge through online research and interactions with different researchers at the university.

Ensuring quality control of the outputs produced by her business is an issue. There is allegedly no formal regulatory system that sets the quality and monitors the processed fish market in Ibadan. Olu herself is making efforts to maintain the quality of her products. In order to expand the business, quality certification will be important. Olu is exploring certification with international certification standards, as the process within Nigeria is not well developed, nor fully trusted.

According to Olu, there are no youth associations for YE to get involved with in Ibadan, as none focus on the fish processing business. Olu is furthermore not a member of any farmers-based organization. Instead, she is part of a community alliance on fish businesses, where she learned about fish demand needs in the community.

Technology and market access

Internet and mobile connectivity are affordable and reliable in Ibadan, according to Olu. Besides getting information on the internet, Olu advertises her products through Facebook. Hence further expansion of her business will also crucially depend on the accessibility and affordability of the ICT infrastructure.

Olu's technology access and skills come from her training at the University of Ibadan. She is also experimenting with several recipes to produce varieties of processed catfish products. She believes she can always go back to learn about, and adopt, innovations. For example, she has successfully adopted the carcinogen-free method of fish processing which avoids the possibility of contamination of processed fish with the fuel used in ovens.

Market and price information is crucial to set the prices and benefit from market unpredictability. Olu relies on her mobile phone to check the prices of raw and processed fish in different markets. She prices her products accordingly to obtain premium value for her products. She also takes into consideration the buying power of low and middle-income households and prices the fish to meet their needs.

Olu has been responsible for developing her own market. Initially, she reached out to retail outlets and supermarkets to help shelve her products for a marginal profit. However, it turned out to be an exhausting operation to receive orders for her products. Instead, she decided to develop her own network of customers, using word of mouth and Facebook to reach customers. In addition, she used the retail outlet as a storehouse to deliver her product to the doorstep of consumers. Thus, her business does not depend on middlemen or other entities for survival, particularly given the use of online marketing.

In addition to processing fish for business, Olu has been recycling waste from fish processing by drying and powdering them. This practice is still in an early stage of experimentation, and the effort to maximize the resources is key for future success.

Individual factors affecting the YE

Olu's curiosity to learn more about the industry and the export markets means she spends a fair amount of time on the internet and her phone. For Olu, the learning process is a constant feature of her growing business. She does not have any mentor at this stage, although she is in close touch with researchers and lecturers at the university.

As the demand for her products is volatile, Olu is constantly adapting prices and her model meet the demand. Olu says she has no interest in working at a different job. Feeling "independent" because of the business is key to her happiness and motivation. While she is gaining business skills every day, she believes formal financial management training would help her address the financial aspects of the business. She also received technical support from her mentors and professors at the University of Ibadan.

Olu is young and confident about her knowledge and the business. She is willing to take risks and explore opportunities within her product line. Her curiosity and willingness to learn and support from her husband have been key to her success. Her customer-oriented strategy and timely service are helping her grow. Her business is highly reliable and is gaining more customers as time passes.

Conclusion

Olu had all the right ingredients to become a successful young entrepreneur. She comes from a family that already helped her develop relevant entrepreneurial skills, and her strong education in aquaculture introduced her to potential business opportunities. She learned improved techniques of processing fish through an educational program that emphasized the development of business skills of the students. She was able to access relevant technology through her university, which served as an incubation centre for her business. As she lives in Ibadan, an urban area with high demand for processed fish, she was able to connect her production and processing system to the retail market that she established. With higher education and access to digital technology she takes orders through her Facebook page and can schedule the processing depending on the needs. Despite these successes, Olu faces challenges of expansion beyond her limited scale as there is no formal institutional support for fish processing entrepreneurs in the Ibadan region. New entrants to this business area may not be as successful as Olu, as there is no entrepreneurship ecosystem or multi-stakeholder platform to support the emergence of a value chain and help young entrepreneurs entering the market. Olu was also mentored by her professors in the university of Ibadan, which is normally not available to rural youth who have no linkage to a formal institution that can provide technological and mentorship support.

Urban Youth Entrepreneurs

The above four case studies focused on rural entrepreneurs. While these stories demonstrate great business potential, stimulating entrepreneurship among rural smallholders can be a challenging endeavor.

This is because many smallholders tend to be ‘survivalists’, who often struggle to take risks, secure capital and access relevant markets (FAO, 2015). In addition, it is often challenging for rural entrepreneurs to employ substantial numbers of youth into their businesses, limiting the potential to scale impact. Meanwhile urban agri-businesses can serve as enablers to facilitate agricultural transformation, for example by strengthening the local food market system (FAO, 2019). Thus, their success may have a direct impact on rural smallholder entrepreneurship and income growth. Understanding the challenges and opportunities facing such urban SMEs can therefore be important in understanding how to promote rural employment more generally.

The section summarizes the key findings from the three interviews with urban tech agri-businesses, categorized according to the main themes as well as including selective quotes.

CASE STUDY 5: Femi Aiki, Co-Founder and CEO of Foodlocker

Summary

Foodlocker’s vision is to become the one-stop shop for farm-fresh foodstuff and grocery items in Africa. By aggregating the outputs of smallholder farmers and consumer goods companies, Foodlocker aims to address and overcome the logistical and infrastructure gaps in the local food value chain. The company was founded by Femi Aiki and Jennifer Okoduwa in late 2017. Foodlocker’s clients range from retailers and large food processors to schools, cooperatives, and hospitality businesses; according to Femi, *‘our juicy spot is to combine both B2B and B2C.’* Maintaining a broad customer base has allowed the young company to better manage risks and seasonality issues. Foodlocker’s data analytics platform also enables demand forecasting, specifically to understand how demand is trending for select products across the value chain. Broken into small chunks for farmers, these data insights translate into more practical planting recommendations for farmers. The notion of influencing value chain actors is thus critical to Foodlocker’s approach. The company began with a team of 6 employees and has since more than tripled; all employees including the founders are aged below 36. Foodlocker currently focuses on ‘strategic markets’ like Ibadan, Lagos, Warri, Abuja, Ogun, Port Harcourt, and Uyo counting around 750 smallholders in their supply chain.

Background & Motivation

Femi grew up on a poultry and vegetable farm in Nigeria. Having attended high school and university in-country, he obtained a first-class degree in Chemical Engineering. Femi also gained academic and professional experience abroad – including an MBA and employment with Amazon UK, which he describes as *‘very entrepreneurial.’* He was motivated to start a business that leveraged tech solutions to tackle business challenges in Africa, operating at the intersection of African demand and supply for food. According to him, *‘so this was the core of what we wanted to solve – to connect the supply side with the demand side and do this with a market-driven approach.’* Describing himself as always open to alternative learning opportunities, Femi was quick to build additional skills like data science. Initial market analyses in the Nigerian food sector highlighted major bottlenecks around efficient food procurement, centered on a disconnect between the demand and supply side for food. According to him,

‘Most people start with supply and say, ‘I’m going to produce tomatoes.’ But we wanted to start with demand. So, our first objective was to understand demand – and then build supply for that demand.’

The first two years of the business were spent on getting to know the market better. In particular, the two co-founders focused mainly on transaction visits to potential clients and sources, in order to identify

potential supply sources, build network with prospective buyers, and understand demand trends of key food players. In terms of individual factors, Femi notes that you need a very open and broad mind to succeed – while international exposure and being a bit adventure also helps.

Institutional Support

Foodlocker has received various sources of support. Femi emphasized the importance of mentorship and introductions to new networks; while securing working capital is always critical, *'it does not necessarily give you sustainable progress...money is not going to guarantee your future.'* Mentorship was helpful in order to learn more about the best practices of running a business, as well as better tackle local market distortions. Mentors abroad in particular provided access to 'superior information' as well as facilitating introductions to prospective clients. According to Femi, this kind of support has been *'more valuable than receiving a couple of millions of dollars.'* Regular engagement with other entrepreneurs was also deemed helpful, for example through Sahel Capital, Founders Factory Africa, the Impulse Accelerator Program, and other business aggregators.

International support has been a dominant thread in Foodlocker's trajectory. For example, the company received funding and entrepreneurship support from Ajayi Solutions, Founders Factory Africa, the Impulse Accelerator Program, Mass Challenge, private Angels and the EU-funded Technical Centre for Agricultural and Rural Cooperation (CTA), amongst others. This was contrasted with the far smaller number of funding opportunities in-country, as many local investors *'want to make quick money and get out, don't understand the sector enough and why it is important to invest in, are risk-averse, discriminatory or just not willing to commit for the long term'*. Meanwhile support from multinational companies like OCP Group were deemed helpful through the Impulse program, as were the likes of CTA who provided data on smallholder farmers and how to build technology solutions for them. Thus, switching their approach from targeting local investors to discussing with international investors gave the team much more traction.

Finally, while working with Nigerian agricultural aggregators has been critical to Foodlocker's business model, the Agricultural Development Programs (ADPs) were considered less relevant. Government backing has also been limited as *'support for entrepreneurship is practically non-existent...regardless of all the noise around diversifying the economy, support for the agricultural sector has been miniscule.'*

Regulatory and Operational Issue

Both positive and challenging government policies were noted. Some positive repercussions of recent COVID-19 policy were highlighted, for example the exemption of food businesses from the lockdown even if overzealous law enforcement agents and agencies like LASTMA would always seek to extract rent from entrepreneurs. Femi also commented favorably on the 2019 Finance Act, which included some promising provisions in terms of tax simplification. Setting up the actual business was also perceived as relatively straight-forward, particularly as the process has been moved online. However, a lot more needs to be done in terms of providing regulatory and tax reliefs and security to farming communities as kidnappings of farmers are very rampant especially in South West Nigeria.

Meanwhile import substitution policies like banning the importation of tomato paste have been a 'double-edged sword' as farmers typically lack the necessary capital, inputs, markets knowledge and know-how to benefit from such policies. Moreover, Foodlocker often struggles with logistical bottlenecks, for example when shipping via Lagos. There is also too little differentiation between micro and medium-sized business, as the latter typically falls into the same category as multinationals from a regulatory requirement point of view. The definition of what a small business is remains antiquated and irrelevant especially when inflation is factored in. A small business will pay the same amount to government authorities for public adverts, in the form of fees for the Advertising Practitioners Council of Nigeria

(APCON). In addition, they are also required to hire auditors and incur other costs (e.g. logistics fees, multiple taxation) that are certainly too high for their small revenue streams. Extortion can also be very damaging; as per Fermi, policy implementation is often a *'people's problem...somebody always wants to collect money somewhere.'* Finally, while the youth entrepreneurship policies on paper look good, in practice they often don't work. According to Femi, *'the government does not really understand business and they're not actually reaching out to us to better understand business.'*

Company Vision and Impact

Foodlocker sees significant growth potential in the food sector; their 2020 target is to enter some international markets, with a vision to reach 20,000 farmers in the medium-term. Foodlocker continues to invest its profits back into the business – including into new technology products that help monitor and influence production of smallholders. The company also plans to explore market entry into North, East and South Africa. Their market expansion is typically driven by sourcing needs, sales targets and/or access to technology and talent. Meanwhile, expansion within Nigeria is decided on a case-by-case basis, as some states are more conducive to entrepreneurship than others.

In terms of impact, Femi emphasized that Foodlocker focuses less on the number of farmers it can support but rather how well these can be supported. In other words *'if we buy from 20,000 farmers, the big question for us is whether these farmers are actually better off than before.'* In addition, they see their unique contribution in actually influencing what and how smallholder farmers produce.

CASE STUDY 6: Affiong Williams, Founder and CEO of ReelFruit

Summary

ReelFruit is a 'first-of-its-kind' snack company that offers dried fruit snacks, made in Nigeria, and sold in the world. The company was founded in 2012 by Affiong ('Affi') Williams and sells products across the market, including to 350 Nigerian stores, airlines, schools, and hotels. ReelFruit also exports internationally, e.g. through e-commerce routes like Amazon. The company pursues a West African regional sourcing strategy, depending on reliability and bulk. Moreover, they look for the highest potential markets and *'backward integrate from there.'* ReelFruit engages a variety of actors across the value chain, which includes buying fruit from large farms, aggregators or directly from food processors (in cases where fruit, like mango, is less frequently grown by smallholder farmers). The company employs 55 full-time and 22 part-time staff, with further expansion expected. As per Affi, *'our growth is outstripping the speed at which we can raise money to expand.'*

Background & Motivation

Affi founded the business at the age of 26. A key motivator for starting her own company was to help solve the unemployment crisis, while further improving a sector hampered by broken value chains and low processing capacity. In particular, her vision was to *'add value to food produced locally, while selling to a global market.'* She was also attracted to the dried fruit space, given that it was novel in Nigeria and a way to add value to fruit produce that would otherwise go to waste. Her main initial focus centered on building market for dried fruit products. Several years later, she conducted primary agricultural development activities with mango farmers in rural Nigeria, which led her to understand how market creation was the key first step to developing the entire value chain. According to Affi, *'it's very exciting that we were the first company to introduce dried fruit into the local market...our learning started in the market and we've been learning non-stop since 2012.'*

Institutional Support

Personal networks have been critical to ReelFruit's success – particularly in the form of financial, mentoring and networking support from Affi's family and husband, an entrepreneur himself. Other entrepreneurial networks have also been helpful: *'I've been lucky to have access to a large pool of professionals and businesspeople in Nigeria, due to my social networks.'* In addition, ReelFruit benefited from business support platforms like Partners in Food Solutions (PFS), which connects African SMEs to senior experts in US-based food conglomerates with the aim to solve specific challenges related to R&D and food safety. Such interactions have been incredibly helpful in preventing costly errors, as well as helping ReelFruit bring products to markets more quickly.

Accessing institutional capital as well as negotiating transactions into the business has been *'really tough.'* She finds that donor support has been most helpful when not attached with too many strings – for example, Affi cites a *'transformational grant'* from IDH Sustainable Trade. Much of the NGO support is often stringently tied to reaching a specific number of smallholders – often cumbersome to measure for a business start-up – as well as over-focusing on trainings. Offering too many trainings can lead to participants signing up for reasons *beyond* learning and development, for example to access per diem fees. Meanwhile, raising sufficient funds to expand the business continues to be a major challenge:

'Money is not everything; but at some point, it really is the biggest constraint. And meanwhile, I've had so much training to become 'investment-ready.' But the problem is finding the investment, not that I'm not ready.'

Affi suggests that foundations and NGOs would do well to explore more innovative hybrid funding models, for example supporting SME funds that provide capital or grants to entrepreneurs. Borrowing from banks also continues to be challenging for ReelFruit, particularly given high interest rates and the need for collateral. Meanwhile, the use of technology platforms like Amazon has allowed ReelFruit to extensively expand their market base.

Government Policy

On the positive side, ReelFruit benefited from a grant from the federal government in the early stages of the business. Affi also pointed out that the government has launched several SME competitions with the aim to kick-start innovation. However, she worries that the government tends to be *'inundated by the scale of the need, quickly realizes the money can't go around – at which point the whole thing grinds to a halt.'*

Meanwhile, intra-African regional trade can be *'impossible.'* This is especially true in the West African Economic bloc, where rules of the Economic Community of West African States (ECOWAS) are barely implemented, and each country maintains protectionist policies. The region is also plagued by poor transport infrastructure, which makes the cost of moving goods across the region for her business prohibitive. Registering a Nigerian product in Ghana can cost up to \$10,000 per product, a hefty sum for a market, a fraction of Lagos'. Her expectations for the African Free Trade Act (AFCTA) are therefore limited, as many existing policies suffer from a lack of coherence and weak implementation. Meanwhile, international support structures like the African Growth and Opportunity Act (AGOA) have facilitated easy expansion to the US market- tax free.

Affi argues that policies improving the micro- and macro-economic climate are most critical, as ReelFruit is strongly impacted by larger market dynamics. For example, the broader business climate impacts the willingness of international investors to enter the market, as well as local demand and export dynamics:

'The government wants to take on the role of an investor, but they're better off just creating an enabling environment for private capital.'

Moreover, though many of the agricultural government interventions are being developed by or with the CBN, Affi argues that this is not really their mandate. The slow implementation speed is also perceived to be a significant challenge, as SME loans communicated by government often take years to bear fruit. While there is 'a lot of talk about supporting farmers', it appears that the government does not have the capacity from a financial or technical standpoint. Moreover, much of the focus is on primary agriculture, for example taking the form of subsidizing loans for rice farmers, which is difficult to scale sustainably. Meanwhile, extension farmers and local agriculture boards often lack the necessary skills and infrastructure to provide meaningful support.

Company Vision and Target

Once a more reliable supply chain and market are secured, ReelFruit's vision is to meet the growing demand by incorporating more smallholders into their value chain. According to Affi, *'we want to work with small farmers and really help them improve practices.'* The company currently tracks a variety of indicators, including local employment, amount of raw material that would otherwise go to waste, and innovation (e.g. introducing manufacturing lessons that previously did not exist in Nigeria). Affi sees ReelFruit's biggest impact in helping create a market for the entire fruit value chain. In her words, *'focusing on building the urban food market or strengthening processors – that's the sustainable way to improve rural livelihoods'*. She hopes that what ReelFruit has done is to demonstrate that there is a workable model around adding value to local agri-produce, which can employ a significant number of people across the value chain. In particular, she underlines the importance of building functioning linkages between the demand and supply side, as well as focusing on tracking quality over quantity.

CASE STUDY 7: Job Oyebesi, Co-Founder and CEO of FarmCorps

Summary

FarmCorps helps food companies source and aggregate quality grains and raw foods from smallholder farmers and other local farmer groups. The company was founded by Job Oyebsisi and two co-founders in 2015/6 and became operational in 2018. While securing demand and purchasing agreements from multinational companies has been the hardest part of the business journey, FarmCorps has managed to confirm several large companies in its customer base since then. Using simple tech platforms like WhatsApp has also been critical for easily reaching and clustering farmers, facilitating procurement for new supply orders. FarmCorps consists of a three-person management team, as well as five salaried employees who focus on tech, sales and marketing. The company ambitiously is seeking expand its reach to five Nigerian states, and reach 10,000 farmers.

Background & Motivation

Job was first inspired to start his own business during his time at Ife University, while studying Natural Sciences. While living in a sub-urban area, he was curious as to why food was so much more expensive in Lagos and cities in general; *'I realized that the agriculture supply chain was broken – and my journey started from there.'* Moreover, Job describes himself as always having been interested in tech and entrepreneurship, particularly with respect to mobile solutions. Another key defining factor was the work experience gained prior to attending university at age 23, while working at a college. *'I saw the challenges facing students – including the difficulties of finding a job – and I knew I wanted to create something for myself.'* As such, necessity became a defining motivation for starting his business.

Institutional Support

Competitions and alumni connections related to Job's university played an important role in the early stages of his business. For example, he participated in numerous funding competitions around topics such as local market creation through mobile technologies. After submitting his agriculture-focused idea to the 2015 Barclays Africa Supply Chain Challenge, Banks, he won a stipend of \$5000 which enabled him to travel to South Africa, meet other entrepreneurs, and fund his first feasibility study. He also participated in a competition organized by Dell Agriculture around finding innovative solutions for food challenges. He learned about many of these initiatives through university, either through marketing pamphlets or former alumni working for multinationals.

Job views mentorship to be most effective type of support. For example, he recalls benefiting from targeted mentorship of Microsoft Nigeria staff, as well as through accessing resources like Microsoft Platform software, training materials and business model canvasses. Moreover, he emphasized the value of transparency in the multinational application process. Meanwhile, he says that *'funds are not always necessary for support to be helpful.'* Government programs were also deemed less impactful for his business journey, particularly given the need for personal relationships and time-consuming application processes. Most of his support originated from abroad, ranging from accelerator programs and impact investor programs to competitions from international banks and tech companies based in Lagos. Family and friends also played an important role in the early stages, i.e. help offset initial costs. Finally, accessing farmer data analytics from donors was viewed as helpful.

Government Policy

Job noted some helpful developments in the regulatory space, for example tax exemption at the federal level for entities earning less than US \$26,000 as well as the improved SME registration process. Moreover, he sees some potential in government policies that encourage local protection. However, a multitude of policy challenges persist, for example multiple taxation at the federal, state and local government.

5. Key Lessons from Case Studies

Based on the review of literature and case studies, several key lessons emerged from the case studies of youth entrepreneurship in agriculture in Nigeria. Young people in Nigeria can operate in a broad set of opportunities in agriculture. First, YE can engage directly with farmers and farmers-based organizations as service providers. Second, YE can operate specific segments of the agricultural commodity value chains. Third, they can collaborate with large scale agribusiness enterprises and serve these in meeting their specific needs. And finally, YE can initiate their own production and processing businesses which can be supported by agribusiness development facilities such as agribusiness incubators.

Insights from the case studies related to policy, institutional, regulatory, technological, and individual challenges; related lessons learned are discussed below.

Policy and regulatory environment

An important policy driver to ensure success for YE is the presence of a national youth policy and fund. In the case of Nigeria, a national youth policy exists. The NYP 2019 discusses strategies for youth involvement in agriculture through improving access to credit/finance, access to land for agricultural purposes, education/mentorship/capacity building, agribusiness supportive infrastructure, and opportunities for youth employment in agriculture. As the policy is relatively new, its impact on rural youth entrepreneurs is yet to be seen. None of the YE interviewed as part of this study appear to have benefited from the policy.

Access to insurance is another important policy driver for YE's success and the analysis shows that this has been a significant challenge for YE. At the country level, access to insurance is below 3 percent (measured by farmers enrolled and cropping area covered) (APP, 2016). While APP has proposed developing new products (e.g. microinsurance, weather-index insurance) and allowing private insurance companies to participate government-sponsored insurance programs, challenges remain. The case studies showed that all rural YE faced challenges in accessing insurance, given the lack of availability of insurance products to minimize the risk of loss to the business due to natural disasters such as parasite infections and floods.

Access to loans and credit has also been a challenge for the YE's. Most of the rural YE from the case studies relied on self-financing or help from their families to start their business. In the past, policies such as ATA had failed to deliver on key policy drivers including access to credit particularly to smallholders (National Association of Nigerian Traders, 2018). There are also reports that schemes offered by big credit agencies like CBN's Agricultural Credit Guarantee Scheme aimed at helping large- and small-scale commercial farmers jump-start their businesses are poorly designed, badly implemented, and difficult – if not impossible, to access (Carnegie Endowment for International Peace, 2019).

Tech entrepreneurs also cited access to finance as their Number One challenge, amid high interest rates from banks and the need to match funding from regional institutional investors. While they too initially kick-started their businesses through self-financing and support from family and friends, the urban agri-tech YE also benefited from international financial support and mentorship, e.g. through multinational, donor and/or incubator support. However, while access to finance was cited as key challenge by all interviewed YE, it is worth noting that the government recognizes this challenge and has proposed some important measures to improve access to credit from the policies like the NYDF (NYP, 2019).

Another key policy driver is a harmonized policy system which requires a strong political and governance structure—in the Nigerian context, corruption and security threats have constrained the impact of certain

policies. For instance, NYSC has been plagued with corruption issues, political threats, and geographical threats which has adversely affected participation rates, increased inefficiencies, and reduced the impact of the program (Council on Foreign Relations, 2017; Oluwalogbon et al, 2019; Chukwuemeka et al, 2014). Notwithstanding this, some of the rural YE from the case studies have benefited from agribusiness and entrepreneurial training received from the NYSC program of the government. In many cases, these helped YE's in thinking towards the direction of becoming entrepreneurs; in addition, specific agribusiness skills acquired during trainings were useful in setting up their businesses. One YE is also providing training and mentorship through this program, in order to develop skills of other youth and encourage them to pursue entrepreneurial ventures.

Receiving market and export opportunities is another key policy driver- in this regard the experience of YE from the case studies has not been very positive. YE have mostly created their own network to find market opportunities with very little support. One YE mentioned that he travelled significantly to obtain better market access, which has also added to his cost burden in the form of higher transport cost. The urban YE mentioned the challenges of trading across Nigerian states and with other countries in the region. Even in the context of export opportunities most YE do not have adequate information regarding export quality standards. FMARD recognizes the failure of domestic agricultural products to meet the quality requirement for success in international markets (Ifeoma, 2019). The government acknowledges these challenges and have provided policy guidelines to improve market access and promote export quality products (APP, 2016).

A formal regulatory system is another key driver to ensure that quality standards set for agriculture produce are met. One YE from the case studies points out that there is no regulatory mechanism which sets the quality standards and monitors the processed fish in Ibadan markets. The APP acknowledges that there is lack of regulations on quality standards for produce inspection, grading, food safety and traceability customized. The policy plans to enforce these quality standards customized to Nigerian conditions for both large and small-scale growers. It also highlights that FMARD would set and enforce quality standards, food safety for markets that ensure emergence of modernized, safe processing zones (APP, 2016).

Three tech entrepreneurs also highlighted both positive and negative aspects of the regulatory environment. Positive aspects included VAT exemption on some food types, some simplification following the New Finance Act 2019, quicker business registration, and some tax easing. Noted challenges included the government's tendency towards primary agriculture support vis-à-vis market system support, poor policy implementation, and 'an opaque taxation system' given little coherence across government. Finally, one YE highlighted the importance of the government's macro-economic climate, which impacts the ease of doing business as well as the likelihood for investors to provide financing for Nigerian SMEs.

Institutional and intermediary organization support environment

Based on the case studies, it is evident that institutional support from Chambers of Commerce or associations – which is a key institutional driver – is lacking. Most of the YE did not receive such support due to lack of awareness about its availability, no business/youth associations focused on fish processing and small-scale fish production, and the lack of efficacy of such associations due to internal politics and a lack of agenda. While a national Chamber of Commerce with affiliated state entities does exist in Nigeria, commerce, these play a limited role in shaping government programs meant to help their small and medium-sized members (Carnegie Endowment for International Peace, 2019). Government officials rarely consult them, and it is also difficult for members of the chamber to get access to financial institutions (Carnegie Endowment for International Peace, 2019). Nevertheless, it may be noted that NACCIMA

recently started a Youth Group with a strong focus on youth entrepreneurship, with initiatives such as collaborating with institutions to provide training and empowering youth in the areas of agriculture and agro-processing (NACCIMA, 2018).

Access to knowledge and agribusiness courses through technical institutions are also important drivers for the success of YE. Formal training received from the government, not-for-profit, and private institutions have been extremely useful for YE. This includes formal education at universities and trainings focused on leadership, management, agribusiness, technology, and entrepreneurship knowledge. Some YE also stated that a key challenge has been getting access to necessary and continuous training at times. Another YE note that providing training at his training center has been a challenge, as most participating YE lack the financial resources to pay for the training. Several national policies including the NYP have proposed strategies to improve access to skills trainings for YE.

Urban tech entrepreneurs stated that access to networks and mentoring was critical. University alumni, networking with entrepreneurs and/or established businesses, as well as mentoring from abroad were key, including through matchmaking platforms like ‘Partners in Food Solutions’. International support structures were more helpful than local ones, particularly in the early stages. Support from local investors has been difficult to attract, while government interactions were deemed cumbersome. Meanwhile, many of the urban YE benefited from fund competitions organized by multinationals as well as other international impact acceleration programs. NGO and donor support were perceived as more challenging, because of the frequently narrow focus on metrics and over-emphasis on trainings, as well as the tendency to provide conditional funding.

Technological and infrastructure environment

Access to mobile and internet services is a key technological driver, as it can help provide access to information and knowledge and build a network for YE. Mobile and internet usage has been useful for all YE interviewed to network, advertise, obtain market information, receive bulk orders, and gain updates on latest technologies. YE have stated that mobile and internet services are affordable. Given this, the use of ICT could enhance the involvement of youth in the agriculture sector and in agribusiness. The national licensing of GSM operators in the year 2000 and provision of credits and grants through NYDF to youth venturing in ICT are positive steps (NYP, 2019). However, there are still huge untapped opportunities in leveraging information and communications technologies to boost competitiveness, innovation, and well-being (World Economic Forum, 2016). For tech entrepreneurs, ICT is even more critical and fundamental to their business models, given that it links food demand and supply. While ICT was typically reliable in urban settings, the interviewed YE noted that accessing large numbers of farmers could be challenging if mobile phones were not widespread in rural areas. Nevertheless, they mentioned the benefits and successful experiences of using even simple tools like WhatsApp groups to connect with groups of farmers.

Access to efficient and affordable infrastructure is a necessary driver for ensure YE productivity. One of the YE pointed out that the cost of production and distribution in the fish and fingerling business are extremely high and need to be controlled. Access to inputs for fish processing was also raised as a concern. It was also highlighted that the productivity of fish production is compromised if innovation to develop new broodstock lags behind. One YE pointed that he has received access to new technology through the local university system and international agencies such as IITA in Nigeria, and other organizations in Africa. Lack of water access and expensive fish extraction procedures were a few other challenges raised by YE.

Based on the literature review, several other infrastructure challenges also emerged including post-harvest losses, poor quality midstream logistics e.g. warehouses, storage, processing systems. The APP acknowledges these challenges and has proposed policies to make fishery/aquaculture inputs available through hatchery development and enhancing fish breeding. It has also proposed policies to promote availability of pest and disease control services and enhance traceability, and irrigation policies to facilitate optimization existing large dams for irrigation.

Several of the urban YE complained of day-to-day operational and logistical challenges and bottlenecks. Intra-African trade was described as costly, while Nigeria's ports are viewed as less efficient compared to neighboring countries. Moreover, road blockages and poor networks made it challenging to expand even within Nigeria.

Individual factors

All YE in the case studies acknowledge that key individual drivers such as ambition, the attitude of not giving up, taking responsibility, receiving some form of agricultural and entrepreneurial education, mentorship have been extremely helpful. Additionally, personal initiatives through networking with businessmen, political affiliates, and through social networks also helped YE in their business expansion initiatives. One of the YE was able to establish contact with the former president of Nigeria Hon. Obasanjo, which has resulted in a joint venture into a larger enterprise management. The willingness to go the extra mile to serve customers has helped the YE to retain their loyal customers to sustain their business. All YE recognize their role as mentors and try and give back to the community by training and mentoring youth interested in agribusiness and entrepreneurship.

The three tech entrepreneurs founded their business in their 20s, after working abroad for some time. They all have a strong entrepreneurial mindset, which played a key role in their business journey. Their motivations ranged from helping solve the unemployment crisis and improving demand-supply linkages, to proving the business case of a novel industry in-country. They are driven by the potential impact on employment and local agricultural market by bringing in innovation. All of the urban YE emphasized the importance of conducting detailed market analyses, to understand the demand dynamics for local food. To various degrees, all YE also acknowledged the importance of initial support from personal networks such as family members, partners, and business alumni, particularly in the starting up stage. The support was in the in form of financial backing, mentoring, and facilitating networks.

6. Recommendations for Stakeholders

Based on the results of the case studies presented above, we present a set of recommendations for a range of stakeholders including policy makers. We end this section with suggestions for developing a multi-stakeholder initiative in a business ecosystems approach.

Policy Makers

NYP 2019 focuses on strategies for engaging youth in agribusiness activities. The document provides broad-based strategies, but most are not accompanied by specific targets. Including these would make it possible to monitor and evaluate policy progress.

Access to insurance has been identified as a challenge for rural YE. It would thus be useful to include strategies on access to insurance for youth participating in agriculture in NYP 2019. This could include strategies to enhance access to insurance for SME entrepreneurs working in agribusiness through government insurance schemes and/or by partnering with private insurance companies.

Access to credit, especially when setting up a business, has also been a challenge for YE. Some of the existing credit mechanisms are poorly designed, badly implemented and difficult to access. Policies such as NYDF to provide discounted credit facilities to YE are a step in the right direction. Design and implementation concerns should be addressed by frequent assessments of loans granted (such as those by CBN) to identify and address emerging problems and strengthen the policy. Involving more local financial institutions would be helpful to improve accessibility to rural YE.

To promote mentorship by YE and help grow their businesses, the government should promote contractual arrangements like the one between the dairy farm YE (from the case studies) and newly established dairy farmers. Under such a contract, the YE can charge for advice to emerging businesses in his or her field and in return be guaranteed supply of certain useful inputs for his or her own business.

A strong political and governance structure requires security, transparency and accountability. The Nigerian government has faced persistent corruption allegations and political threats such as those which have reduced the efficacy of NYSC over the years. Addressing these issues requires strong transparency and accountability policies. This underlines the need for including monitoring and evaluation as part of the policy process. Security threats which have hampered participation in NYSC should be addressed by taking strong safety measures in and around NYSC sites as well by ensuring that there is access to safe transport there and back.

ICT including mobile and internet services have been useful for all YE to network, advertise and get market information and updates on latest technologies. It is therefore important to continue to tap into the potential of ICT and improve local penetration at low cost. Efforts are already underway in this direction. Challenges remain in other areas of infrastructure support. They include the lack of advanced fish breeding techniques, lack of water access to meet localized needs, post-harvest losses, poor-quality midstream logistics and lack of cheap inputs for fish production. Policy makers need to increase encouragement of agricultural innovation and minimize these infrastructural constraints. Some efforts like the Agro Processing, Productivity Enhancement and Livelihood Improvement Support (APPEALS) Project are already underway. This project is being implemented by FMARD in collaboration with the World Bank and other stakeholders; its objectives are in line with the APP (World Bank, 2020). In particular, the aim is to enhance agricultural productivity of small and medium-scale farmers, improve value addition along priority value chains and provide infrastructure support to agri-business clusters (World Bank, 2020).

Market access has been a challenge for YE due to limited support from the government and other associations such as Chambers of Commerce. There needs to be an increased focus on improving market access for all YE, including smallholders living in rural areas with limited transportation access. The linkage between policy makers and Chambers of Commerce, and between Chamber of Commerce and YE also needs to be strengthened. Policy makers should involve Chambers of Commerce in the policy process, in order to better understand YE concerns and realities. Chambers of Commerce or associations should also improve access for YE and focus on providing information to YE based on local needs.

One case study highlighted how a small business with limited knowledge and resources was able thrive because of the presence of a well-established value chain. The government should focus on developing strong value chains and improving their access to YE.

To create export opportunities for YE, international quality standards need to be met. This is currently often not the case. Policies need to increase incentives for YE to produce export-quality wares, while also improving rural YE access to export markets.

The regulatory framework needs to be strengthened by introducing quality standards and monitoring measures for YE agricultural products. Quality standards and monitoring mechanisms for produce inspection, grading, food safety and traceability need to be customized to specific Nigerian conditions for both large and small-scale growers. This is important to ensure that products are competitive in domestic and international markets.

To ensure adequate skill development opportunities for YE, policy makers should focus on creating programs which i) introduce the concept of entrepreneurship which helps young individuals to consider it as a possible employment pathway ii) cover broader entrepreneurial topics including financial and business management and leadership, and iii) meet localized/specific training needs such as for fisheries in particular regions. The government should continue collaboration with universities, the private sector, NGOs, development organizations and existing YE to open further entrepreneurial centers which can provide free or subsidized training. One of the case studies highlighted that a very small proportion of youth who received entrepreneurial training went onto pursue entrepreneurial venture. For programs focused on specific entrepreneurial training, selected youth must be self-motivated to venture into an entrepreneurial activity. It is also imperative to follow up with participants after training to help them set up and sustain their businesses.

The general perception of agriculture as a productive form of employment is not very positive. Continued efforts must therefore be made to improve youth motivation, incentives, skills and mentorship, and to increase public awareness of the immense benefits of agriculture for youth and the country as a whole.

Several of the urban agri-tech YE noted the importance of improving the macro-economic climate, to attract more international investors. They highlighted that government support programs typically focus on primary smallholder agriculture. It could be helpful to broaden the focus and support urban agriculture e-commerce businesses, which seek to link demand to supply. Urban agri-tech YE also noted that applying for government funds is very time-consuming, with the need for several in-person meetings. These are often in Abuja, meaning a long journey for many YE. The process also lacks transparency. There seems to be potential for simplifying the application process and running more of it online.

NGOs and Development Organizations

NGOs and development organizations have a significant role to play in providing training and financial support to YE. NGOs and development organizations working at grass-roots level can assess local entrepreneurship training and financial needs. Institutions like YISA and the World Bank currently provide such support through collaborations with educational institutions, government and successful YE who are willing to provide mentorship.

Development organizations should continue capacity-strengthening. The FAO and ILO do so for YEAP, strengthening state and federal capacity to provide an enabling environment for youth to engage in agriculture profitably (FAO, 2017). Such institutions can also help strengthen the capacity for monitoring and evaluation of existing policy and programs focused on YE. They can additionally help with advocacy to increase public awareness of the immense benefits of agriculture.

All the urban agri-tech YE highlighted the importance of mentorship. To be useful, advisory support must be sustained and targeted around a specific business challenge. YE noted that NGO trainings can be helpful but are not alone sufficient to strengthen youth entrepreneurship. Many entrepreneurs apparently attend the same training several times, sometimes just to collect per diems or for other inappropriate reasons.

Some urban YE said that highly conditional NGO funding can be challenging. An example is the practice of restricting funding to a certain type of expense and/or linking it to specific impact metrics such as reaching a certain number of farmers. YE suggested that support for start-ups could benefit from a more holistic and long-term approach, for example with more flexible funding. Some YE mentioned the value of NGOs sharing data and research on smallholder groups, as well as supporting farmers in growing certain crops through improved techniques. This suggests that there may be interesting opportunities for NGOs to partner with urban YE businesses. The NGO could focus on the supply side (i.e. supporting smallholders with particular crops), while the YE agri-businesses would focus on the demand side, securing the smallholders a market.

All of the interviewed urban agri-tech YE benefited greatly from spending time abroad. They found this helpful both for gaining experience and useful skills and for accessing potential investments for their start-ups. Encouraging international exchange programs for high-potential YE could be a useful way to support local agricultural entrepreneurship.

Private sector / Entrepreneurs / Businesses

YE need to undertake personal initiatives to network and expand their business. Establishing contacts with businesspeople and other affiliates can be extremely helpful. YE should collaborate with each other by forming associations where they can share information, conduct trainings and network. YE should continue investing time in their roles as mentors to potential entrepreneurs and other community members working in the agriculture sector. Through mentorship and other channels, successful YE should also promote the benefits of agriculture for youth employment.

One YE in the case studies suggested a franchising model among YE in Nigeria, which has great potential. Existing YE can train other youth and help them set up their own small business. Since the new YE will need support in the initial period, the YE mentor can provide the newly trained YE with relevant inputs from his/her business venture as well as continued support and guidance for a fee. This model can be extremely successful especially in areas where organized public sector support is missing.

Multinationals: All the interviewed urban YE highlighted the value of mentorship and/or financial support from multinational businesses operating in Nigeria. 'One-on-one' advice from a multinational employee around a specific business challenge was particularly appreciated. Where this is not possible in person, online alternatives include the volunteer advisory platform 'Partners in Food Solutions.' Multinational business competitions and access to superior techniques such as business model canvasses were described favorably. International businesses' support for youth should be encouraged.

7. Concluding Remarks

This report brings together a set of case studies of rural and urban youth entrepreneurs in Nigeria. We reviewed the literature on youth employment and entrepreneurship in Nigeria to help us understand youth policies, strategies and institutional support for youth entrepreneurship development. Case studies of local YE then helped us analyze the issues, constraints, challenges, opportunities and solutions for their participation in agribusiness entrepreneurship. Finally, we developed a set of recommendations for Nigeria based on the drivers of youth entrepreneurship at policy, institutional, technical and individual levels.

An overview of youth unemployment in Nigeria underscores the need for productive avenues to gainfully employ the growing youth population. As identified by the national government, there is a strong case for employing youth productively in the agriculture and agribusiness sector. A potential route is to help young people build entrepreneurial agribusiness ventures. The public, private and non-government sectors as well as donors have been supporting youth with skills training, financial resources and access to technology.

The YE case studies combined with existing data and literature highlight key challenges that remain at the policy, institutional, technology, infrastructure and individual levels. Accomplishing the twin aim of food system transformation and effective youth involvement in that process will require Nigeria to take several key steps. These include continuing efforts to improve infrastructure and technology access, creating and upholding regulatory product quality standards, improving YE access to credit and insurance, monitoring and evaluating policies and programs, and providing access to adequate and affordable education at educational and training institutions.

The results presented can be useful in terms of engaging policy makers and program managers at the country level for further refining their interventions. Developing more evidence in the context of other developing countries which are in various stages of development will help in the cross-country comparison of the findings and lessons sharing. Additional studies are currently underway for Bangladesh, India, and Indonesia, to enable the comparison of similarities and differences in approaches and outcomes.

Moreover, the Nigeria country cases presented here provide several insights for future research. First, they help identify evidence and knowledge gaps in developing policies and programs aimed at youth entrepreneurship in Nigeria and in other developing countries. In particular, understanding the processes through which youth policies and strategies are developed are key for defining systematic ways of their formulation, adoption, implementation, and refinement. Second, the country level ecosystem of youth entrepreneurship should be studied in terms of how such ecosystems could be nurtured in various country and sectoral contexts. Third, additional research is needed on how to link youth entrepreneurship to sectoral policies and develop multistakeholder platforms to implement them at the national and decentralized levels. Fourth, while imparting appropriate technical skills to youth, assessing the needs for associated investments to make them successful for youth entrepreneurs requires additional research. Finally, the role of continuous dialogue and consultation with youth in refining youth entrepreneurship interventions cannot be overemphasized.

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Appendices

Appendix I: Images of YE Steve Okeleji

Image 1: Steve conducting a training for other YE



Image 2: Image of a fishpond



Appendix II: Images of YE Yahya Olubunmi Adebayo

Image 1: Olu with her business products



Image 2: Olu with her certificate of achievement



Appendix III: Images of YE James Ogabo

Image 1: James's training certificate

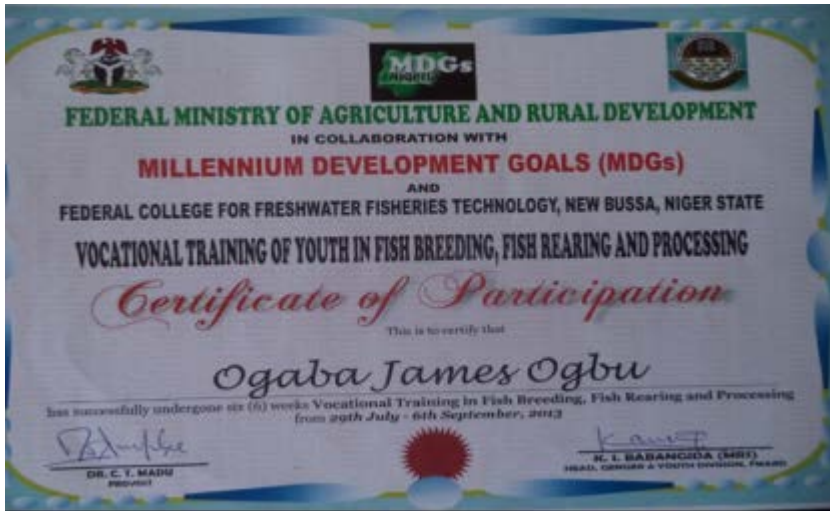


Image 2: James's conducting a training and this picture shows him doing a process demonstration



Image 3: James's training local youth from state youth services



Image 4: James's during a field trip with his youth trainees



Image 5: James's during a training and information sharing session

