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WHITE PAPER

Policy and Investment Priorities to Drive a Vibrant Value-Added Food Economy in Africa

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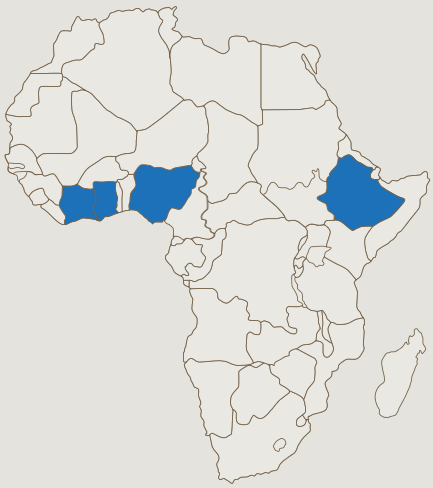
VALUE ADDITION

A change in the physical state or form of the raw food commodity (such as milling wheat into flour or making strawberries into jam). Also, the processing of a product in a manner that enhances its value. e.g. packaging of a food product.

- United States Department of Agriculture (USDA)



CÔTE D'IVOIRE
Largest exporter of cocoa beans and unshelled cashew

GHANA
2nd largest exporter of cocoa beans and unshelled cashews

ETHIOPIA
2nd largest exporter of coffee beans

NIGERIA
4th largest exporter of sesame and cocoa beans

Source: FAOSTAT

POLICY AND INVESTMENT PRIORITIES TO DRIVE A VIBRANT VALUE-ADDED FOOD ECONOMY IN AFRICA

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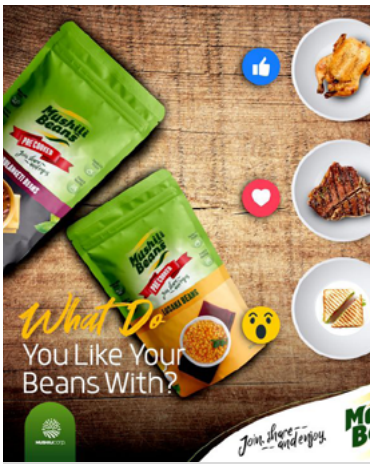
INTRODUCTION: THE CASE FOR VALUE ADDITION

Value addition and food processing are critical for the growth of the African economy, yet several challenges limit its potential to unlock economic growth. **Agriculture provides employment to more than 60% of the population in Africa** and this will increase as more countries diversify their economies. According to the World Bank, **the population of Sub-Saharan Africa is expected to double by 2050**, hence productivity must increase to meet the food security needs of the growing population. **Most households spend between 30-50% of their income on food**, exacerbating food insecurity and poverty. Post-harvest losses are also a challenge. Depending on the value chain, **between 10-40% of crops harvested in the region are lost before they get to consumers**.

A diversified and thriving African economy requires changing the narrative that Africa is a net exporter of raw materials and net importer of finished goods. More than **$35 billion is spent on food importation and this is projected to grow to $110 billion by 2025**. Although many countries in Africa are the leading producers of raw agricultural products, they gain a significantly lower economic value compared to the global average because these raw products are exported and then reimported as finished goods. For example, cashews that are roasted can gain up to five times the value of the raw cashews. The same applies to coffee, which gains nine times its value upon roasting, packaging, and retailing. Yet minimal processing is done within Côte d'Ivoire (CDI), Ghana, and Ethiopia, which are the leading producers of these raw commodities. Value addition could increase the margins from agricultural products by four times, doubling the average income of the smallholder farmer for export commodities such as coffee and cocoa. The trends in importation clearly highlight the exponential growth in demand for value-added agricultural products. This demand can be attributed to urbanization, consumer demand for convenience and variety, the emergence of retailers, globalization and cross border trade, and policy reforms. Value addition and processing can serve as a panacea for Africa to feed its rapidly growing population, create jobs, sustain the livelihoods of its citizens, and build



formidable economies. It ensures harvested crops and livestock are storable and accessible all year round, food prices are stable, and the value of food commodities is increased thereby providing a reliable market for smallholder farmers.

We recognize that the African agricultural landscape is heterogenous and policies may require adaptation across the various African countries. We have encountered several promising and innovative policies and we have highlighted six priority areas that bear the greatest potential to unlock a competitive value-added food economy:

1. Strengthen local supply chains for raw material and finished goods
2. Expand financial incentives/disincentives and favorable fiscal policies
3. Enable ease of doing business and policy consistency
4. Invest in infrastructure and public goods to create favorable conditions for growth
5. Educate and build human capital to provide services
6. Encourage research and innovation

The objective of this policy paper is to catalyze action by proposing policy pathways and investment priorities for a value-added food economy. Using case studies, we provide an illustrative insight into policies, practices, lessons, challenges, and opportunities that will position the African food economy for growth. For over a decade, Partners in Food Solutions has stengthened value addition in African countries by working with over 300 food processors. By sharing practical experiences and insights from our clients and ecosystem partners, we hope this paper will serve as a resource to national governments and policymakers, donors, international organizations, investors, and the development community.

ABOUT PARTNERS IN FOOD SOLUTIONS: Partners in Food Solutions (PFS) is a nonprofit consortium of seven world-class companies in the food industry that work to increase the growth and competitiveness of entreprenurial food companies in Africa. We address the holistic needs of our clients by linking highly skilled corporate volunteers from our consortium with promising African entrepreneurs. In doing so, we improve access to safe, nutritious, affordable food and promote sustainable economic development across food value chains – from smallholder farmers to consumers.

PRIORITY 1: STRENGTHEN LOCAL SUPPLY CHAINS FOR RAW MATERIAL AND FINISHED GOODS

Most industries need a reliable supply of quality inputs to be efficient and profitable. A consistent, high-quality ingredient supply is a commonly cited challenge. Local supply chains are truncated and unreliable in quantity and quality, resulting in higher transaction costs if sourcing from farmers or middlemen. In many cases, companies operate below their capacity utilization which reduces their margins, while others are unable to fulfill orders due to delays in sourcing inputs. These challenges are sometimes value chain specific for example, in Ghana the demand for maize exceeds its supply due to its multiple applications in brewing, livestock feed, and corn soy blend (CSB); while fruits are abundant for processing.

"To be viable, and eventually profitable, a processor needs sufficient throughput. If this falls below 50-60% of capacity utilization, most processors will struggle."

- Daniel Mwape, PFS Zambia Program Manager

Another concern is the prices of imported raw materials or finished goods are often more price competitive than locally produced alternatives. For example, Côte d'Ivoire, the leading exporter of cocoa, imposed a 35% import duty on finished cocoa products, yet, imported chocolate products are still about 25% cheaper than local brands. This is often due to higher cost of the input, higher supply chain transaction costs in the form of middleman markups, logistics and storage costs, and lower economics of scale.

One example is the peanut used in the production of ready-to-use therapeutic foods (RUTF), a specialized food used in treating malnourished patients. Although Nigeria is a leading producer of peanuts and is a significant consumer of RUTF in Africa, peanut butter is imported for RUTF production due to food safety and quality issues. The permissible aflatoxin level is 10ppb (parts-per-billion) and the majority of the locally produced nuts exceed this limit. Therefore, it is more feasible and cheaper to import peanut paste than to source locally.

POLICY PATHWAYS

1. Invest in Inputs, Mechanization and Technical Assistance: Provide farmers with subsidized quality inputs such as fertilizer and seeds especially for high demand commodities. This should be augmented with extension services and training on pre- and post-harvest handling and storage techniques that reduce food losses and spoilage. This technical support will

CASE STUDY: ONE DISTRICT ONE FACTORY (1D1F)

In 2019, the Ghanaian government introduced a policy called **'One Distric One Factory'** (1D1F). This policy involved identifying districts based on its comparative advantage to produce raw materials, and supporting value addition industries to operate within these districts to ensure proximity to the raw material. The 1D1F policy is anchored within the government's industrial transformation agenda to create employment especially in rural areas, increase foreign income, and encourage value addition and industrialization. Although not solely focused on the food sector, processors including five PFS high-potential clients have benefited from the program (Mass Industries, Vestor Oil, Yedent, Premium Foods and Ekumfi,).

A 'planting for food and jobs policy' was also introduced to augment the 1D1F policy. The Ghanaian government provided subsidized fertilizers and seeds, and extension services to enable farmers to increase their productivity. These integrated policies helped curb raw material shortages in relevant value chains and ensured a robust local supply chain to meet the needs of a value-added food economy. This policy also reduced logistical cost and encouraged community development through rural farmers.

You will see that we cite 1D1F as an example throughout this paper. It is a comprehensive policy that integrates the several priorities that we explore in this paper

CASE STUDY HIGHLIGHTS

Government interventions to strengthen local food supply chains must be robust involving long-term, integrated, and complimentary polices as seen in the case of the 1D1F policy. These supply chain policy options must seek to exponentially increase the productivity of primary producers, provide supply chain linkages between the farmers and intermediaries, and create a demand for locally produced finished products. Any approach should be a combination of technical assistance, input subsidies, infrastructural investment, and trade and border policies.

CASE STUDY: MACADAMIA NUT EXPORT POLICY

In 2013, the Kenyan Government in a bid to stimulate local value addition prohibited the exportation of raw macadamia nuts.

Section 43 of The Agriculture and Food Authority Act No. 13 of 2013 in Kenya prohibits the export of Macadamia nut as a raw material, must sell as semi-processed.

The introduction of this policy reduced price distortions and hoarding, and stabilized the price and availability of raw macadamia nuts. Following the introduction of the policy, the cost of raw macadamia nuts reduced by 50% (from $1.5/kg to $1/kg).

enable local primary producers to meet the requisite quality, varieties, volumes, consistency, and timing needs. Agricultural mechanizations should also be prioritized to increase yield.

Several African countries have these mechanization and extension policies in place, however, lack of investment in implementation has limited impact. One District One Factory policy (see page 5) is a example of a policy incentive to boost primary production.

2. Strengthen Local Food Safety System: Many consumers perceive imported food to be of a higher quality than locally produced foods, this can be attributed to the weak regulatory framework, non-implementation of food safety standards, frail traceability, and food fraud (counterfeiting and adulteration). Also, there is a double standard between the quality of the food that is exported and what is consumed within the continent. Government should strengthen the national food safety control system to instill trust in local consumers and the international market. This will involve effective inspection and monitoring of registered businesses and products, equipping regulatory labs to routinely test products for compliance, supporting businesses to produce quality products, and improving how regulators investigate and resolve public complaints.

3. Require Government Ministries to Provide Transparent and Reliable Commodity Production Data: Government entities and agencies should measure and report their current local food production capacity for each value chain. In many cases, the data available on the quantity and location of agricultural commodities are often obsolete or inflated. This lack of information inhibits growth of the sector because businesses cannot adequately plan. Governments should invest in real time data collection and create vetted data hubs or directories for commodities. These data hubs should capture the quantity, location within the nation, and the contact details of suppliers. Investing in collating reliable data sends a market signal that the country will have a robust value chain to cater to any private sector investment in value addition.

"When we were setting up our fruit business, we were told that a particular region in the country had so many mangoes and pineapples that would exceed our needs. In fact, they said there was a glut every season. However,

months after we started production, we realized that local production of the desired fruit variety was not sufficient to run our factory, so we had to import from the neighboring country. The data on the government website is based on perception, not fact."

- Fruit processing client

4. Promote Locally Produced Value-Added Foods: Africa has historically created global trade linkages for raw commodities, but marketing African value-added foods to the world is the silver bullet. In the last two decades, countries such as Japan and China have set their local cuisine on the world map. They achieved this through strategic storytelling and branding. Creating global awareness of African foods not only creates a demand for value-added foods, it creates jobs for locals and diasporas, and builds cultural awareness and a deeper appreciation for the continent. External marketing should be complemented with a 'buy local' campaign and policy to encourage local patronage. In 2020, the Zambian Government issued a policy directive for retailers to prioritize locally produced products, following the directive, some processors were able to place their products in retail stores such as ShopRite and Pick n Pay. Access to these stores create new markets for value-added local products.

5. Introduce Appropriate Trade Agreements and Border Control Policy Incentives: Governments should consider the appropriate import and export policies that encourage value chain development. The African Continental Free Trade Area (AFCFTA) was introduced in 2020 to encourage regional trade, yet there are numerous barriers to trade. Competition from the neighboring country remains a concern; hence, border controls should be updated to reflect this agreement to minimize smuggling. Smuggling creates false markets which distorts the price of commodities. For example, in Zambia, we found one client that had been disadvantaged by smuggling of cheese. In the East African community, trade protocols allow free trade in the East African market, yet tensions still arise from cross border trade, for example Kenya restricted imports from Uganda, and Zambia extended a maize ban to Uganda. Trade policies can be successful if implemented correctly, the macadamia nut export policy in Kenya is an example. Countries should conduct a comparative assessment before introducing these trade policies. Policies that encourage import bans and substitution should be introduced in a phased approach, where significant investment in value chain development must precede to prevent smuggling. The cassava bread policy and rice ban in Nigeria are considered ineffective. Billions of dollars spent annually to import rice and wheat creates foreign exchange pressure and contributes to the devaluation of the local currency. Since 1982, the Nigerian Government has attempted to mandate all flour processors and bakers to substitute >10% of wheat flour with cassava flour to reduce the importation of wheat. However, the cassava and rice value chains were not developed to produce sufficient quantities to meet the market demand before the policy was introduced. This demand gap encouraged noncompliance and smuggling.

6. Invest and Partner with Farmer-allied Intermediaries: Government and donor investment often solely target smallholder farmers to increase primary production. However, data shows that to achieve sustainable value chain development, farmer-allied intermediaries such as cooperatives, aggregators, producer organizations, and processors are crucial. These intermediaries provide a predictable market for smallholder farmers and stimulate primary production. In some cases, they provide inputs, technical assistance, and finance to farmers. For example, in Kenya, the Dairy Cooperative Act was set up by the government because the dairy industry is dominated by small-scale farmers and pastoralists who might not individually meet the demand of processors. The dairy act encouraged product aggregation and clustering of producers to meet the processing demand. Another example is the 1D1F policy in Ghana, where farmer-allied intermediaries were central to the design of the policy. The policy supported value addition industries to operate within districts that produced raw materials. Farmer-allied intermediaries serve as a catalyst for value addition and supply chain development.

7. Enable Market Forces to Influence Commodity Prices: Market price supports such as tariffs or price caps are considered highly distortionary and politicized. Non application of price control on staple commodities such as maize and other cereals can be beneficial to the value-added sector as it allows fair pricing of commodities. For example, in Kenya the Government set the minimum prices of maize at Ksh2800/90kg. The cost for the processor became less competitive and the price caps favored large scale processors more than their small and medium-sized enterprise (SME) counterparts. Government should consider policies that enable a fair and competitive market rather than regulate prices.

CASE STUDY: ZAMBIA STIMULUS PACKAGE

In April 2020, the Zambian Government through the Bank of Zambia announced a K10 billion stimulus packge to mitigate COVID-19 related financial and economic shocks on businesses. The funds were disbursed via commercial banks at lower interest rates (from 29% to 17.5%).

PRIORITY 2: EXPAND FINANCIAL INCENTIVES/ DISINCENTIVES AND FAVORABLE FISCAL POLICIES

More than half of the food processing clients at PFS identify financing as the primary barrier to value addition and this is consistent with other data sources. The current capital deficit to fund agricultural SMEs in Africa is $80 billion to $140 billion. However, the challenge is not a mere absence of funds but a mismatch between financing products and market needs. Agriculture is generally considered a high-risk sector; therefore, investors and banks implement risk mitigating terms that are often unfavorable to the needs of the food economy. These terms include high interest rates (12-30%), short tenures, rigid credit conditions, exorbitant collateral, and relationship-based lending. Furthermore, the fiscal policies and the macro economy of a country influences local businesses and foreign direct investment. Steep tax regulations can stifle business growth and volatile foreign currency policies can scare investors who can inflow capital but are concerned they may incur losses due to local currency depreciation or inability to exit their position in the currency of investment.

POLICY PATHWAYS

1. Introduce Policies That Encourage SME Lending and Facilitate Access to Financing

In many African countries, loan facilities are skewed towards multinational businesses. Governments can alleviate this by mandating a review of loan terms for commercial banks and state-owned banks. Governments should introduce policies that stimulate lending to the real economy, this includes:

1. Mandating commercial banks to create lending quotas for agribusinesses. For example, the Indian dairy sector has benefited from a policy mandating commercial banks to lend 18% of their adjusted net bank credit to agriculture.
2. Governments should consider administering finance through different vehicles, such as commercial banks or private firms for grants or equity, and state-owned banks for loans. To illustrate, an agricultural credit facility was setup by the Bank of Uganda but delivered through commercial banks, the rates and terms were no different from the commercial loans and the objective for the facility was not met.
3. Loans should accommodate working capital and not just equipment or capital projects. During the COVID-19 crisis, many businesses needed more working capital than capital expenditure to thrive.
4. Adopt alternative forms of collateral such as warehouse receipts and credit notes.

5. Create formidable credit reporting and payment systems to minimize due diligence risk.
6. Underwrite commercial loans.
7. Providing resiliency grants to SMEs with the highest potential to help them scale.

2. Prioritize Farmer-Allied Intermediaries for Investment
Governments and institutional funders should consider farmer-allied intermediaries as strategic partners for value addition and prioritize them for investment. These intermediaries provide a reliable market for smallholder farmers, create jobs, and have a lower risk compared to primary production. One example of this targeted intervention is the 1D1F policy in Ghana that prioritized intermediaries sourcing and adding value to local produce. The Export and Import Bank (EXIM) offered low interest rates with a grace period, they extended a loan guarantee of $10 million to a pineapple juice processor and $1.7 million to a mango processor. Also, all the equipment procured under the scheme were without taxes/duty.

3. Galvanize Investments Through Public-Private Partnerships (PPP)
The agricultural sector needs patient capital which is often not obtainable through debt. Equity and mezzanine financing provide an alternative suitable for growing SMEs. Government can partner with private sector to unlock capital for growth. There are several success stories of pubilc-private partnerships, for example the FAFIN fund in Nigeria, and the African Improved Foods in Rwanda.

One of the cited challenges in equity financing is the shortage of investable businesses in Africa, to solve this, Government can partner with private entities to provide technical support for investment readiness. Furthermore, an investment pipeline should be maintained by the ministries of trade and investment, and should have a list of businesses that have been assessed and trained for investors to consult (see sidebar).

4. Increase Budgetary Allocation for Agriculture
The Comprehensive Africa Agriculture Development Programme (CAADP), anchored by the African Union, involved African governments committing to spend ten percent of their national budget on agriculture. The program, which was introduced in 2003, was geared to drive agricultural productivity, economic development, and food security. To date, the average expenditure on agriculture in Africa is below four percent. We propose a budgetary increase to 10%, however an increase in the budget alone will not be sufficient. Robust monitoring of the expenditure is critical to ensure

FUND FOR AGRICULTURAL FINANCE IN NIGERIA

FAFIN, founded in 2014 and managed by a private entity called Sahel Capital, is a $66 million private equity fund for small and medium-sized enterprises established to accelerate Nigerian agriculture and development. The Nigerian Government invested in the fund via the Federal Ministry of Agriculture and Rural Development, the Federal Ministry of Finance, and Nigeria Sovereign Investment Authority. Other investors in the fund include the African Development Bank, CDC group, the Dutch Good Growth Fund, and KfW, the German development bank.

FAFIN has provided equity and mezzanine financing to local high-potential value addition companies including dairy, cassava, rice, vegetable oil, and shea nut processors. FAFIN demonstrates how governments through public-private partnership can work with private sector and development institutions to unlock capital for a value addition.

CASE STUDY:
AFRICA IMPROVED FOODS (AIF)

Africa Improved Foods (AIF) is a public-private partnership involving the Government of Rwanda, DSM International Finance Coorporation, CDC Group and FMO Enterpreneurial Development Bank. FIF is a $65 million food processing facility that became operational in 2016. As a social enterprise, they process locally sourced maize and soy into nutritious foods for the mass market, the WFP, and the Rwandan Government.

the funds are used to invest in agricultural infrastructure and delivered in a timely manner to the businesses that need them.

"Several announcements are made about SME financing programs, but we never get any funding even after the rigorous application process. Government needs to focus on monitoring disbursement not just budgetary allocation."

- PFS client

5. Create Tax and Levy Incentives for Value Addition
Government should adopt tax policies that can catalyze value addition and local sourcing. Governments should impose a minimum of 25% import tax on final processed consumption goods for commodities that are readily available locally. Conversely, offer attractive tax rates, tax refunds, energy rebates, or duty waivers for plant, machinery, and packaging. In Kenya, food processors are allowed up to 30% claims of electricity cost under specified conditions. This reduces the cost of production and increases competitiveness. Processors in the free trade zone in Ghana and the 1D1F scheme benefit from duty waivers on equipment. Packaging is also critical to value addition, therefore, government can consider removing import duties on packaging for locally processed products.

"Anything that constrains packaging constrains value addition.

- Edwin Gafa, PFS Uganda Program Manager

"The cost of packaging is very high, in fact, the cost of the bottled product in the UK is cheaper than the packaging bottle in Kenya. Although we want to grow the retail packs, we are stuck with exporting in bulk due to packaging challenges."

- Kenyan avocado oil processor

Equipment and machinery are essential for the rapid development of the value-added economy. In Kenya, zero duties apply on food processing equipment such as oil expellers, milling and storage equipment, and this has been beneficial to the sector. In some African countries, plants and machinery are vatable at 14-20%, this cripples businesses that

EODB Indicators: Source: World Bank

need equipment to refine commodities. The import duty on the equipment sometimes exceed the cost of the equipment. Also, introductions of blanket/fixed taxes and levies across the industry can disproportionally affect SMEs. Governments can consider applying different tax bands based on the size and complexity of a company's operation.

"A canning client in Ghana needed laboratory testing equipment to ensure safety and quality of their products. Even though they received a grant to purchase the laboratory equipment, the import duty was significantly higher than the cost of the equipment. This additional cost discourages businesses that genuinely want to comply with regulatory requirements."

- Christian Dedzo, PFS West Africa Director

6. Stabilize Currency and Introduce Progressive Fiscal Policies

Several impact investors who we have engaged are concerned about the macroeconomy and monetary policies in a country. They are likely to invest in a stable economy with predictable foreign exchange rates because they need assurance that their investment will retain its value once converted to local currency. Government can explore currency hedging for agricultural investors and introduce fiscal policies that instill investor confidence.

"We cannot invest in Nigeria, not because there is no opportunity, but we are not sure we will get our dollars back when it's time to exit the investment."

- Impact investor

PRIORITY 3: ENABLE EASE OF DOING BUSINESS AND POLICY CONSISTENCY

The World Bank Ease of Doing Business Index (EODB) is a global benchmark that measures how easy it is to run a business in any country. Most African countries have the lowest scores. The EODB is an important yardstick because it assesses if countries adopt regulation and licensing requirements that burdens entrepreneurs. It applies business environment indicators such as how long it takes to setup a business, access to electricity, tax regulations, cross border trade, and contract enforcement, etc.

Common difficulties cited by food businesses in Africa include over regulation, lack of information, inconsistent and abrupt policy changes, corruption, nepotism, and enforcement hardiness. In Côte d'Ivoire, it takes about three days to set up a company, in other African countries it can take up to three months. These difficulties can hamper the growth of the sector. To drive a competitive value-added food economy in Africa, the government should introduce and maintain policies that makes it easier for businesses to operate and thrive.

POLICY PATHWAYS

1. Harmonize Regulatory Mandates and Licensing

There is duplication of registration and regulatory activities

CASE STUDY:
ELECTRONIC INVOICING IN UGANDA - THE EFRIS SYSTEM

In 2021, the Ugandan Tax Authority introduced a mandatory invoicing system. All Ugandan businesses are required to use EFRIS (Electronic Fiscal Receipting and Invoicing System) to report electronic invoices and sales receipts. Every transaction must be submitted to the tax authority in real time.

Although the EFRIS system is aimed at increasing internally generated revenue, its rollout was abrupt as companies were given less than six months to comply. Many businesses are struggling to integrate the new system and may be fined in the process.

This case demonstrates the need for a staggered or stepwise approach to policy implementation, where businesses are supported with technical assistance and given sufficient time to comply.

The US Food and Drug Administration's Food Safety Modernization Act is an example of a staggered policy implementation.

between the food standards bureau, food and drug agency, local government, and the department of public health and environment. To minimize overregulation and the multiplicity of licenses, governments should clarify roles and responsibilities for each agency. For example, in Ghana, a food processor that obtained an FDA license is also required to get a standard certification mark from GSA for the same product. The same applies to Nigeria, where NAFDAC issues a registration number and SON also requires an NIS number for the same product. Creating a centralized regulator that issues licenses will prevent enforcement contradiction, make it easier for businesses to comply with regulatory requirements, and save the cost or time of multiple licensing and inspection procedures.

2. Ensure Data-driven Policy Making, Staggered Implementation, and Consistency

The policy environment necessary for a vibrant value-added African food economy is quite unstable. Many policies do not reflect local realities and exacerbates the difficulties businesses already face. Inconsistent policies are disruptive, can affect investor confidence, and inhibit the inflow of investment into the food economy. One of the countries we work in suddenly introduced a paperless online system to control entry at the port. This caused challenges and delays at the port. A PFS client that exports to Europe was affected when their 20 foot container of food products were stuck at the port for months. The client lost about $45k-50k from demurrage and reduced shelf life. On paper this was a great policy. However, upon implementation the infrastructure was not in place to support these changes. This example highlights the importance of phased implementation. Other examples are the Kenya dairy regulations, the Uganda electronic tax, the Central Bank of Nigeria's volatile foreign exchange policies where foreign investors are unable to repatriate funds, Uganda's digital stamp which applies to the packaged food and beverage companies (a stamp of 30-50 Shillings must be added per unit, excluding the cost of the stamping equipment, which has led to increased food prices in Uganda). Furthermore, in Ghana, every food analytical test must be done at the government labs. The government labs are not sufficient to service the industry leading to longer lag times and inefficiency. Prior to the implementation of this policy, regional labs or private partner labs should have been in place to meet the testing needs of the market.

Our proposal is for governments to consult different sources of data before adopting policies. Relevant sources of data include stakeholder consultation with experts and industry, risk assessment, scientific research, business surveys to identify

the potential red tape that businesses experience. Also, all proposed policies should be subject to a call for public review and comments before they are enacted.

3. Adopt a Mentoring Approach to Enforcement
A punitive approach to regulation focuses on fines and closures to gain compliance. There are disadvantages to this approach. Businesses are more likely to hide their problems than ask for assistance. Regulators should adopt a mentorship approach to support businesses in fixing their challenges. **The PFS model exemplifies how the right technical assistance and a trusted advisor relationship can help businesses improve.** Regulators should appoint and train food business advisors who will be responsible for helping SMEs to understand the requirements and hand hold them to implement standards. In addition, government should provide simplified information starter packs and mentoring sessions once a company is approved. Good communication of the legal requirement, or when policies are changed, is essential. Free online webinars and information sessions should be offered periodically and information should be accessible online on the agency website and social media handles.

PRIORITY 4: INVEST IN INFRASTRUCTURE AND PUBLIC GOODS TO CREATE FAVORABLE CONDITIONS FOR GROWTH

Value addition in food commodities depend on infrastructure such as good roads and transport network, clean water, affordable energy, internet access, cold chain, laboratory capabilities, effective customs and border control, and security. Without these basics, many agri-food businesses will struggle to attain global competitiveness. In many African countries, the cost of electricity is three times higher than the global average. Ports in Sub-Saharan African are the least efficient globally and it takes more than 15 times the number of hours to ship goods through their seaports compared to OECD (Organisation for Economic Co-operation and Development) countries. Also, smuggling due to porous borders can be unfavorable to local processors.

POLICY PATHWAYS

1. Scale Up Public Investment in Infrastructure
The government has the primary responsibility to provide infrastructure and public goods to its residents. Therefore, government should prioritize investment in critical infrastructure such as electricity and efficient transport networks and border control.

CASE STUDY: STUDENT DESIGN CLINIC

The School of Engineering at the University of St. Thomas (UST) Minnesota, USA, runs a senior design clinic where engineering undergraduates are attached to industry sponsors to work on projects. A panel of academic and industry professionals are then involved in assessing and mentoring the students during the project work.

The design clinic is an example of an industry-led skills development program to give graduating students a real-world educational experience and provide the industry with the opportunity for quality design, prototype development and testing of new products and processes by student groups for free.

This case is an example of how industry can partner with educational institutions to keep students abreast of industry trends and gain practical experience.

CASE STUDY: PFS APPRENTICE PROGRAM

While supporting small and growing food processors in Africa, PFS identified a gap in human capital. Many of the companies did not have the right technical staff to implement the recommendations we offered them. In 2016 we placed our first apprentice, Rhoda Agyeiwaa Yeboah, to a rice milling company in rural Ghana. Within a year of joining the company, many of the recommendations were implemented. The company's revenue grew by 50%, and Rhoda is now equipped with new technical and problem-solving skills.

We have now built out this program and have created a pool of 80+, and growing, talented and skilled food technologists ready to service the industry across Africa.

This case demonstrates how the human capital gap in Africa can be filled by offering hands-on experiences. to graduates.

PRIORITY 5: EDUCATE AND BUILD HUMAN CAPITAL TO PROVIDE SERVICES

There is a need to groom local talent that will drive innovation. The current training and research output of many institutions are obsolete, emphasizes theory, and does not solve contemporary agri-food industry needs. Specifically, there are human capital gaps in engineering and processing technology.

POLICY PATHWAYS

1. Include Industry into the Curriculum Development Committees of Education and Research Institutions

Government should revise curriculum and research to reflect today's real-world industry operations. We propose the adoption of a policy that ensures >35% of curriculum development committee must be represented by industry. Also, a mandatory revision of the curriculum every five years to enable students to stay abreast of relevant innovations in the industry. Furthermore, the curriculum for food science and other agro-related courses should incorporate management, entrepreneurship, and business modules into the curriculum and should be taught by industry leaders.

2. Institute Apprenticeship Programs with Industry

Government should introduce a policy on an apprentice program for young graduates in partnership with industry. This program will involve a one-year placement of graduates to value addition companies (processors, food equipment manufacturers, packaging manufactures, or laboratories). The government will partly fund the program and the apprentice stipend to make it attractive to the host company. There are several benefits of this program. It will provide graduates with practical industry skills and training in readiness for the needs of a vibrant value-added economy. Jobs will be created for the apprentices who may be retained by the host company. Additionally, there will be a skilled talent pool for the value-added food economy to hire from.

3. Ensure All Businesses Have Qualified and Licensed Technical Staff

Many businesses in the agro-related sector prefer to hire casual staff and train them on the job. Although this might be cheaper, if often comes with the challenge of non-conformities and unacceptable practices due to knowledge gaps. In many African countries, to setup a pharmacy you must hire a licensed pharmacist and their license is used for the registration of the business. This type of system should be extended to the food industry. Governments should introduce

a policy where all food processing facilities must hire a qualified and licensed technical professional to run their operation. A similar policy was introduced in the US, under the US Food and Drug Administration's Food Safety Modernization Act, in which a Preventive Control Qualified Individual (PCQI) must oversee operation in a food facility.

PFS has worked with 300+ food processors and we can attest to the incredible impact of having the right technical staff. In most cases, we do not extend technical assistance to companies that do not have the requisite technical staff.

4. Empower Regulators and Extension Workers

The government needs sufficient skilled staff to be effective. In many cases, the ministries and agencies are short staffed, untrained, and overwhelmed with the size of the industry. For example, in Ghana's Food and Drugs Authority the industrial support unit has less than 20 people to support the entire industry. **The current ratio of extension workers to farmers in the region is significantly higher than FAO recommended ratio of one to five hundred.** The government should conduct a human capital needs assessment and hire additional technical staff where possible. Also, the government should engage competent consultants with practical industry experience to design and facilitate the training for regulators and extension workers. In many cases, academics with minimal practical experience are hired for training. This training should cover food safety management systems, analytical laboratory skills, inspection and auditing skills, post-harvest storage, mentoring skills, and farm extension skills so that officers can support farmers to meet the requisite quality and quantity for raw commodities.

5. Facilitate Technical Assistance and Sector-Wide Training for Businesses

Businesses will scale in an enabling environment with the right technical support. Governments should facilitate technical assistance and training programs for businesses adding value to local products. The training should cover technical topics such as regulations, food safety, product development; also, business topics such as accounting and financing, forecasting, sales and marketing, and human resources management. These sector-wide trainings will strengthen their management and operational capacity. This training should be offered once a company is registered, periodically, and during renewals.

The government does not have to do this alone, they can partner with nonprofits like PFS and Technoserve, universities, impact investors, and development institutions to foster an advisory ecosystem designed to support African SMEs in the value addition sector.

CASE STUDY: CôTE D'IVORE SME TRANING

In 2011, the CDI Government, through the Ministry of Industry, partnered with World Bank ECOWAS and the UN to introduce a capacity building program for SMEs. This program, managed by a private company, ADCI (Agency for the Development and Competitiveness of Industries of Côte d'Ivoire), covers 80% of the training cost and 20% of the equipment purchase cost. Furthermore, the supported businesses provide a 40% equity to the government for continuous support and investment.

This case demonstrates how the government can partner with several organizations to offer technical assistance and training to businesses.

CASE STUDY: RESEARCH INSTITUTE IN NIGERIA

Federal Institute of Industrial Research Oshodi (FIIRO) mandate is to assist in accelerating the industrialization of the Nigerian economy through utilization of the country's raw materials and upgrading indigenous production technologies.

However, on visiting the technology and equipment research division, there was no functional contemporary food processing equipment. An officer mentioned significant underfunding and unskilled staff challenges. In addition, the fabrication department could not locally source 304 and 316 grade stainless steel which is the minimum requirement for sanitary food equipment.

PRIORITY 6: ENCOURAGE RESEARCH AND INNOVATION

Investment in Research and Development (R&D) and innovation is critical to attaining a vibrant agri-food sector growth. R&D in the agri-food industry in Africa encounters many challenges including poor funding for public and private research, low uptake of research outputs because they are not demand driven, and lack of technology to commercialize new products.

POLICY PATHWAYS

1. Increase Public Expenditure In R&D

According to the World Bank, the average research and development expenditure across all sectors in Sub-Saharan Africa is low (less than 0.5 % of GDP). Many African countries have industrial research institutes, but they are grossly underfunded, and their research output is obsolete. The value-added food sector is in desperate need of innovation, especially for processing equipment and machinery. The majority of food processing equipment is imported because locally fabricated equipment is frail and repeatedly does not meet sanitary design standards for food equipment. Government should increase the funding to research and technology institutes to enable them to utilize local raw materials, develop indigenous technology, and support the value-added sector. Also, increased funding will enable these research institutions to predict industry trends and provide solutions that are relevant, and demand driven.

2. Sponsor Value-Addition Competitive Grants

Government should use innovation challenges and grants to catalyze local solutions and innovation. The government must partner with the industry to design these competitions to ensure it meets the needs of the sector. Also, to be eligible for grant funding, the solution must have a potential for commercialization. A call for proposal should capture priority themes such as:

- Design and manufacturing of processing equipment
- Scale-up and/or automation of testing and validation processes
- Innovative application of indigenous foods, including displacement of imported inputs
- Innovation in local packaging solutions

3. Establish Fee for Service R&D Centers

Government should establish research centers that will provide services to the private sector on a rent or fee-for-service basis. Ideally, this center should run as a public-private partnership, where the center will be managed by an experienced private-sector partner to ensure profitability and sustainability. The center should have state of the art equipment for bench top trials and pilot manufacturing. The center should offer a wide range of capacities including extrusion, milling, pasteurization, canning and baking.

CONCLUSION: IT IS POSSIBLE

The COVID-19 pandemic has exacerbated the continent's economic and social challenges, therefore transforming the African food system to capture more value is urgent. Fragmented supply chains, unreliable quality and quantity of raw materials, lack of affordable financing, erratic policies and regulations, inadequate infrastructure, shortage of skilled human capital, and outdated research and innovation will prevent the transformation and competitiveness of the African food economy. Therefore, African governments have an opportunity and duty to ensure that they create an enabling environment through policies and investment. We must recognize that industrialization and value addition is central to sustaining economic growth, providing jobs, improving the livelihoods of smallholder farmers, and ensuring people are food secure.

The highlighted case studies and policy options capture practical experiences and insights from our clients and partners. They serve as a resource to governments and policymakers, donors, international organizations, investors, and the development community. Given the heterogeneity across African nations, it is essential for each government to consult stakeholders and conduct a holistic assessment of the policy implications before policies and practices are adopted.

We believe that policy and practice reform is possible but requires a government-led vision, engagement and partnership with other actors in the food sector, and strong commitment to building a vibrant food economy across the continent.

TO LEARN MORE ABOUT PARTNERS IN FOOD SOLUTIONS OR TO ENGAGE IN DIALOG AROUND THE TOPICS DISCUSSED IN THE PAPER PLEASE REACH OUT TO US AT HELLO@PARTNERSINFOODSOLUTIONS.COM OR VISIT OUR WEBSITE AT WWW.PARTNERSINFOODSOLUTIONS.COM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