

# **BOOSTING SMALLHOLDER FARMERS' PRODUCTIVITY TO FEED AFRICA AGAINST THE LOOMING FOOD CRISIS.**

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## **1. Introduction**

The world's 500 million smallholder farmers produce as much as 80 per cent of food in some areas of developing countries and support the lives and livelihoods of up to 2.5 billion people. Smallholder farmers represents the largest segment of farmers in Africa. They understand the challenges of growing food in a changing climate and can offer the world independent diversified farms and food products. With greater support and investment, smallholder farmers have an important role to play in feeding Africa against the looming food crisis.

Smallholder farming systems in Africa are highly diverse due to the heterogeneous nature of Africa's geography, agroecology, socioeconomics, and demography. Consequently, definitions and characteristics of smallholder farming systems in Africa fluctuate depending on context and geographical location. There is, therefore, no conventional or universally accepted definition of smallholder farming systems. The term smallholder is often used interchangeably with family-farmer, small-scale, resource-poor, subsistence, and low-income. Most of the existing definitions are centered on some of the common characteristics of smallholder farmers such as access to land, land size, labor, resource endowment or capital, technology, and market orientation.

The agricultural sector in Africa is generally characterized by a high percentage of smallholder farmers (80 percent) cultivating low-yield staple food crops on small plots with a minimal use of inputs. These farms depend on rainwater, thus subjecting production to the vagaries of the weather. Despite its importance, smallholder farmers productivity remains dismal, undermining Africa's overall productivity and food security. The agricultural sector's productivity in Africa considerably lags other developing regions.

The need to support the smallholder farmers and boost their productivity has become imperative given the recent developments in the global food system that may adversely affect food production in Africa. Boosting smallholder farmers productivity is particularly relevant in the current context of rising food prices and concerns about food security following the Russia and Ukrainian war. The crisis has significantly led to increases in the price of food especially wheat, maize and soybeans imported from both countries. Moreover, the price of fertilizers, an important input in the production of farm products have skyrocketed by over 300% due to the crisis which will further reduce the level of productivity by the smallholder farmers in the coming years if urgent measures are not implemented to address the problems. Despite their role and importance to household food security, the productivity of smallholder farmers is quite low and as a result poverty among African smallholder farmers is very high. Addressing challenges faced by smallholder farmers and improving their productivity has the potential to help in reducing the impact of the looming food crisis on food security in the continent.

## **2. The Productivity of Smallholder Farmers in Africa.**

Important characteristics of smallholder farming systems in Africa exhibit a high degree of heterogeneity, livelihood strategies, population pressures, access to markets, institutions, and agro-ecological conditions. Some common characteristics across these systems can be identified. The use of agrochemicals in SSA is the lowest of any region in the world with, for example, the average farmer outside SSA applying nearly 15 times more fertilizer per hectare than the average African farmer. As a result, yields of both cereals and tuber crops are low in comparison to the rest of the world. For instance, the average maize yield in sub-Saharan Africa is only 50% of the average yield in all developing countries, and 20% of the average yield for developed countries.

Limitations to increased productivity of smallholder farmers in Africa include unreliable and/or poorly distributed rainfall; low and unattractive prices; lack of small scale irrigation facilities; insufficient selection of suitable crop varieties, especially for the marginal areas; pest and disease problems; large post-harvest losses; poor research-extension linkages; poor supply of inputs, especially seed and fertilizers; infertile soils; and failure of the smallholder farmer to adapt to changing environments and adopt new technologies.

Smallholder farmers in most of Africa still produce in agricultural systems characterized by low input and low outputs. Low yield is the most critical factor affecting profitability and competitiveness of smallholder farmers. Furthermore, many smallholder farmers are unprepared to meet the complex demands of agricultural business. Many lack the skills and resources required to engage in commercialized agriculture. Over 80% of smallholder farmers still produce at the subsistence level.

The low productivity of the smallholder farmers in Africa exacts a high human and economic cost. High rates of poverty prevail, especially in major agro-ecological zones. It also makes African agriculture an uncompetitive sector; around a third of all calories consumed in Africa are imported, resulting in a negative net agricultural trade balance. Africa imports food staples valued at about US\$25 billion annually, essentially because food production, supply, and consumption systems are not functioning optimally. The level of value addition and crop processing of agricultural commodities is low and post-harvest losses in sub-Saharan Africa average 30 percent of total production, meaning that the region loses over US\$4 billion each year. Agribusiness activities outside of farming account for 78% of total value added in all agricultural value chains globally, yet this figure falls to approximately 38% in Africa.

### **3. The Challenge of Increasing Smallholder Farmers Productivity in Africa.**

Smallholder farmers face a lot of challenges which adversely affect their productivity and some of which are:

#### ***3.1 Climate Change.***

A major challenge faced by small scale farmers across Africa is how to contend with the effects of climate change in the agriculture sector. These farmers are reporting one or more of the following hazards: high temperatures, droughts, bush fires, floods, soil salinity, and shifts in the onset and end of the rainy season. These have negative impacts on crop and livestock yields and production, food security and livelihoods of

farmers. Thus, farmers need to develop resilience and adaptations to climate variability and shocks such as, irregular rainfall, floods, storms, and droughts in order to increase their productivity. Africa needs to develop and implement sustainable agroecological-based approaches to food production that improve soil fertility and ensure efficient land and water use while adapting to climate change and protecting biodiversity. Climate Smart Agriculture (CSA) has the potential of fulfilling this need. It is a combined policy, technology, and financing approach to achieve sustainable agricultural development under climate change. CSA rests on 3 key pillars of (i) enhancement of agricultural production (ii) adaptation and (iii) mitigation of greenhouse gas production. In addition, good coordination across the agricultural subsectors of crops, livestock, forestry, as well as the water, energy and infrastructure sectors is needed in order to capitalize on potential synergies, reduce trade-offs and optimize the use of natural resources and ecosystem services.

#### ***3.2 Access to Finance (capital assets) for sustainable and adequate food production.***

Access to finance is key to improving the productivity and livelihoods of smallholder farmers. Most smallholder farmers are poor and vary considerably in their productive capital assets (natural, physical, financial, and human). Financial capital or cash is extremely limited, and as such, these farmers are unable to make significant investments to improve production on their farms. This factor makes it difficult for smallholder farmers to obtain the capital they need to buy fertilizer, herbicides, pesticides, and improved seeds.

### **3.3 Poor infrastructures, road network, storage, and marketing facilities.**

Lack of access to good infrastructures limit the ability of a farmer to transport inputs, produce, and to access information. Most smallholder farmers lack storage and processing facilities, and struggle to distribute and market their produce, resulting in high post-harvest losses. Where road and transport infrastructure are undeveloped, markets for agricultural inputs and outputs are often missing or delayed, becoming unreliable for smallholder farmers. This leads to inconsistency in production and supply capacity, and coupled with lack of bargaining power, from poor access to market information, they often sell their products at lower profit margins. In some situations, smallholder farmers receive even less for their products by selling them at their farm gates.

### **3.4 Lack of competitiveness.**

Smallholder farmers are not competitive in international markets because of their inability to meet international sanitary and phytosanitary (SPS) regulations, and product quality certification standards, which are required by the modern retail system. Those who have capacity to sell internationally must be able to export products that meet the minimum standards required by importing countries/enterprises and should be price-competitive in international markets. Without the assistance of private-public sector and donor agencies, it is somehow difficult for smallholders to access international markets in developed countries.

### **3.5 Low technology and innovation adoption rate**

Most smallholder farmers in Africa are still using traditional tools and equipment in their farming activities, thus responsible for their low productivity. The adoption rate of modern technology is still very low among smallholder farmers despite the efforts of public policies and the support of international development partners to raise awareness and the adoption of modern technology. Unless the modern technology adoption rate is significantly improved, the productivity rate of smallholder farmers will not meet the expectations of adequately feeding the growing population of the continent.

## **4. Policy Measures for improving the Productivity of smallholder farmers.**

Raising agricultural productivity and accelerated agricultural growth are commonly promoted as core development strategies throughout Africa, since the majority of the continent's poor depends on farming. In this regard, several initiatives have been developed by both the regional and national institutions to address the issue of low productivity including the Comprehensive Africa Agriculture Development Programme (CAADP), Maputo declaration, Agenda 2063, etc. This is because studies have shown that each 1 percent increase in agricultural productivity in developing countries generated, on average, an increase of 1 percent in Gross Domestic Product (GDP) per capita.

Thus, African Leaders have always manifested their commitment to increase public investment in agriculture and ensure agriculture-led economic growth and development for the eradication of poverty and food insecurity which offer immense opportunities for improving the productivity of smallholder farmers in Africa. The 2003 Maputo and 2014 Malabo Declarations and the CAADP implementation process, particularly the establishment of National Agricultural Investment Plans (NAIPs), provide for stakeholder participation such as farmers' organizations, thereby giving an opportunity to farmers to be involved and seek their own interest in the development planning process. There has also been a renewed interest in agricultural investment from development partners after the 2008 food price crisis. The CAADP implementation process provides a forum for mobilizing and aligning donor support in line with NAIPs. Consequently, there has been an increase in public agricultural expenditure in many African countries participating in the CAADP process. Although public and donor spending is still inadequate, increase in public spending particularly directed towards improving public goods in rural areas (storage and processing facilities, road networks, transportation, communication, education, health, irrigation, and safety nets) are geared towards improving the productivity of smallholder farmers in Africa.

### **4.1 Smallholders in the Maputo, Malabo Declarations and the CAADP Framework.**

Both Declarations include the commitment towards improving the productivity of smallholder farmers. The 2003 Maputo Declaration sets out plans for interventions that will enhance the

productivity of smallholder farmers. Specifically, the position of the smallholder in the African development agenda is implicit in the commitments to:

1. Ending hunger by 2025: doubling agricultural productivity, reducing post-harvest losses by 50%, increasing consumption of local food, and improving nutritional status
2. Halving poverty by 2025: sustaining  $\geq 6\%$  annual GDP growth, boosting public private partnership with smallholder involvement in priority agricultural commodity value chains, creating job opportunities for at least 30% of youth in agriculture
3. Increasing market access and trade opportunities at the local, regional, and international levels
4. Increasing the resilience of agricultural production systems to climate change and other shocks
5. Accountability: monitoring of progress towards achieving the targeted objectives.

The clarification of the specific position and role of the smallholder farmer should be indicated in the National Agricultural Development Plans (NIAPs).

The African Development Bank has also undertaken initiatives to promote the agricultural sector in Africa. The Bank launched the “Strategy for Agricultural Transformation in Africa 2016-2025” in 2016, as part of its Feed Africa initiative and High Five Agenda. The AfDB’s Feed Africa strategy has four specific goals: contribute to eliminating extreme poverty in Africa by 2025; end hunger and malnutrition in Africa by 2025; make Africa a net food exporter; and move Africa to the top of export-orientated global value chains where it has comparative advantage.

Recently, in response to the high food prices and shortage of fertilizers, the AfDB initiated the African Emergency Food Production Facility to support smallholder farmers to increase food production. The Facility will provide 20 million African smallholder farmers with certified seeds, fertilizers and extension services aimed at increase access to agricultural inputs that will boost their productivity. It will also support market growth and post-harvest management. The African Development Bank will provide fertilizer to smallholder farmers across Africa over the next four farming seasons, using its convening influence with major fertilizer manufacturers, loan guarantees, and other financial instruments. The Facility will further create a platform to advocate for critical policy reforms to solve the structural issues that impede farmers from receiving modern inputs. This includes strengthening national institutions overseeing input markets. In addition, it includes short, medium, and long-term measures to address both the urgent food crisis and the long-term sustainability and resilience of Africa’s food systems.

## **5. Sustainable Strategies to Boost the Productivity of Smallholder Farmers.**

So, what can be done to boost African agricultural productivity, particularly smallholder farmers? The eight factors below are drawn from ‘Transforming Africa’s Agriculture to Improve Competitiveness’ – an analysis by the African Development Bank:

### *1. Develop high-yield crops*

Increased research into plant breeding, which considers the unique soil types of Africa, is a major requirement. A dollar invested in such research by the consortium of agricultural research centres is estimated to yield six dollars in benefits.

### *2. Boost Irrigation*

With the growing effects of climate change on weather patterns, more irrigation will be needed. Average yields in irrigated farms are 90% higher than those of nearby rain-fed farms.

### *3. Increase the use of Fertilizers*

As soil fertility deteriorates, fertilizer use must increase. Governments need to ensure the right type of fertilizers are available at the right price, and at the right times. Fertilizer education lessens the environmental impact and an analysis of such training programs in East Africa found they boosted average incomes by 61%.

#### *4. Improve market access, regulations, and governance*

Improving rural infrastructure such as roads is crucial to raising productivity through reductions in transport costs and the loss of perishable produce. Meanwhile, providing better incentives to farmers, including reductions in food subsidies, could raise agricultural productivity by nearly 5%.

#### *5. Make better use of information technology*

Information technology can support better crop, fertilizer, and pesticide selection. It also improves land and water management, provides access to weather information, and link farmers to sources of credit. Simply giving farmers information about crop prices in different markets can increase their bargaining power. It is estimated that mobile crop information services can boost the incomes of smallholder farmers by 10-30%. New technologies that can predict weather conditions are becoming increasingly available to help smallholder farmers improve the productivity of their farming activities.

#### *6. Adopt Genetically Modified crops*

The adoption of GM crops in Africa remains limited. Resistance from overseas customers, particularly in Europe, has been a hindrance. But with Africa's rapid population growth, high-yield GM crops that are resistant to weather shocks provide an opportunity for Africa to address food insecurity.

#### *7. Reform land ownership with productivity and inclusiveness as objectives*

Africa has the highest area of arable uncultivated land in the world (202 million hectares) yet most farms occupy less than 2 hectares. This results from poor land governance and ownership. Land reform has had mixed results on the African continent but changes that clearly define property rights, ensure the security of land tenure, and enable land to be used as collateral will be necessary if many African nations are to realize potential productivity gains.

#### *8. Facilitating the Integration of Agricultural Value Chains (AVCs)*

Driven partly by the growth of international supermarket chains, African economies have progressively diversified from traditional cash crops into fruits, vegetables, fish, and flowers. However, lack of access to finance and poor infrastructure have slowed progress. Government support, crucial to coordinate the integration of smallholder farmers into larger cooperatives and groups, may be needed in other areas that aid integration with wider markets.

The implementation of these sustainable strategies can boost smallholders' productivity and enable them to feed the growing African population in the face of the looming food crisis.

### **6. The Role of Farmers Organizations**

All over the world, Farmers Organizations (FOs) play a fundamental role in supporting the delivery of important services to farmers including the distribution of farm inputs like seeds and fertilizers, agricultural training and education, access to market and finance. Additionally, Farmers Organizations provide institutional support towards the implementation of government and donors assisted programs, such as managing partnerships, facilitating mobilization of resources, and collective marketing. They also empower their members at the local and regional levels by engaging with policy and service providers to create higher level structures and build their capabilities. When supported with favourable policies and programmes, Farmers Organizations have exceptional capacity to redress the failure of a global food system that still wastes one third of the food produced, and fails to reduce hunger, thereby causing food and nutrition insecurity.

The Pan-African Farmers' Organization (PAFO) is a unique continental-scale farmers' platform in the world with a membership base composed of sub-regional Farmers Networks. PAFO is the voice of more than 80 million African farmers integrated into nearly 70 national organizations, unions, federations, cooperatives, associations, etc. PAFO is present in more than 49 countries in Africa with five regional networks operating at the heart of African agriculture. Its members are: East African Farmers Federation (EAFF); Regional Platform of Farmers' Organizations of Central Africa (PROPAC); Network of Farmers and Producers Organizations in West Africa (ROPPA); Southern African Confederation of Agricultural Unions (SACAU); Maghreb and North African Union of Farmers (UMNAGRI).

PAFO has a fundamental coordinating role both with its member networks and with continental and international organizations. It is thus able to facilitate dialogue and cooperation with the various continental and international institutions, but also with financial and technical partners. PAFO is recognized as a reliable and representative partner of African smallholder and family farmers, which provides common positions on issues dealing with agriculture and rural development in Africa. PAFO also contributes to the formulation of projects and the development of the capacities necessary to follow them up.

To effectively play their roles, Farmers Organizations capacities should be strengthened to develop their capacity for policy analysis and advocacy, lobbying, articulation of farmers position on agricultural policies and development of strategies that favour their members. They need the capacity to mobilize resources, develop access to market and technological innovations that will enable the farmers to actively participate in the agricultural value chains and overcome the challenges of climate change and supply chain constraints. Furthermore, for farmers organizations to be sustainable in the current market-oriented and global economy, they must develop an effective management system with a clear idea of identifying opportunities for implementing projects and programmes that will meet the needs of their members.

The implication of the emerging global food crisis is the need for collective action by Farmers Organizations to collaborate and strengthen their voice for articulating their needs, taking advantage of economies of scale. The most common form of collective action is the joint buying of inputs and joint marketing of products. Being able to sell produce in bulk is often a minimal requirement for attracting buyers and securing bargaining power. In addition, controlling the flow of produce is a way for the organization to control quality, and for perishable products, it is a way to process them and thus improve marketability. The opportunity provided by international and regional markets can be adequately exploited through collective action. The recently launched Africa Continental Free Trade Agreement (AfCFTA) has opened great opportunities for Farmers Organizations to cooperate together on how they can facilitate and participate in regional trade in agricultural products in Africa.

There is the need to strengthen the capacities of farmers organisation to provide the needed support and assistance to smallholder and family farmers. The critical areas that Farmers Organizations need capacity enhancement to effectively play their roles include i) resource mobilization (human, finance, infrastructure, facilities, equipment, transport, etc); ii) Leadership development in setting direction, mobilizing members around common concerns, and realizing objectives; iii) Capacity building for effective program management (delivery of services to members, participatory planning and periodic review, etc), and iv) effective process management (staff management, facility management, financial management, fundraising, and networking and external linkages).

Developing these critical areas will enable Farmers Organizations to be more proactive in supporting their members to increase productivity and expand their outputs to meet the growing needs of the ever-increasing continental population, and by so doing contribute to achieving food and nutrition security. PAFO continues to advocate that in Africa, attention should be on the smallholder and family farmers by assisting them to effectively address the multiple constraints that they are facing in order to increase their productivity to feed Africa against the looming food crisis.

## **7. Conclusion**

Smallholder farmers in Africa represent a major economic group that contributes significantly to rural food security and the fight against the eradication of poverty and hunger. The nature and characteristics of smallholder farming systems in Africa are highly diverse and there is no universally accepted definition of smallholder farming. Their productivity is very low and cannot support the rapidly increasing food requirements of its growing population against the looming food crisis.

In recognition of the importance of agriculture, various policy measures and initiatives have been developed by national, regional, and international institutions and development partners to address the challenges that smallholders are facing that are responsible for their low productivity. Some of

these initiatives are the Malabo declaration and CAADP. Furthermore, various institutions have also developed initiatives to support the development of the agricultural sector and the productivity of the smallholder farmers in particular. Despite these initiatives, there is still a lack of adequate investment in promoting smallholder farmers in view of the significant role they are playing in food production in Africa.

There is the urgent need to address the challenges that smallholder farmers are facing, and which are constraining their capacity to improve productivity and produce enough food that will feed Africa in the face of imminent food crisis. In addition to the various strategies enumerated in this paper, the capacity of Farmers organisations needs to be strengthened so that they can assume their roles in facilitating the delivery of important services to their members including the distribution of farm inputs like seeds and fertilizers, agricultural training and education, access to market and finance. The various efforts at ensuring sustainable food and nutritional security in Africa, will not yield the desired outcomes if adequate investment is not made to address the challenges faced by the smallholder farmer.

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