

COOPERATION WITH AFRICA

# Sustainable Prevention of Food Crises in Sub-Saharan Africa

**Ousmane Badiane** (International Food Policy Research Institute)

**Julia Collins** (International Food Policy Research Institute)

**Yasuo Fujita** (Japan International Cooperation Agency)

**David Laborde** (International Food Policy Research Institute)

**Will Martin** (International Food Policy Research Institute)

**Maximo Torero** (Food and Agriculture Organization)

**Rob Vos** (International Food Policy Research Institute)

**Futoshi Yamauchi** (International Food Policy Research Institute)

March 29, 2019



## Abstract

Food crises and distress migration will continue to plague the African continent in the decades ahead unless massive investments are made to make the region's agriculture and food systems more resilient. The G20 should support and invigorate region-wide efforts to: (a) massively expand irrigation systems for smallholder farms to boost agricultural productivity and enhance resilience against the impacts of climate change, (b) achieve a "big push" in infrastructure, technology and finance to develop robust agri-food systems, and (c) enact concerted reforms of agricultural price and trade policies to strengthen trade integration, diversify domestic food supplies, and enhance country-level capacity to adjust to food shortages.

## Challenge

Although the incidence of extreme poverty in Sub-Saharan Africa has fallen from 54% in 1990 to 41% in 2013, the absolute number of poor people has increased from 278 million to 413 million due to high population growth. At going trends, over 80 percent of the world's poor will be living in Africa by 2050 (Thurlow, et al., 2019). Africa also lags behind other regions in non-income dimensions of welfare. After having declined in recent decades, food insecurity has increased again in recent years with the prevalence of undernourishment increasing from 20.7% to 23.2% between 2014 and 2017 and the number of hungry people in the region rising to 256 million (FAO, et al., 2018). Much of the recent rise is on account of impacts of climate change and bursts of conflict causing protracted food crises in several parts of the continent. While the prevalence of stunted children has declined, the absolute number of affected children has increased. Stunting reduces productivity of the future labor force and income per capita. The adverse impact of stunting on per capita incomes in Africa is estimated

to be around 9% (Galasso and Wagstaff, 2017).

Any poverty reduction and food and nutrition strategy in Sub-Saharan Africa needs a strong focus on agriculture. Agriculture productivity growth is crucial for poverty reduction in Africa. Nearly 60 percent of the labor force overall and 78 percent of the working poor rely on agriculture for their livelihoods. There is thus enormous potential for accelerating poverty reduction if agricultural productivity is boosted. In recent years, much of agricultural growth in Africa has been due to land expansion, rather than productivity growth. African countries typically grossly underfund high-return investments, especially in research and development, as well as in mechanization, irrigation, other basic infrastructure and extension services. Only 5% of the region's agricultural land is irrigated. Access to finance for these high-return investments also poses a challenge. Fragmented markets prevent producers from benefitting from intra-country and regional trade and significant changes in policies to promote regional trade, not only by reducing tariff barriers but also by focusing on non-tariff barriers, are essential. While African countries have increased rice imports from Asia at relatively low cost in recent years, prices are expected to rise because of increases in the cost of rice production in Asia (Otsuka et al., 2016). Finally, climate change threatens agriculture and increases food insecurity. Rapidly degrading soil and water points to a challenging production future, especially in a context of climate change. All these factors conspire against food security and income opportunities for Africa's poor, but in addition they can fuel feelings of dispossession and, hence, conflict and forced migration.

The fact that growing demand for food exceeds supply capacity offers major opportunities for Africa's poor and its farm population to break away from poverty and recurrent food crises. Policies need to be targeted to address vulnerability and enhance resilience of rural livelihoods, while substantially reducing the levels of stunting and malnutrition of the region.

## Proposal

In 2018, G20 Agricultural Ministers reconfirmed their commitment to end hunger and all forms of malnutrition, emphasizing that the development of sustainable food systems will also contribute to tackling other challenges like the forced displacement of people. They also recognized that: “A sustainable, integrated and inclusive future for food systems requires our concerted efforts and can only be achieved on the basis of collaboration among governments, international organizations, farmers’ community, civil society, the various stakeholders in the food supply chain and the educational and research communities.”<sup>1</sup>

Such a concerted approach will be essential to fight hunger and sustainably prevent the recurrence of food crises in Sub-Saharan Africa. This Brief proposes that the G20 can promote agriculture and food security and nutrition by stepping up internationally concerted efforts in three priority areas of actions:

- Stepping up investments in irrigation
- Improving incentives and infrastructure for agro-food businesses
- Realigning agricultural trade and incentives policies

### **Targeted interventions to extend the productive season in chronically vulnerable regions, especially in arid areas of Africa**

With between 200 and 600 mm of rainfall concentrated in a few weeks

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<sup>1</sup> Declaration of G20 Agricultural Ministers, July 27-28, Buenos Aires (available at: <http://www.g20.utoronto.ca/2018/2018-07-28-agriculture.html>).

per year in Africa's (semi-)arid zones, massive investments in sustainable small-scale irrigation coupled with value chain development interventions will be required to improve yields and extend the productive season, while creating opportunities for crop and income diversification and providing year-round productive employment for smallholder communities. More diversified production patterns would also make it possible to grow more nutritious fruits and vegetables for income and better diets. The G-20 could promote an initiative to make more investment finance available for these purposes, e.g. through the multilateral development banks.

Dependence on rainfed agriculture limits the period during which African farmers can be productive, presenting a severe constraint to increasing productivity enough to reduce poverty. Semi-arid regions, such as the Sahel, not only experience low annual rainfall, but rain tends to concentrate in short periods of the year. This allows, at best, for a very short productive season. It does not allow farm households to support a year-round living. More broadly, drought forms a key risk factor for food crises. Interventions to increase yields during the limited growing season are not enough.<sup>2</sup>

Studies by the World Bank (You, 2008) and by IFPRI (Xie, et al., 2014) highlight the enormous potential to increase irrigation in Sub-Saharan Africa and that much of this potential is in the form of much more economical small-scale schemes, rather than large dam-based schemes. Even small schemes based on groundwater are likely to require development of policies for water allocation to avoid costly and conflictive races to the bottom.

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<sup>2</sup> For example, the most productive farmers growing groundnuts, a major export crop, in Senegal's groundnut basin show yields of around 1 ton per hectare. With prices around US\$0.40 per kg and average holdings of one hectare, even tripling yields would increase farm incomes only to \$1,200 per year—not enough to lift a family of five from poverty.

Expanding irrigation would extend the growing season in some of the poorest and most vulnerable regions in Africa and greatly raise farms' productive potential. The ability to work more than three months of the year will increase labor productivity with the potential of considerably reducing poverty rates. The stable availability of irrigation water will permit farmers to integrate arboriculture and livestock for year-round income and to diversify into higher-value and more nutritious crops such as fruits and vegetables, resulting in greater resilience and better household nutrition. However, the effects of extended growing seasons reach beyond the farm and help accelerate transformation of the rural economy. The availability of surplus production will enable more rapid growth in the agro-processing sector, and increased incomes for farm households will spur demand for a wider range of products and services, stimulating the rural economy and creating opportunities for off-farm activities.

Although expanding irrigation has costs, the scale of the benefits is much larger. An IFPRI study finds that small-scale irrigation technologies—motor pumps, treadle pumps, communal river diversions, and small reservoirs—are highly cost-effective in semi-arid zones and have large potential for expansion (Xie, et al., 2014). The potential for expanding irrigated areas ranges from 1 to 3 million hectares for the Sahel region and from 20 to 30 million hectares for Sub-Saharan Africa as a whole. Depending on the technology, irrigation expansion would benefit between 113 million and 369 million rural people and produce net revenues of between US\$14 billion and US\$22 billion per year in Sub-Saharan Africa, just for the Sahel region, between 7 million and 30 million rural people would benefit from a potential total net additional farm revenue of between US\$0.3 billion and US\$1.2 billion per year.

The G-20 could play a leading role in encouraging and supporting an initiative that would massively scale up irrigation to expand the productive season and – as spelled out below – facilitate at the same

time increases in complementary investments in extension services, improved farm management practices, and value chain development.

In this regard, the G20 and the African Union, with the support of multilateral financial institutions, could set up a partnership for technical and financial cooperation to facilitate sufficient investment finance is made available to support the irrigation and complementary investment plan, as well as to coordinate of the further actions and call for policy coherence, as proposed in the remainder of this Brief. Accordingly, the Comprehensive Africa Agriculture Development Programme (CAADP) national investment plans would be strengthened and scaled up. The joint financing facility could further leverage other sources of long-term agricultural investment finance and multi-year allocations of international development assistance.

### **Investment finance and technical support to facilitate enterprise growth, efficiency gains and food quality improvements in the growing food processing and distribution sector**

To reap the benefits of agricultural productivity growth from irrigation investments, complementary investment is needed. Sub-Saharan Africa so far has not taken advantage of green revolution technologies, in part because of lack of investments in irrigation and extension systems.<sup>3</sup> First, therefore, it will require improved farm management practices for successful and sustainable intensification, through investments in the capacity of extension systems to promote improved cultivation practices, high-yielding modern varieties and chemical fertilizers. Second, access to credits for smallholder farmers need to be enhanced to facilitate investments in irrigation systems and farm equipment.

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<sup>3</sup> See e.g. Otsuka (2019) for the case of rice production in Africa

Third, supply chain development will be needed for farmers to bring increased production to market. This will require investments to improve market infrastructure and other interventions to better connect smallholders to other value chain actors, for instance, through support to develop and strengthen producer organizations and incentives to (private sector) investments in temperature-controlled storage and transportation and food processing capacity.

Extending the production season and enabling surplus production will fuel the emerging transformation in Africa's food systems, with a growing number of small firms producing processed versions of local staples. This growth is in response to rapidly increasing demand for processed, perishable, and higher-value foods resulting from income growth and urbanization. Research predicts continuing strong growth in overall food demand, particularly for high-value foods. For example, in Eastern and Southern Africa, the share of processed foods in all purchased food is projected to increase from an already-high 70 percent to 79 percent between 2010 and 2040 (Tschirley, et al., 2015). Although some processed food products are imported, traditional staples are also increasingly being consumed in more convenient processed forms, produced by small domestic firms. However, the thousands of one- to five-person domestic firms behind this transformation tend to have low productivity, and face barriers to growth including high costs, limited skills and human resources, low access to land, energy and finance, and lack of reliable access to quality raw materials (Hollinger and Staatz, 2015). As a result of these barriers, small firms are operating at a fraction of their potential. In addition, concerns about food safety and quality are dampening demand for local processed food products (Hollinger and Staatz, 2015). Poor connectivity resulting from inadequacies in transport and communications infrastructure as well as insufficient cold- and dry-chain development are hampering agricultural productivity growth to translate into higher farm incomes and are sources of high rates of food losses (Delgado, et al., 2018).

The G-20 can play a key role in addressing these food security related challenges by fostering international collaboration and strengthening the financial sector policy framework to increase access to finance. Specifically, it could promote concerted efforts to mobilize resources to: (a) significantly expand investment in transportation, market access and distribution networks including cold-chain and dry-chain development to reduce high transactions costs, as well as food losses at various stages of the food value chains; (b) improve integration of local and regional market networks and lower barriers to finance and facilitate access to technology for innovation to allow the nascent local agribusiness sector to continue to expand and secure a larger share of the growing urban food demand, and, in this sense, the G-20 could support the rapid development of the FINTECH agenda in the region by fostering international collaboration and strengthening national financial sector policy frameworks; and (c) facilitate opportunities for skills training (technical, entrepreneurial), especially for youth, to help accelerate innovation and upgrading of food value chains and promote job creation for Africa's rapidly growing young population, so as to structurally improve rural livelihoods and reduce distress migration.

### **Realigning agricultural incentive and trade policies**

Institutional trade barriers constitute substantial constraints for many food producers, as well as exporters and importers. These barriers to trade flows are harmful to food security in Africa and impede the development of competitive agricultural value chains and agribusinesses.

Many countries in Africa continue to implicitly “tax” agriculture by setting prices substantially below world prices. While this is politically attractive in holding down food prices in urban areas, it frequently reduces the incomes of poor farmers who rely on net sales of food to meet their income needs for school fees and other purchases. Many



countries in Africa focus strongly on ensuring that demand for food staples is met solely from domestic supplies or from trade managed by government entities. This policy emphasis on food self-sufficiency can become a source of domestic price instability, for instance, when a drought reduces food supply which then cannot be offset through an increase in imports. A recent study of Zambia's maize policy showed that a precautionary export ban introduced in response to expected reductions in domestic supply caused by the El Niño phenomenon in 2016 in effect increased food insecurity as the trade restriction caused a loss of real income of net sellers of maize, mostly poor farmers (Al Mamun, et al., 2018). Other studies have equally shown that the poor integration of regional markets is leaving Africa's populations more vulnerable to climate shocks as the capacity to adjust through trade to short-term food shortages is limited and domestic food supplies are concentrated in few key staples (Gouel and Laborde, 2018).

Reforms of domestic policies by limiting such restrictions on food trade would help to reduce Africa's vulnerability to output shocks from its largely rain-fed agriculture. To be effective such reforms should be internationally and regionally coordinated. The G20 could support this. The proposed Continental Free Trade Area in Africa could further help countries diversify food supplies, not only by requiring a degree of opening of their markets, but by raising confidence that other countries would make food supplies available when needed.

Improvements in transport infrastructure are also potentially a very important way to increase diversification of food supplies. This challenge may seem impossible to achieve in a reasonable time frame. However, recent World Bank research (Kunaka and Carruthers, 2014) suggests that opening up key transport corridors—many of which are currently being developed—would bring most of the potential gains from a more comprehensive network and would, of course, be particularly beneficial for landlocked countries. Even given these

corridors, however, much more development of secondary rural roads will be needed to ensure that the most vulnerable households gain the enormous benefits associated with access to the transport network.

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