

GLOBAL FOOD INSECURITY: STRATEGIC MEASURES TO SUPPORT THE MOST VULNERABLE COUNTRIES

ABSTRACT

In the past few years, many countries have seen rising levels of food insecurity, although for some of them the situation went beyond insecurity and aggravated into a real crisis, which requires immediate actions. These actions consist of emergency measures to directly support those in need, as well as strategic measures aimed to mitigate the effects of the food crisis in a long-term perspective. In this essay, we focus on some strategic measures, namely, those aimed to support the local production of food in the vulnerable countries. We highlight issues related to financing of the small-scale farmers, technology adoption and information sharing, which are peculiar to agricultural systems in these countries. Finally, we discuss possible solutions which can help boosting the local agricultural production, and namely: the transformation of financial system by integrating informal financial institutions into formal ones; linkage of the existing technologies to the relevant beneficiaries based on research and careful targeting, and creation of an effective vertical communication system within a country.

1. THE ONGOING FOOD CRISIS: WHAT DOES IT MEAN FOR THE WORLD?

2022 was marked by a series of events that shook the world's economic, social, and political order. Invasion of Ukraine by Russia, continued inflation surge, intensified climate changes manifested in severe heat waves and floods in South Asia, and international trade tensions, to name just a few, are among those events. As the saying goes, "it never rains but it pours", so these individual events triggered the deepening of the humanitarian crisis, with food crisis standing at the very center of it.

Food insecurity has persisted in low-income developing countries for a long period of time, although, for the situation to escalate into a crisis it takes food insecurity

to reach extremely high levels. According to the Integrated Phase Classification^a, crisis (phase 3 out of 5) is being declared when households are not able to meet the minimum food needs and, as a result, face high levels of malnutrition. The experts estimated that nearly 11.7% of the global population were affected by acute food insecurity in 2021^b, and these numbers had been constantly increasing throughout 2022. According to the 2Global Report on Food Crises, by the end of the second quarter of 2022^c, more than 205 mil. people in 53 countries were facing severe levels of food insecurity ranging from high malnutrition to starvation. This is a significant 15% increase compared to the end of 2021.

The ongoing food crisis was already in making since the global outbreak of the novel coronavirus (Covid-19) infection in 2020. Due to the increasing numbers of infected people and mass lockdowns, the world saw a sharp slowdown in manufacturing and supply chain disruptions in many industries including food industry and agriculture. This, in turn, induced supply shocks and price hikes of the staples which are the core of our food stability. On top of those economic shocks, the sudden stop of grain supplies from Ukraine that was the major importer for the North African states; destruction of harvests by floods in West and Central Africa; and export bans on wheat, corn, palm oil imposed by India, China, and Indonesia respectively, came up to summarize themselves into record high commodity prices, food deficits, and increased levels of food insecurity around the world.

High commodity prices affected both developing and developed world, although, those suffering the most are countries of Sub-Saharan and North-East Africa, Middle East, and South Asia. Syria, Afghanistan, Yemen, South Sudan, and Democratic Republic of Kongo are among the most vulnerable countries, as the percentage of population facing malnutrition and hunger there is more than 50%^d.

Despite the regional clustering of the food emergencies, the international community regarded the food crisis as a global one, and this is a right thing to do.

^a Integrated Phase Classification (IPC) is a widely accepted classification of food emergencies.

^b The State of Food Security and Nutrition in the World 2022. FAO, IFAD, UNICEF, WFP and WHO, 2022.

^c GRFC 2022 Mid-Year Update. FSIN and Global Network Against Food Crises, 2022.

^d GRFC 2022. FSIN and Global Network Against Food Crises, 2022.

Dealing with food insecurity in vulnerable regions is vital for the global sustainable development and requires shared responsibility and action.

What is currently being done to alleviate the critical situation? Governments and International Organizations cooperate towards four major directions, namely: provide emergency support to the population in affected regions; subsidize food producers; establish secure supply chains; and strengthen the resilience of food systems. For instance, World Bank initiated several programs aimed to support agricultural production in affected regions. They allocated a budget of 30 billion dollars^e for African countries like Chad, Sierra Leone, and Tunisia to cover their imports of agricultural inputs, which are necessary for food production and adoption of climate-smart agricultural practices. As for the staples supply disruptions, thanks to the support of the UN and the government of Turkey, transportation of commercial food exports from Ukrainian ports in the Black Sea is currently being implemented under the so-called “Black Sea Grain Initiative”. Hundreds of tons of grain, food products and fertilizers have already been exported to Ukraine’s import partners including those facing high levels of food insecurity like Iran and Djibouti.

While governments and IGOs cooperate in taking emergency measures to tackle global food insecurity and prevent the catastrophe in the most vulnerable regions, the solution of the core problem requires a long-term strategy towards a complex combination of issues.

2. EXPLORING THE OPPORTUNITIES OF SELF-SUFFICIENCY: AGRICULTURE IN AFRICA

An important element of a country’s food security is intensive agriculture. Countries suffering from high levels of food insecurity nowadays are mainly clustered in Sub-Saharan and North Africa - the regions where engaging in agriculture is associated with many challenges such as poor soils, limited water resources, extreme weather conditions, and economic underdevelopment to

^e World Bank Response to Rising Food Insecurity. <https://www.worldbank.org/en/topic/agriculture/brief/food-security-update>

name just a few. These unfavorable conditions lead to production risks and market uncertainty, and those having to deal with these risks are usually small-scale farmers.

In developing economies of Africa more than half of the population rely on agriculture as a primary source of income, and small independent farmers can make up to 95% of the agricultural production power in some countries such as Ethiopia. Small farmers play an important role in supplying food to the population. What kind of challenges does a typical smallholder face in her daily activities? Let's try to think about it by looking at the following hypothetical example:

Imagine there is a young female farmer Gasira, who lives in the South-West part of Kenya and manages a small 3-acre farm. The farm is located on the land owned by her father, who was adherent of traditional agrotechniques and used to run a subsistence farm to meet the needs of the family and occasionally sell a small surplus to the neighbor households. When Gasira's father could not continue working due to his poor health, she took the lead of the farm instead of him and decided to transform it into a semi-commercial one, which could become a stable source of income for her family in the future. Gasira's plan is to focus on the production of sweet potatoes and maize - produce which show a high demand on the local market.

To increase production next year Gasira must purchase more inputs, such as seeds, fertilizer, and tools as well as to hire workers for sowing and harvest seasons. The prices for seeds and fertilizers went up again this month, so she doesn't have enough funds to purchase the necessary amount. Young woman tried to loan money from their neighbors, but the sums they could offer were not nearly enough. She also didn't find luck in the credit cooperative located in the neighbor village as borrowing money there required multiple guarantors from the village, which Gasira could not secure.

Gasira could try getting a credit at a bank if she went to the town. Unlike many other women living in the same village, Gasira has got a basic school education, so she can read and is good at calculations, but she does not have a clear idea about how a bank loan works and what are the terms that bank can offer her. She has heard there were banks that offer loans to people engaged in agriculture, although, the young farmer doesn't know where exactly she can find such a bank. Her farm is located remotely from the economical center of

the county and going to the town will be very costly. Gasira is discouraged as she doesn't have enough information at hand to act and get a loan.

Increasing production next year is not the only Gasira's concern. More than expanding production, she is worried about saving her harvest of corn this year as a draught is being predicted for the next month. The young woman is disappointed that recently the draughts have been occurring more often in her region. What Gasira doesn't realize is that this drought is not just another whim of the weather, but rather a consequence of the climate change caused by human activity. She doesn't have enough understanding nor enough time to think about it. Instead, she wonders how to save her harvest from the coming draught this year and those to come in the future.

The young farmer talked about the draught to her neighbor and was told that there were expensive heat-resistant varieties of corns seeds sold in the north of the country, which, by the words of the neighbor, "will, for 100%, survive any draught". Gasira doesn't have access to the Internet or other information sources to check the reliability of this information, but since these seeds worked so well for other people, she is very optimistic about spending more money and getting them for the next year's sowing.

Tonight, when Gasira goes to bed, her mind will be full of thoughts about all those obstacles she has to overcome to achieve her goal and expand her farm's production.

How can we support Gasira's dream and make things easier for her?

From the position of a policy maker, it is necessary to provide a comprehensive support to the small farmers to help them deal with the current challenges related to the spikes in agricultural input prices and disruptions in supplies, as well as facilitate building a resilient production system which will secure food supply in the long term.

2.1. Availability of Credit for Small-Scale Farmers in Africa

Farmer's financial constraints affect every stage of agricultural production starting from inputs purchasing and ending with output distribution. Getting a loan to cover the upfront costs of inputs is a normal practice for farmers around the world, especially nowadays when the prices for seeds and fertilizers continue to rise and many farmers don't have enough retained capital to fund their

next years' sowing. But how is the situation with crediting small-scale farmers in the developing economies of Africa and Middle East?

There are commercial banks that provide credit for large-scale farmers but are reluctant to provide funds for small farmers due to their high riskiness and lack of physical collateral to secure a loan. Many banks don't offer financial products specialized for agricultural activity. On top of that, farmers located in remote areas simply don't have physical access to the financial institutions, so their options for raising a credit are often quite limited.

Other than getting a loan at a bank, there is the so called "informal credit" when people borrow from their friends and family or local informal crediting groups. The accessibility of these types of loans is highly dependent on the individual circumstances of the lender, and therefore has a rather unstable nature. According to Nguyen and Nguyen (2021), while being one of the easiest ways to get credit for the small borrowers, the informal lending is not being governed by laws, and therefore implies a high level of risk associated with false advertising or frauds.

It is worth mentioning that recently there have been emerging some agro-service providers^f that help farmers increase yields by crediting their agricultural inputs purchases. There are also insurance systems introduced to specifically secure farmers against force major situations such as harvest destruction caused by draughts or other weather anomalies. For instance, the agricultural index insurance offers farmers payouts based on a measure of common indices such as rainfall, vegetation fluctuation or average yields (Burke et al., 2010). These types of insurance systems are agriculture-specific products, so the cost of commitment for the farmers is much lower than getting a general insurance due to the reduction of transaction costs of financing for the financial institution. Agriculture-specific service providers currently existing in the market have been showing effectiveness in encouraging small farmer's agricultural activities and increasing their incentive to produce more, although the coverage of the farmers' population by these organizations is still limited, and so is the pool of available funds.

One way to increase the availability of credit for the smallholders is to expand the presence of commercial banks on the market of agriculture-specialized financial solutions. As mentioned before, some banks do not offer specific loans for input purchase, or loans which do not require collateral. The reason why banks are reluctant to finance small farmers and do not introduce

^f For example, organization called "One Acre Fund" provides Africa's smallholder farmers with financial services, products, and trainings on applying various agricultural techniques.

agriculture-specialized services lays in high transaction costs. It is costly to assess the riskiness of small farmers if there is no suitable assessment system designed for this specific type of borrower. Therefore, it is necessary to support banks in planning and introducing assessment systems for the agriculture purpose loans. These systems should include a wide range of borrower types, varying by scale and specific borrowing needs (whether it is to purchase inputs for the sowing, or leasing new equipment, or cover wages of the hired workers). Such support could be offered by the Ministry of Agriculture and local agriculture agencies, who will collect the necessary information and conduct research about the borrowers and their needs. In cooperation with central banks, they can involve experts, who, based on the collected information, will be able to consult banks about the specific products.

Another thing to keep in mind is that agriculture itself is a risky business and commercial banks, who's main goal is to increase profits, want to avoid losses as much as possible. Therefore, policymakers' job is to create additional incentive for banks to work with risky borrowers. When restrictive measures such as interest rates caps are imposed, financial institutions tend to become more cautious about to whom they loan money. Consequently, this may create premise for credit rationing, in which small borrowers are usually the first to be out from "the race" for getting a loan. Instead, policies that mitigate banks' risks by giving them an opportunity to share those risks with the government can significantly increase the availability of credit to risky borrowers.

One of the options of the risk sharing mechanism might be introduction of a so-called "credit guarantee system", when public institutions improve the creditworthiness of the small-scale borrowers by serving as guarantors to financial institutions. For example, a similar system has been functioning in Japan for many years. There, public Credit Guarantee Corporations (CGCs) provide guarantees to small and medium enterprises with the aim of supporting their business activities, as well as offer emergency recovery support in case of a natural disaster. These guarantees can be applied for directly through financial institutions, so they are easily accessible by the borrowers. Ono et al. (2013) found that introduction of public guarantees had a positive effect on banks' openness to provide credit to small borrowers with no physical collateral to secure a loan. The other side of the coin, though, is that such guarantees may be costly to the budget, and there are pitfalls such as adverse selection and moral hazard. For that reason, the system must be adjusted to the country's economic conditions and institutions. Adjustments may be done to the coverage of the guarantee (full or partial), target beneficiaries, the system of monitoring etc.

Improving the supply side of the credit is not enough to alleviate farmers' financial constraints. Studies show that there are cases when farmers are those depriving themselves from getting a loan at an official financial institution due to the low level of trust to such institutions caused by lack of information and understanding about their services. On the opposite, the trust to informal financial institutions in Africa is rather high (Klapper and Singer, 2015). As already mentioned before, informal credit organizations are easy to access, but engaging with them is not always the most optimal nor it is the riskless way to raise funds.

The interesting point is that in countries with low level of trust to formal financial institutions, informal ones have a special advantage; they possess valuable information on the borrowing patterns and needs of the borrowers. Rather than letting these informal financing organizations be complementary to the formal institutions, it might be a good idea to partially formalize them by integrating into the financial system. One of the possible scenarios is to establish a sort of a correspondent relationship between informal local credit organizations and commercial banks, so that informal ones would act as an intermediary on the behalf of the formal ones by performing some simple tasks like spreading the word about the existing services, collecting useful information about borrowing patterns of its clients, and facilitating the contracts. This way farmers would be able to get reliable information about the financing options they have from a trusted source. As a result, by the law of transitivity, this arrangement will increase the trust for the formal financial institution represented by the local organization. As for the shareholders of the informal credit cooperatives, they can redirect their deposits to the formal institution under favorable terms such as, for example, higher interest rates. Consequently, they would be able to keep helping the community while getting profitable dividends from their deposits, and salary for the intermediary services they provide. Implementing this kind of integration is a long-term process that would require transformations in the regulatory side of the financial system as well as investment into education of those who will be representing the formal financial institutions. Despite the challenges, eventually this system could become beneficial for many stakeholders: small farmers, informal credit organizations and formal financial institutions.

2.2. Targeted Application of the Technology – A Key to Technological Transformation

One of the challenges for achieving sustainable agriculture in regions affected by food insecurity is the low level of technology adoption which is vital for effective production in unfavorable

climate conditions characteristic for those regions. The lack of the technology itself is not a problem as companies and agriculture institutes from all over the world invest a lot into the development of the new technologies. The problem is rather in identifying the suitable technologies and adopting them to the specific conditions.

Studies show that technologies, whether these are some improved varieties of seeds or a new type of machinery for spreading fertilizers, that show positive effect on harvest intensity in one region of the country are not necessarily suitable for another region with similar agroclimatic conditions (Barrett et al., 2021). In other words, the technologies that worked for one farmer would not work the same way for another one even though the environments they apply those technologies look similar at the first sight. In this case, farmer, who was optimistic about introducing the technology which worked well for others, will eventually disadopt it with none or insignificant returns on investment. This might result in discouragement to apply new technologies in the future.

Unfortunately, misselection of technologies is a natural process in agricultural production because it is influenced by a complex combination of factors such as climate conditions, terrain, soil composition and its water retain properties etc., which can be heterogenous even on the small territory, such as a village. Customizing new agrosolutions specifically for smaller regions and agroclimatic environments is one way to approach the problem, although it seems very costly and time-consuming. Moreover, developing a new technology which will be suitable for any farm in the region is simply impossible.

Another way to optimize the use of technologies is to apply the existing ones to those farms, for which they are most suitable for. To do so, first, it is necessary to identify which technology is suitable for which farm. This is when the challenging part begins. In a rural area, where communication infrastructure is underdeveloped, collecting or sharing the information is quite difficult. In developed world, farmers could be asked to answer an online survey on their smartphone to collect information about business problems they are facing or the basic information about their farm. In other words, transmitting valuable information from a farmer to authorities would take less than 10 minutes. In countries like Chad or Burundi where physical infrastructure including roads is underdeveloped, though, it would take the researcher hours or even days to go to the locations to collect the necessary information. For that reason, development of the

communication infrastructure is vital for the dissemination and effective adoption of new technologies.

To put all the above in a nutshell, intensification of agricultural production by small farmers requires careful consideration of which technologies are suitable for the specific agroclimatic environments. Trial-and-error method and close cooperation with those who will be adopting those technologies is a hint for success. Now, who is capable enough to take the lead and drive the necessary changes in technology development and adoption within a country? According to Takahashi et. al. (2019) there exist two opinions about that. First option is that the public sector, namely the ministry of agriculture and its local offices are the most suitable as they have the authority and funds to make a change and are directly interested in developing the agriculture sector and growing the economy. The second point of view is that private sector, represented by the private producers of agricultural inputs and solutions are the best candidates for this job. Some economists suggest that private sector is more suitable for finding the right solutions because companies are more experienced and skilled in building real solutions and drawing up strategies based on the financial prospects of the project. Moreover, the competition in private sector fuels innovation.

Both points of view are sound and do not have to exclude each other. Indeed, private companies have the technology, experience, and ability to create real solutions within certain budget and time frames. Although when it comes to the food security of the country, leaving all the efforts to the private sector is not an option as there are some areas where public intervention is needed. These areas include the regulations, finance, and information sharing. On that account, governments should aim a close partnership between producers of agricultural inputs, farmers who will be testing the technology and public authorities who share information and facilitate to the regulatory side of new technologies introduction.

2.3. The Role of Communication System in Agriculture

As discussed previously, whether it is a new technology or a financial service, it will not be applied unless people know about its existence. The dissemination of information in regions with underdeveloped infrastructure is a great challenge and it directly affects the economic development. If farmers are not able to share their experience among each other and those who develop agrotechnology for them, or the local governments have no clear picture about the problems that

population in their locality is facing, the central government would not be able to introduce suitable policies and the IGOs would not be able to provide the necessary support due to the lack of information.

When it comes to the physical communication infrastructure in countries of Sub-Saharan Africa, the development of this sector requires foreign investment. Telecommunication giants of the developed world, for which global sustainable development is a part of the corporate culture, could come up with initiatives to support countries of Sub-Saharan Africa by sharing some technological solutions, such as, for example, ways to provide mobile connection to remote hardly accessible areas etc. The involvement of private companies with a reputation would attract foreign investments into the sector and facilitate its development. Such cooperation is only possible with the regulatory support of the governments.

The base of any decision we make consists of the facts that we have at hand at the time of decision-making. Without proper information sharing between different levels of authorities and population, good decisions are hard to come up with. When it comes to the information sharing system itself, it is vital to reach effective communication and information sharing by creating a vertical reporting structure where the information goes up from the farmer to the local community, up to the regional office, to the stakeholder institutions such as banks, support agencies, international organization offices etc.

3. IN TIMES OF CRISIS, WE NEED INTEGRITY

Increasing self-sufficiency through intensification of agricultural production is a goal which requires a lot of time and action, and before it is reached the countries affected by the food insecurity will continue relying on the aid (food, agricultural inputs) from IGOs /NGOs, and food products imported into the country. In time of emergency, every single food product matters as it can save someone from hunger or even death. Unfortunately, speculation or improper use of the available resources still takes place in some countries, which negates the positive effects of all the efforts made to keep the food crisis under control.

Food smuggling, or illegal imports of food products is an issue which is not widely discussed but it does exist in the countries affected by food insecurity. According to the ENACT

Observer^g, food products such as maize, rice, sugar and milk powder are illegally trafficked by criminal cartels among Kenya, Uganda, Tanzania, and Somalia. Often these food products are of a very low quality or even contain substances not suitable for human consumption. Such illegal food imports directly put in jeopardy the health of the people who consume them. Moreover, they distort the food market in the country.

Local farmers must compete with the illegally imported food, which is usually sold at a cheaper price compared to the local produce. If such cheap goods are present at a small local market, there is a high chance that a part of locally produced goods would not be sold. As a result, this market would be excessively saturated, when, at the same time, another market would experience a deficit in supplies. This situation may result in market failure. In addition, food smuggling can be detrimental to the economy through other channels. Illegal imports of food weaken the economies through the tax and import tariffs avoidance (Soon and Manning (2018)).

Dealing with food smuggling is an important step towards food security and should be taken seriously. Decision-makers must set strict border controls and tracing systems, strengthen the regulatory base, and increase public awareness. In addition, food smuggling is possible because corruption is present in institutions. Hence, to stop illegal food imports, we must eradicate corruption first. In time of crisis, we need integrity.

^g ENACT is an observer implemented by the Institute for Security Studies in partnership with INTERPOL and the Global Initiative against Transnational Organized Crime and publishes original analysis related to transnational organised crime in Africa.

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