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C. EFFECTS OF COVID-19 ON FOOD SECURITY, NUTRITION, AND AGRICULTURE IN THE LDCs

An analysis of the food and agriculture sector in the LDCs shows the interconnectedness of health, poverty, and economic development. The demographic profile and structural features of the economy of the LDCs make agriculture a sector with extraordinary growth potential. Increasing productivity in agriculture is crucial for poverty reduction and often benefits the poorest and most vulnerable (Christiaensen et al., 2018). Agricultural growth can also positively impact other areas of human development, such as health and nutrition. Rising agricultural productivity can also reduce poverty by freeing up labor for non-farm agricultural activities or non-agricultural activities. In many LDCs, where food is primarily locally produced and consumed, increasing productivity growth in agriculture can facilitate the transfer of labor to non-farm activities without necessarily increasing food insecurity to poor or vulnerable populations.

The severe lockdown measures imposed by high income countries to contain the pandemic illustrates the importance of strong social safety nets that provide protection against severe disruptions caused by these measures. With extremely weak social protection systems, the disruptions caused by the pandemic have increased the cost and impact the availability

of food in the LDCs. In the absence of social protection schemes, hunger and malnutrition will increase dramatically in the LDCs, particularly in countries that were already facing a difficult situation prior the pandemic.

Countries affected by conflict, natural disasters, or other humanitarian crises face additional challenges. They require special and additional support in the short term to prevent the risk of starvation and severe food insecurity. Development and trading partners, multilateral organizations, and other relevant actors can support the efforts of LDCs to set the basis of agricultural development and enhancement in productivity conducive to poverty reduction and sustainable development.

COVID-19 is likely accelerating worrisome trends in the LDCs. Before the pandemic, the number of people suffering from hunger in the LDCs was already rising, increasingly placing LDCs as the locus of hunger and undernutrition. In the Solomon Islands, COVID-19 mitigation measures have reduced agricultural production, food and incomes and dietary diversity declined (Lese et al., 2021). In Ethiopia, dietary diversity declined in poorer households (IFPRI, 2020).

Prevalence of moderate or severe food insecurity in total population pre-pandemic

(percent) (3-year average) (age 69)



In Sudan, the socio-economic crisis, on top of the economic crisis suffered by the country, has led to an increase in food prices. In the Central African Republic, the economic impact of COVID-19 adds to the difficulties caused by displacements and escalated violence. In Sierra Leone and Liberia, the socio-economic consequences of lockdowns and the sharp drop in remittances have led to an increase in food prices and higher food insecurity. In Somalia, reduced incomes originated by the socio-economic effects of COVID-19 have been particularly challenging for urban populations and those receiving remittances (WFP, 2021). Unless financial resources are made available to LDCs, the long-term consequences for the human and economic development of people living in the LDCs will be dramatic, with increased poverty, inequality and malnutrition.

Unlike the process leading to structural transformation illustrated by the successful development experiences of the past, industrialization is lagging in most LDCs. The process of rapid urbanization experienced by many LDCs is not matched with the growth in employment opportunities and higher income offered by the manufacturing sector, which reduces the path of migrating from low-income agricultural activities to higher income activities in urban areas experienced by other developing countries in the path for the LDCs. On the contrary, people are moving from low productivity agricultural activities to the low-productivity informal sector in urban and peri-urban areas. This transition has led to relatively low progress in poverty rates and an increase in the absolute number of poor people.

C.1 AN OVERVIEW OF THE STATE OF FOOD INSECURITY AND NUTRITION IN THE LDCs

Agricultural productivity remains a significant determinant of development outcomes in the LDCs. Agriculture still employs

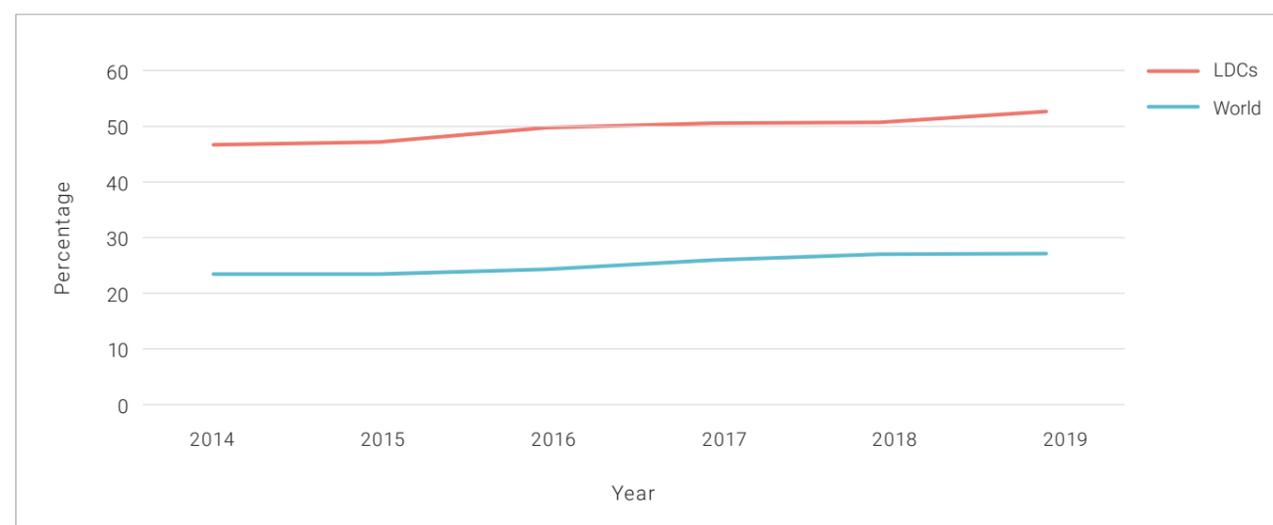
more than half of the population and constitutes the primary income source for rural areas, although there is a perceptible decrease in the levels of the population employed in agriculture. In 2019, 55 percent of the population of LDCs was employed in agriculture, down from 60.4 percent in 2011. The importance of rural areas remains very high, although it has consistently declined as many countries are experiencing rapid urbanization. In 2019, 65.9 percent of the population of the LDCs lived in rural areas, a decline from 70 percent in 2011.

Although agriculture produces more than enough calories to meet basic dietary needs worldwide, the number of undernourished people in the LDCs has not declined. The prevalence of undernourishment has remained virtually unchanged since the establishment of the IPoA at around 23 percent. The number of people unable to cover their nutritional needs has, however, risen considerably from 198.8 to 241.5 million.

This represents an increase of 21.5 percent in the absolute number of people affected by undernourishment during the decade of the implementation of the IPoA. These numbers suggest a trend where bad nutrition and undernourishment become increasingly localized in the LDCs, with 35.11 percent of the world's share, a substantial increase from 29.5 percent in 2010.

Limited access to food is a persistent threat for millions of people in the LDCs. In 2019, 51.5 percent of the population lived, according to estimates from the FAO, under moderate or severe food insecurity. This represented an increase from 45.7 percent in 2014. The average for the LDCs is almost double the world's average of 25.9 percent in 2019. Since 2014, the prevalence of severe food insecurity in the LDCs has increased from 17.6 percent to 20 percent in 2019.

Figure C.1: Prevalence of moderate or severe food insecurity in total population (percent) (3-year average)



Diet quality and nutrition

The linkage between low diet quality and poor nutritional outcomes is now well (Meenakshi, 2016; Neumann et al., 1999; Schönfeldt & Hall, 2012; Tzioumis & Adair, 2014)²⁷. The average dietary supply shows a higher weight of energy-rich foods in the LDCs. However, there are significant differences within countries based on social group and rural vs. urban population. LDCs also show lower protein intake, which is associated with poor nutrition outcomes. The average supply of protein (g/cap/day—3-year average) has increased from 31.9 for the period 2009-2011 to 55.1 for the period 2015-2017, although still substantially lower than the world average of 79.9 for the period 2015-2017. The average supply of protein of animal origin (g/cap/day—3-year average) was 10.1 for the period 2009-2011 and 11.8 g/cap/day for the period 2015-2017 in the LDCs, also significantly lower than the world average of 31.3 for 2015-2017.

Micronutrient deficiencies prevent progress in human development

Micronutrient deficiencies aggravate undernourishment and can have severe consequences in the long-term development of children. The prevalence of undernourishment illustrates how health, economic, and food safety are inextricably linked (FAO, 2020). Increased immunization and control programmes for malaria and other diseases and improving nutritional status go hand in hand in reducing poverty and vulnerability of marginalized communities. The affordability of a micronutrient-rich diet is crucial for vulnerable groups in the LDCs. Rising real incomes is extremely important to ensure access to a healthy diet. Without sufficient income or safety nets, the poor are unable to make the choices for a healthy diet. Education, infrastructure, storage, and retailing are also relevant factors. Public policies can contribute to reducing prices for more nutritious foods in the LDCs. Increasing the productivity of farms and addressing off-farm bottlenecks, such as infrastructure deficiencies, are also crucial. Public interventions aimed at diversifying agricultural production can also contribute to improving access to a higher-quality diet.

The most widely known micronutrient deficiency, iron deficiency, causes anemia affecting millions of people in the LDCs, particularly women and children. Iodine, Vitamin A, folic acid, or zinc deficiencies affect large parts of the population. Iron deficiency, which affects 30 percent of the world population, including in developed countries, is exacerbated in the LDCs as a result of high levels of undernourishment, severe food insecurity, as well as the prevalence of infectious and other diseases such as malaria, hookworm infestation, schistosomiasis, and tuberculosis. These deficiencies severely reduce

the ability to lead a fulfilling and productive life. For children, it can lead to cognitive disabilities and obstacles in their development, particularly for the poorest and most vulnerable. Reducing micronutrient deficiencies contributes to poverty reduction and sustainable development. Poor nutrition outcomes have a direct impact on children's health and wellbeing. The proportion of severely stunted children decreased from 34.6 percent in 2015 to 31.2 percent in 2019, which represents a decrease from 48 to 45 million. Despite this progress, child developmental problem remains substantially higher than the world average of 21.3 percent in 2019. The proportion of children moderately or severely wasted in the LDCs was 10.9 percent. Investment in education, particularly targeting school age groups, providing accurate information about dietary risks and better regulation on labeling and marketing to provide adequate information to consumers, is also essential. Supplementation programmes and strategies for diet diversification can bring positive results. Still, they require scaled up resources and technical capacities, which is challenging for LDCs with already strained public budgets and now additionally burdened under the challenges raised by fighting COVID-19.

Food waste

Food waste is an important issue for LDCs. Addressing it can contribute to improve nutritional outcomes and can also have positive economic impacts. A study in circumscribed areas in LDCs illustrates the scale of the challenge. In the United Republic of Tanzania, it was estimated that in 2013, food waste was 119 kg per capita in the studied area. In Zambia it was 78 kg of food waste per capita in 2012; 189 kg of food waste per capita in Rwanda in 2013; and Ethiopia 92 kg of food waste per capita in 2017 (UNEP, 2021). Disruptions in food systems in the onset of the COVID-19 pandemic may contribute to eFood waste is commonly associated with dislocations in transportation and distribution systems, and lack of adequate storage and refrigeration. It may also be due to early harvesting in low-income settings, because of the need for cash or immediate food access. One of the main challenges of addressing food waste has been to measure and monitor it properly to identify effective interventions and to understand its impact on food security and nutrition, as current evaluation tends to focus on the place in the value chain where food waste occurs rather than its broader societal impact. This challenge is particularly severe in many LDCs due limited data availability and low institutional capacity. Methodological progress and greater attention have improved data availability in recent years but there is still work to be done. Disruptions in food systems in the onset of the COVID-19 pandemic may contribute to exacerbating these existing food waste challenges.

²⁷ In the LDCs, the average dietary energy supply adequacy (3-year average), as a percentage of the Average dietary Energy Requirements (ADER), was 94 percent for the period 2017-2019, a slight increase from the 93 percent of 2010-2012. The average share of dietary energy supply derived from cereals, roots, and tubers (kcal/cap/day – 3-year average) was 58 percent for 2015-2017, higher than the world average of 50 percent for the world for the same period.

C.2 COVID IMPACT ON FOOD SECURITY AND NUTRITION

Millions of people in the LDCs already faced moderate or severe food insecurity before the onset of the pandemic. Loss of income resulting from lockdown and reduced mobility measures or lower demand for export crops can negatively impact parts of the food supply chain. Reduced demand from restaurants, hotels, or higher-value items such as meat and fresh fruits results from the reduction of income of urban dwellers. Since low-income households tend to spend a higher proportion of their income on food, the impact on their nutrition and food security can be significant. The larger share of unbanked workers in the informal sectors in the LDCs will be significantly affected. School closures may also negatively impact lower-income households since many rely on school meal programmes. People living in informal settlements in cities are likely to be severely affected by the crisis and face higher food insecurity.

Short-term and seemingly temporary shocks triggered by COVID-19 outbreaks may result in entrenched long-term problems that further exacerbate the challenges to improve food security and will increase the vulnerability of broader social groups and systems. Social protection measures should be put in place to support affected groups, particularly those most vulnerable. Poor smallholder farmers and their families should be included in social protection schemes.

Increase dependence on food imports

LDCs have become more dependent on food imports. The value of food imports in total merchandise exports (3-year average) was 24 percent for 2015/2017 up from 15 percent for the period 2010-2012. Border closures and restrictions may impact countries highly dependent on imports for a large part of their food needs. Simultaneous restrictions by various countries may have a negative impact on regional food balances and create food shortages if not adequately managed, particularly for landlocked LDCs relying on neighboring transit countries for access to food. Countries dependent on services, oil imports, food imports, remittances, or other exports for good whose demand has plummeted are particularly vulnerable. In building more resilient food systems LDCs may benefit from a holistic approach that considers economic, social and environmental aspects in an integrated manner. The systems thinking that has characterized recent discourse in the agriculture and development space can help LDCs and their partners to identify trade-offs and design better policies to promote food system's transformation that is consistent with sustainable development. Countries should identify measures to better balance their food sourcing portfolios. Devel-

opment partners, from donors to multilateral system organizations should assist countries with ecological limitations to address their own food needs domestically with the resources and technical support to assist them in building more resilient food systems, including by supporting the creation of adequate infrastructure, such as grain storage capacity and other similar measures.

Negative impact on remittances

Lower remittances caused by job losses and returns of migrants will severely impact low-income households or smallholder farmers relying on them for purchasing inputs. The remittances of migrants contribute to food security. A substantial reduction will impact rural livelihoods in areas of origin heavily. Around 40 percent of remittances flow to rural areas, representing in some cases 60 percent of the total annual income. In addition, the decline in remittances is expected to increase the cost of bank operations in affected LDCs and thus limit the availability of credit for agricultural smallholder farmers and small- and medium enterprises (SMEs) in the agricultural sector (see also Section G).

The indirect impact of COVID-19 on children may be large

Many clinical facts of COVID-19 remain unclear. However initial evidence suggests a lesser impact on children, particularly when compared to older age groups, although there have been concerning cases of serious complications. The indirect impact of the pandemic will surely have a negative impact on children if left unaddressed. Logistic disruptions, loss of income and other associated impacts could likely have lifelong consequences for children in the LDCs as a result of greater difficulties in accessing an adequate diet and due to disruptions on school systems. Reallocation of the scarce health resources of the public health systems in LDCs will likely have a negative impact on maternal and child mortality (Robertson et al., 2020). Children in low-income settings and marginalized communities are at far higher risk and, ultimately, will determine the future path of their societies (Clark et al., 2020).

Limited fiscal space to address the pandemic

LDCs already faced severe pressure on their budgets to accommodate pressing social needs. Declining revenue as a result of lower economic activity or reduced budget support by donors will increase the dilemma faced by public authorities in the short term. Countries affected by a surge in COVID-19 cases will shift resources to address the direct health impact, limiting the ability of the Government for meaningful interventions in other areas. Shifting resources from agriculture and education to remediate the immediate health emergency will result in additional challenges.

The diversion of resources to address the immediate crisis risks leaving relevant ministries and agencies without resources to support the needs of agriculture at a time of crisis. Thus, the linkages between the calls for debt reduction and other measures to expand the policy space of countries and food security are closely related. Prevent liquidity shortages and support people's nutrition at a time of crisis helps to prevent population at risks of falling into acute food insecurity and generating additional income and growth opportunities.

Trade and logistics

Trade restrictions, border closures and a spike in transportation costs will reduce diet diversity. Supply chains of high nutrient foods are more vulnerable due to being more perishable. This adds to the limitations posed by insufficient infrastructure in LDCs, particularly the low coverage of cold chain transport network when compared to other countries. Also, shifting priorities in budget allocation to address the most immediate challenges posed by the health emergency will hamper government supported school feeding programmes or healthcare nutrition programmes and may have a significantly negative impact on women and children. Beyond supply chain disruption, loss of income of vulnerable groups will lead to shifts in diet towards less diverse and high-quality diets as they will substitute food rich in nutrients to preserve their caloric intake.

Logistical and communications obstacles constitute an additional challenge for LDCs. In Myanmar, an assessment by the International Food Policy Research Institute (IFPRI) among agricultural input retailers reported higher prices of key agricultural inputs due to a rise in transportation costs originated by COVID. Input retailers expected lower revenues in 2020 (Goeb et al., 2020). Urban areas are dependent on the provision of food from rural areas, but farmers also need access to markets to acquire critical inputs. For some LDCs, the impact of measures taken to reduce the effects of the pandemic, particularly movement limitations, may interfere with the planting periods for essential staples. Slow harvests will also negatively impact seasonal workers.

The challenges faced by rural areas is compounded by weak national infrastructure and limited capacity

Coordination mechanisms that involve relevant ministries and government agencies, private sector, civil society and UN and other multilateral organizations are essential instruments to face the pandemic. At the national level, Government coordination mechanisms must include agriculture ministries and relevant agencies.²⁸ Monitoring the entire chain of food

systems will be crucial to reduce the negative impact that the pandemic will have on smallholder farmers and those facing, or at risk thereof, acute food insecurity. Ministries of Agriculture and relevant agencies must be part of national and regional coordination mechanisms.

Central to the COVID-19 response is providing services in rural areas and strengthening governance mechanisms adapted to the specific challenges that COVID poses to the agricultural sector, particularly since a significant focus has been placed on urban areas as they were most affected at the onset. COVID-19, however, is increasingly impacting rural areas, particularly in African LDCs,²⁹ where there are fewer resources and infrastructure to address the health emergency. Providing relevant information to rural areas in LDCs poses a challenge. Lower literacy levels and substantially lower Internet penetration creates additional difficulties to provide factual and accurate information about the pandemic and the resources, tools, and recommended practices to address it in rural areas in LDCs. The ramifications of a crisis in rural areas for the agri-food system and the national food supply chain are manifold. Rural areas are less connected to government institutions in many LDCs. This reality is likely to be exacerbated due to the direct and indirect impact of the pandemic. Dedicated programmes to address the impact of COVID-19 in rural areas are essential, particularly given the lower attention to the rural sector in the initial batter of policy responses by governments and partners. The Rural Poor Stimulus Facility (RPSF) established by IFAD constitutes an excellent example of mobilizing resources to support smallholder farmers rapidly and, at the same time, build resilience and start addressing some of the bottlenecks and gaps mentioned in this report. Adequately funding mechanisms, such as IFAD's RPSG is crucial to ensure the rapid deployment of resources and prevent disruptions in the food supply chain.

Smallholder farmers in LDCs will face heightened difficulties in accessing inputs or financial resources due to COVID-19. This only exacerbates the existing challenges in connecting with expertise and specialized knowledge that can enhance productivity, such as a better understanding of soil characteristics, knowledge about best practices for specific crops, or training about the proper use of pesticides and fertilizers.

Weak transportation systems, poor infrastructure, and a high degree of informality pose a critical challenge for food security. Upgrading the domestic food supply chain gains urgency in light of the burden posed by COVID-19. Upgrading the wholesale market structure to support smallholder farmers

²⁸ IFPRI has a portal that compiles policy responses to COVID at <https://public.tableau.com/profile/ifpri.td7290#!/vizhome/CPRPORTAL/Overview?publish=yes>. Agriculture ministries are often left out of coordination mechanisms.

²⁹ <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-10-april-2020>

can not only contribute to improvement in the traditional supply chain but constitutes a priority of strategic importance.

A major challenge for vulnerable populations in the LDCs, particularly children, is the severe deficits of micronutrients. Restrictions in the movements of goods and the impact to the harvesting season due movement limitations and lockdowns will only amplify this problem. Reduced imports and local production will likely exacerbate deficits in micronutrients and have long-term consequences for the health of the most vulnerable. Measures put in place to protect consumers from the impact of COVID-19 tend to concentrate on staple foods. Mali has set price limits on rice, bread, cooking oil, and sugar. Rwanda on staple foods.³⁰ These policies, taken to ensure access to basic staple food by the population, stimulates consumption of staple foods, particularly by vulnerable and poor households, reducing the consumption of healthier and more diverse foods. These issues emphasize the urgency of diversification strategies for smallholders that can directly contribute to better nutritional outcomes from the point of view of production, but also because of higher income generated. Policies promoting complementary activities, which can go from beekeeping to milk production or fishing, can make a difference. It is also time for assessing crop selection strategies based on nutritional composition and not solely yield.

The process of agricultural transformation and nutrition transition, accelerated by the changes brought by the pandemic, could represent an opportunity to support poverty eradication and, at the same time, promote better nutrition and health-related outcomes. Although the agricultural policy is context-sensitive and must consider specific local factors, promoting diversification of agricultural productions, integrated farming systems, and eco-system-based strategies that combine productivity with the conservation and enhancement of natural capital can be fruitful. The design of a new approach could be articulated from a regional perspective, emphasizing the importance that cooperation among neighboring countries can have in addressing the challenges caused by the pandemic to the agricultural sector and achieving better economic and nutritional outcomes.

Extensions services play a crucial role in supporting smallholder agriculture. They can also support an integrated approach that favors a balanced approach that includes production and nutrition as part of the design of interventions at the local level. Support to promote the adoption of sustainable practices, such as eco-labels, certification systems, and other norms, can facilitate the integration of poor farmers into the food value chain. The extreme vulnerability of the agriculture

sector as a result of COVID-19 highlights the vital role played by extension services. It can act as an essential provider of information about COVID-19 in rural areas, particular in light of the rapid introduction of new rules and compliance directives to fight the pandemic. Extension services can also provide timely and accurate information about the situation in rural areas to the Government for the planning, mitigation, and support of vulnerable populations. The need to keep food production chains functioning benefit from the support of extension services, where mismatches in supply, disruption to transportation systems, or storage facilities place extension systems in a critical position to find temporary solutions through, for example, the promotion of 'short value chains'.

There are examples of partnerships with the private sector focusing on reaching out to consumers in remote rural areas to enhance the availability of micronutrient fortified foods. In Mozambique, the National Committee for Food Fortification brings Government and industry together to expand the distribution of fortified products such as vitamin A, wheat flour with zinc, iron, etc. Another kind of partnership supports chain consumer behavior through marketing and advertising promoting positive associations of healthy foods and consumption. Other type of partnership focuses of developing fortified foods. The Iodine Network, for example, promotes the eradication of iodine deficiencies worldwide (Gómez & Ricketts, 2013). As a result of the negative effects of the pandemic in the national food supply system, building partnerships with the private sector to mitigate the impact of disruptions to the supply system and tapping innovation systems to provide solutions to smallholder agricultures will be critical.

LDCs in conflict and in the midst of humanitarian crises in the time of COVID-19

The Security Council in resolution 8267th adopted on 24 May 2018, expressed its concern about the level of global humanitarian needs, highlighting that the majority of food insecure people living in countries affected by armed conflict. The resolution also highlights the link between violence and food insecurity.

The difficulties faced by LDCs in conflict and post-conflict situations are compounded by the health and economic impacts of the pandemic. In Yemen, two-thirds of the population require support to access food and face the threatening prospect of starvation. The Secretary-General of the United Nations has called for increased support to meet the challenges of a staggering humanitarian crisis. The Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordination, Mark Lowcock, has indicated that honoring pledges

and increased funding is crucial to prevent starvation among large segments the population in LDCs. In Sudan, more than 9 million people are facing acute food insecurity and require urgent action. In addition to conflict induced displacements, COVID-19 prevention measures and high inflation rates have impacted access to food by the vulnerable groups. In Somalia, severe flooding, desert locust infestation, the socioeconomic impact of COVID-19,³¹ and the cumulative impact of previous shocks have placed more than 1 million people in a situation of acute food insecurity. Large-scale humanitarian assistance and government support prevent broader segments of the population from falling into acute food insecurity. In the Democratic Republic of the Congo, the prevalence of high food insecurity among vulnerable people is driven by a mix of conflict, flooding, and a deteriorated economic environment. In the regions of Ituri, North Kivu, South Kivu, Tanganyika and Maniema, approximately 6.6 million people have lived in a situation of displacement since 2016. Lockdown and movement restrictions due to COVID-19 may have had a negative impact on food prices. Also, in South Kivu, Tanganyika, Haut Lomami, and Haut Katanga, around 500,000 people have lost almost a third of their food reserves, which, paired with a high prevalence of plant and animal diseases, will likely impact agricultural production. Direct food assistance to support the most vulnerable populations should be paired with programmes to restore livelihoods and to rebuild and strengthen production systems. Between August 2020 and February 2021, it is likely that around 4 million people will face acute insecurity and require urgent assistance in Haiti. The poor harvest due to below regular rainfalls was compounded by the devastating impact of hurricane Laura, a Category 4 Atlantic hurricane, which was the strongest on record since 1856. In Ethiopia, population displacement due to conflict and climate change, the worst invasion of desert locust in the last 25 years and high inflation exacerbated by COVID-19 prevention measures has placed an estimated 8.5 million people in a situation of food insecurity. Internally displaced people returning to their areas of origin has faced challenges to access food as a result of the limited success of livelihood restoration programmes and higher food prices.

C.3 STRENGTHENED SUPPORT FOR SMALLHOLDER FARMERS AND AGRICULTURE AND ADDRESSING THE CHALLENGES OF COVID-19

Integrating urban and rural areas

The dietary transition of part of the population in the LDCs towards a more significant weight for purchased and processed food will have important implications for agriculture.

This process increases the demand for feed grains and other inputs, thus expanding the possibilities for producers and agribusinesses. In addition, increasing urbanization will transform the relationship between rural and urban areas. The increasing importance of urban centers and the need to generate employment opportunities to a growing urban population calls for strengthening, or in many cases developing, the missing linkages of the food value chain. The expansion of the food supply chain at the local and regional level can contribute to a better integration of urban and rural areas (FAO, 2017) and a more balanced development model that addresses the needs posed by increasing urbanization with the need to promote sustainable development in rural areas. Food markets will expand and can provide opportunities for developing the national food value chain and promote domestic private sector development. SMEs can generate jobs and income in the agribusiness processing, logistics, transportation, storage, or provision of inputs or retail distribution, to cite a few sectors within the food value chain. Agribusiness has the potential to promote production capacity development, promoting food safety and fostering human development through inclusive employment. Promoting the expansion of domestic small and medium-sized businesses and generating off-growth employment can facilitate a genuinely inclusive food supply chain. In the LDCs, developing the domestic food value chain can be a useful tool to reduce poverty, and it also has multiplier effects on other sectors.

Better support for smallholder farmers and small-scale agriculture

Small farms are responsible for around 36 percent of the value of the world's agricultural supply. Family farms operate approximately 75 percent of the world's agricultural land (Lowder et al., 2016). Smallholder farmers are the backbone of agriculture in LDCs. The prevalence of small farms in LDCs should not be equated with a homogenous agricultural landscape as there is a great diversity of smallholder farmers. One way to explore this heterogeneity is to examine the relationship of farmers to the food value chain. Noncommercial farmers tend to practice subsistence agriculture and often supplement agricultural income with casual labor in the informal sector. Smallholder farmers engaged in market-oriented activities have a more stable relationship with buyers and other actors within the food value chain. They have better access to inputs and can establish more predictable relationships through formal contracts. They also have better access to financing. Mapping these differences is crucial to design policies to support the diversity of actors in the agricultural sector in the LDCs.

³⁰ <https://www.ifpri.org/blog/ifpris-covid-19-policy-response-cpr-portal-identifying-trends-and-implications-food-systems>

³¹ <https://www.who.int/news-room/feature-stories/detail/covid-19-locusts-flooding-who-and-triple-threat-in-somalia>

Traditional food value chains are characterized by direct linkages between smallholder farmers and distribution in wet, local markets. Market offers tend to vary with seasonality, and micronutrient offer is characterized by low-priced vegetable and fruits. These typologies have been present in most LDCs, nonetheless the rapid urbanization has also led to the appearance of other modalities that combine the expansion of more modern retail enterprises with actors in traditional value chains. Although there is limited data availability for LDCs, evidence points to better affordability of micronutrients and staple foods rich in calories in more conventional food value chains (Gómez & Ricketts, 2013). A more recent study points to the linkages in the modernization of retailing and diet quality, focusing on increasing ultraprocessed foods driven by the rapid rise in modern supermarkets in urban areas (Khonje & Qaim, 2019). Countries experiencing a nutrition transformation may suffer the double burden of undernutrition and obesity across different sectors of their populations, in some cases showing increases in the number of people undernourished and at the same time displaying a rise in the number of people overweight.

Domestic markets are the primary destination for smallholder farmers in the LDCs. The importance of primary markets is likely to increase. Wholesale markets serve both traditional and modern retailers. The pandemic has brought to the fore the importance of strong domestic supply chains. Informal urban food markets have been severely affected as a result of the pandemic. Lockdowns and movement limitations, reduced transportation options or the difficulty in following social distancing measures in densely packed urban settings poses a significant risk for consumers and workers. Informal food traders are a critical part of the food supply chain in many LDCs. The difficulties of extending the social safety nets to informal workers constitute an additional challenge in designing an effective response to the pandemic in the LDCs. A key metric that will illustrate the success or failure of the fight against COVID-19 in the LDCs will be the ability of governments and their partners to reach informal workers. The role of informal workers in the food supply chains of LDCs makes supporting them not only a humanitarian imperative but a strategic goal.

C.4 ACCESS TO FINANCE

Lack of access to finance constitutes a crippling constraint for farmers. The inability to have access to credit constitutes a severe limitation to capitalize on business opportunities. Lack of access to insurance prevents them from effectively managing risk and increases their vulnerability. It is necessary to

develop financial instruments targeting producers' organizations to strengthen cooperation, input shops, and that helps connect agricultural villages with markets. Credit guarantee funds can support investment plans and increase productivity. The landscape of development finance can change substantially as a result of the interaction of three different sectors: agricultural development actors, information and communication technology and financial institutions. The interaction of these three areas can help streamline existing mechanisms or create new opportunities for farmers. Besides new financing instruments and models, the level of resources dedicated to supporting smallholder agriculture and trigger structural transformation in the agriculture of LDCs requires a substantial scale-up of resources.

Formal financial institutions play an essential role in supplying credit to the agricultural sector. In many countries, state banks provide short-term capital, often responding to the priorities established by governments. Microfinance institutions also provide resources, particularly in Asia. In some LDCs, social lenders offer short term finance to producer organizations, often backed by buyer contracts. Although still incipient in many LDCs, some of them are transition starting to explore longer-term finance options. Commercial banks often reach only a segment of the agricultural sector, lending to actors in the food value chain and only indirectly reaching small farmers through the intermediations of buyers or input providers. Other providers of finance include non-governmental organizations (NGOs). For example, the One Acre Fund serves over one million smallholder farmers in Burundi, Malawi, Kenya, Rwanda, the United Republic of Tanzania, and Uganda (Goldman et al., 2016). Close attention to the modalities used by public authorities to finance investment can also be a tool for poverty reduction.

Improving access to land, credit and technology for women can help reduce inequality and increase agricultural productivity. Women often face disadvantages in accessing and owning land (Goldstein & Udry, 2008). Limited productivity in agriculture can be partly attributed to the disadvantages faced by women as a result of institutional or norm-based factors (Doss, 2011). Intra-household equity, behavior change, food safety, and access to clean water and sanitation must be addressed in an integral manner to harness the potential that agriculture has for poverty reduction.

Supporting social safety nets can play a crucial role in supporting agriculture as a driver of poverty reduction. Ethiopia, with the support of donors, created two programmes adapted to the conditions of regions. The Agricultural Growth Programme

(AGP) support areas with optimal climatic conditions for agricultural production with support to improve productivity and market performance. The Productive safety Net Program (PSNP) supports chronic food insecure areas, affected by recurrent droughts (Berhane et al., 2017). Limited fiscal space and severely strained public budgets emphasize the key role of the United Nations through its country teams, other international organizations and development partners through bilateral and multilateral cooperation initiatives through the provision of budget support as well as in-country programmes. Development partners should explicitly include social protection programmes as part of their development cooperation programmes.

C.5 PROMOTING RURAL INFRASTRUCTURE AND THE DOMESTIC FOOD VALUE CHAIN

A bottleneck for productivity increase and growth in the agricultural sectors in most LDCs lies in the lack of infrastructure. Developing infrastructure that facilitates supply links for greater market access, transport, distribution, processing and retailing and that connects small towns and intermediary cities in the near rural farmlands. Connecting farmers to markets and developing the national food supply chain necessarily passes through infrastructure development. Better irrigation systems and facilities for storage is also crucial. The development of digital infrastructure, both hardware and software, is key to facilitate access to finance, critical market information and data that can help to increase productivity. Technological solutions adapted to the specific needs of farmers in LDCs can support them in accessing crucial information about the proper use of inputs in a safe manner, understand the potential risk of diseases and pests and get valuable know-how to increase the added value of agricultural production. Increased connectivity can also help farmers to access development and information services that would enable them to adopt improved production strategies.

C.6 LEVERAGING SCIENCE, TECHNOLOGY AND INNOVATION FOR AGRICULTURE

Generating relevant innovations to support resource-poor smallholder farmers in LDCs should be a priority. Technological developments that are relevant to the context of smallholder agriculture in LDCs can enhance productivity and can enable poorer smallholder agricultures to access the downstream food value chain and prevent them of being marginalized as a result of strict standards set by processors and retailers engaged in international trade. The inability to adopt high-yield seeds, together with limited access to inputs or technical

knowledge, poor infrastructure, and limited access to credit, explains the limited progress in increasing productivity.

The expansion of off-farm employment and agri-food employment can help address poverty and inequality in rural areas, facilitating access to agronomic knowledge and resources is key. Enhanced agricultural education and extension services can support people living in rural areas. ICT can provide solutions not available a few years ago and act as a key tool to disseminate key information. In addition, the proliferation of low-cost devices equipped with sensors and leveraging the power of machine learning algorithms could help increasing productivity. Artificial intelligence systems that would require large computational infrastructure a few years back can now be used in broader contexts. Governments in LDCs could develop capacities to train neural networks to be sensitive to local conditions and trained models could be deployed in rural areas, providing tools that can help manage the efficient use of inputs, identification of plant diseases and treatments, etc. These are some examples that illustrate the potential that new technologies can have for LDCs. The key remains to develop domestic capacities to better adapt such technologies to be relevant in the local context.

Extreme weather events and land degradation exacerbate the challenges faced by the agriculture sector in the LDCs. Access to land, finance and technical support to support the engagement of smallholder farmers in the supply chain would address one of the main obstacles faced by farmers in LDCs, their difficulties in connecting with the middle of the supply chain as a vehicle to access markets. Strengthening or establishing public inspection and quality assurance services along the entire food supply chain to ensure that inputs provided to farmers are adequate and up to required standards helps building trust in products of smallholder farmers and facilitates their access to additional markets. Quality assurance mechanisms could support the assessment of soil quality and food safety.

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D. TRADE AND PRODUCTIVE CAPACITY WERE HIT HARD

The IPoA recognizes the role of a dynamic private sector in enabling innovation, trade and growth; in creating and supporting productive employment opportunities; and ultimately, in promoting structural change and sustainable development in LDCs. Even before COVID-19 reached the LDCs, they were severely affected by the disruption of global mobility and trade and declining commodity prices. The COVID-19 pandemic and the measures adopted by most LDCs such as lockdown, movement restrictions and travel bans caused a downturn in economic activities and created a shock in both demand and supply.

D.1 TRADE-RELATED IMPACTS

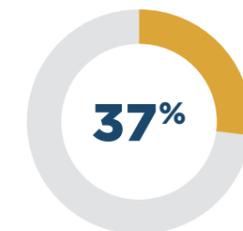
The pandemic-induced disruptions to production and global supply chains, which is estimated to cause world trade volumes to shrink by 32 percent in 2020 (WTO, 2020a), has severe impacts on LDCs' economies. These are magnified by several other indirect or induced impacts on trade, for example the appreciation of the US dollar, trade hostilities between the US and China, and the risk of further protectionist responses. Containment measures such as additional inspections, reduced hours of operation, roadblocks, and border closures have been inflating transport and trade costs, decreasing the export competitiveness of already-vulnerable economies, in particular the landlocked countries, of which 17 are LDCs.

The pandemic has led to widespread calls for governments to liberalize imports of and reduce tariffs on medical supplies, protective garments, testing kits, and sanitary products. Tariffs on several of these products tend to be rather high: for example, most favored nation (MFN) tariffs on soap in Africa average 25 percent and are designed to protect domestic soap producers (UNECA, 2020). Most of the other tariffs, however, are revenue-seeking since LDCs typically lack the capacity to produce those goods.

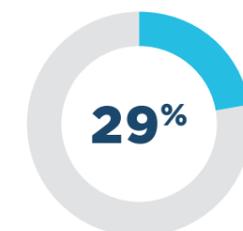
On the other hand, a number of countries (of all income levels) did adopt measures to ban or restrict exports of medical products, food and agricultural products as the pandemic threatened to disrupt their supply. These export prohibitions tend to have disproportionately larger impacts on LDCs, which prompted the WTO LDC Group to issue a communiqué to all non-LDC members, urging them to refrain from imposing

Trade and Productivity were hit hard LDCs' exports are estimated to have declined by 6.8% in 2020

LAYOFFS BY SMALL & MEDIUM ENTERPRISES (SMEs) INCREASED



LAYOFFS MADE BY WOMEN LED SMEs



LAYOFFS MADE BY MALE-LED SMEs