MOZAMBIQUE

Agricultural livelihoods and food security
in the context of COVID-19

Monitoring report
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Abbreviations

COVID-19	Coronavirus disease 2019
CTA	Confederation of Economic Associations of Mozambique
FAO	Food and Agriculture Organization of the United Nations
FIES	Food insecurity experience scale
FEWS NET	Famine Early Warning Systems Network
GIEWS	Global Information and Early Warning System on Food and Agriculture
IPC	Integrated Food Security Phase Classification
NGO	Non-governmental organization
OCHA	Office for the Coordination of Humanitarian Affairs
SETSAN	Technical Secretariat for Food and Nutrition Security
UNHCR	Office of the United Nations High Commissioner for Refugees
USAID	United States Agency for International Development

Key highlights

> The Food and Agriculture Organization of the United Nations (FAO) conducted a food security and agricultural livelihood impact assessment between January and February 2021, focusing on the impact of the coronavirus disease 2019 (COVID-19). A total of 1 183 households (730 agricultural households and 453 non-agricultural households) were interviewed in the provinces of Nampula in the northern region, Zambezia and Sofala in the central region, and Gaza in the southern region.

> The Confederation of Economic Associations of Mozambique (CTA) estimated that in 2020, COVID-19-related restrictions resulted in a USD 1.1 billion loss in revenue among private-sector actors. Of this total, 38 percent was associated with a decline in total hours worked as a result of employee rotation and mandatory quarantines. Consequently, nearly 90 000 employees were laid off from approximately 4 300 private companies.

> Mozambique is prone to recurrent natural disasters including floods, droughts, cyclones, landslides and earthquakes. The COVID-19 pandemic was an additional shock to an already vulnerable country.

> Among households that experienced shocks affecting their livelihoods, the most frequently mentioned by respondents included: natural disasters such as droughts and floods (49 percent of agricultural households and 18 percent of non-agricultural households); COVID-19 restriction measures (25 percent and 34 percent, respectively); and sickness or death of household members (18 percent and 33 percent, respectively).

> The most commonly reported reasons for decreased income among agricultural households were: COVID-19 restriction measures (49 percent of households); income losses including sickness or death of household members (20 percent); higher production costs (10 percent); difficulties in reaching markets (8 percent); and higher food prices (5 percent).

> Among non-agricultural households, the most-reported reasons for decreases in income were: COVID-19 restriction measures (74 percent); income losses including sickness or death of household members (20 percent); higher food prices (14 percent); unemployment (10 percent); and difficulties reaching markets (6 percent).

> Nearly three quarters of agricultural households (72 percent) experienced some difficulty with their crop production. The main difficulties were: dry spells or drought (affecting 59 percent of households); pests or diseases (15 percent); heavy rains or floods (13 percent); difficulty accessing seed (11 percent); and difficulties related to the COVID-19 pandemic (7 percent).

> Among crop-producing agricultural households who sold their crops, 82 percent experienced changes in their volume of sales. Of these respondents, 54 percent reported a reduction. The most reported challenges to crop sales were: lower-than-usual prices (22 percent); constrained access to markets due to movement restrictions (14 percent); lower-than-usual demand (9 percent); limited access to markets resulting from conflicts or insecurity (8 percent); and a reduction in the number of buyers (6 percent).

> Difficulties related to the COVID-19 pandemic have reduced the supply of labour for agricultural production. Almost half of agricultural households (48 percent) reported that daily agricultural labour in their communities changed over the three to six months prior to the assessment, with 83 percent reporting a reduction in employment.

> Livestock disease and difficulties accessing feed and veterinary services were the main reported challenges for livestock production in the four surveyed provinces. Of the 19 percent of livestock-rearing households that faced difficulties accessing feed, higher-than-usual feed prices (45 percent) and insufficient income (38 percent) were the most common challenges.

> Among livestock-rearing households who faced difficulties accessing veterinary services, the main reasons included an inability to access shops or markets (51 percent of households), and insufficient income to pay for veterinary services (43 percent).

> The assessment showed that the prevalence of moderate and severe food insecurity was 76 percent, while for severe food insecurity only, the prevalence was 46 percent, with variations across sampled provinces. The highest rates of moderate and severe food insecurity were in Nampula with 81 percent and Sofala with 77 percent, respectively.

> Across all sampled provinces except Zambezia, agricultural households were slightly more food insecure than their non-agricultural counterparts (82 percent versus 78 percent in Nampula province; 72 percent versus 77 percent in Zambezia province; 79 percent versus 73 percent in Sofala province; and 65 percent versus 59 percent in Gaza province).

> The assessment results suggest that special attention is needed to promote diversification of crop and livestock systems in order to build resilience against shocks such as the COVID-19 pandemic, extreme weather events, a lack of access to agricultural inputs (especially seed, fertilizer and feed), and pest and disease outbreaks.

Methodology

With financial support from the United States Agency for International Development (USAID), FAO leads the establishment of a data and analysis facility in the context of COVID-19 and other recurrent shocks. The objective of the facility is to improve decision making in support of the food security and livelihoods of all actors in key crop, livestock and fisheries value chains in high priority food crisis countries, with a focus on producers.

Data collection took place in January and February 2021, and covered four of Mozambique's 11 provinces: Nampula, Zambezia, Sofala and Gaza. These provinces were selected because they faced highest levels of food insecurity – Phase 2 or higher based on the Integrated Food Security Phase Classification (IPC) and the latest food security assessment by the Mozambique's Technical Secretariat for Food and Nutrition Security (SETSAN) (IPC, 2021; SETSAN, 2020). Due to movement restrictions and budget constraints, this assessment relied mainly on remote data collection using phone-based surveys with agricultural and non-agricultural households. Respondents were selected using the random digit dialing approach.[1]

Taking into account statistical representativeness (ensuring a 95 percent confidence level and a 6 percent of margin of error) at the provincial level, the sample comprised 730 agricultural households (crop-producing, livestock-rearing, and fishery-producing households), and 453 non-agricultural households, totaling 1 183 households. Figure 1 illustrates the sample distribution by province. The number of interviewed households in each province totalled: 299 in Nampula (177 agricultural and 122 non-agricultural); 293 in Zambezia (184 versus 109); 304 in Sofala province (183 versus 121); and 287 in Gaza (186 versus 101). Sampling weights were applied so that the proportion of households interviewed in each province matched the proportion in the target population.

Due to a lack of available data, it was not possible to consider statistical representativeness at the provincial level by type of agriculture practiced. However, the sampling approach took into consideration statistical representativeness for agricultural households as a whole. Among interviewed agricultural households across all provinces, the sample comprised 684 crop-producing households, 116 livestock-rearing households and 31 fishery-producing households. The sample size for livestock production was not large enough to be statistically representative at the provincial level (at least 90 interviewed in each province), but was large enough for statistical representativeness across all four target provinces. Analyses for livestock production were therefore conducted at the aggregate level by combining data from the four sampled provinces. The sample size for fishery production was too small for any meaningful analysis.

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[1] Random digit dialing is a probability sampling approach that constitutes: (i) random sampling of telephone numbers from a listing of assigned telephone numbers; (ii) dialing the selected numbers from a central call center; and (iii) administering the questionnaire through computer-assisted telephone interviewing.

Figure 1. Number of interviewed households by province
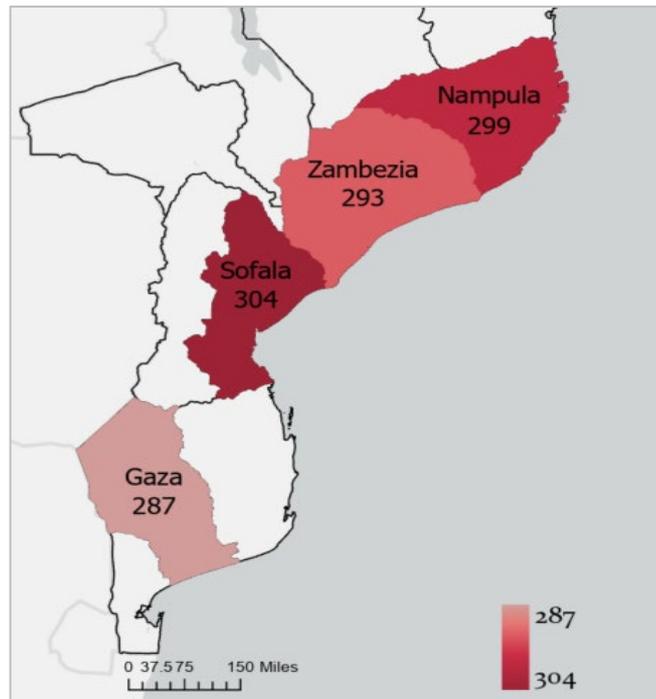
Source: OCHA Humanitarian Data Exchange, 2021; modified using FAO assessment data, February 2021

Within the monitoring system, data are collected approximately every three months, mainly through computer-assisted telephone interviews. Starting with the second-round data collection, information from household interviews will be triangulated with information from key informant interviews of stakeholders such as agricultural extension officers, agricultural input vendors and food traders. However, the core of data collection will remain a household survey that is statistically representative at the provincial level. The monitoring is implemented by FAO in collaboration with Mozambique's Ministry of Agriculture and Rural Development, SETSAN, humanitarian and development partners, and research institutes.

Background

The COVID-19 pandemic is an additional shock to an already vulnerable country. Mozambique is prone to recurrent natural disasters including floods, droughts, cyclones, landslides and earthquakes. Southern Mozambique is particularly prone to droughts, while Central and Northern Mozambique are prone to floods – both of these natural disasters occur nearly every two years in the country. The category-4 tropical cyclone Idai, which hit the central provinces of Zambezia, Tete, Manica and Sofala, and the southern province of Inhambane in 2019, ranks among the most devastating in decades, with severe human and physical impacts, and indirect socio-economic impacts even in locations not directly hit by the cyclone.

Nearly 1.5 million people – equivalent to 11 percent of the total population of the five directly affected provinces, and 5 percent of the country's total population – were affected by Idai. The cyclone's negative effects were exacerbated by Mozambique's severe food and nutrition insecurity – especially in the central region (Government of Mozambique, 2019). Six weeks after Idai struck, another category-4 tropical cyclone, Kenneth, struck the northern provinces of Nampula and Cabo Delgado, displacing nearly 20 000 people and resulting in at least 45 deaths (Office for the Coordination of Humanitarian Affairs [OCHA], 2021). Almost two years later, the severe tropical storm Chalane hit the province of Sofala and the category-2 tropical cyclone Eloise struck the provinces of Zambezia, Manica, and Sofala, affecting nearly 400 000 people and displacing 35 000 (Famine Early Warning Systems Network [FEWS NET], 2021a; International Federation of Red Cross and Red Crescent Societies, 2021; Protection Cluster, Mozambique, 2020).

Between October and November 2020, planting in the Southern region was negatively affected by erratic and weak rainfall coupled with above-average temperatures (FEWS NET, 2021b). Weak-to-moderate rainfall in the central and southern regions in mid-December 2020 encouraged farmers to begin planting. However, most farmers faced crop failure due to dry spells and temperatures above 40 degrees centigrade (dry conditions have persisted over the past five years in southern Mozambique). By contrast, the northern region received above-average rainfall between January and March 2021.

In addition, the expansion and intensification of armed conflict in Cabo Delgado province, which started in October 2017, and Sofala and Manica provinces, starting in August 2019, lead to the displacement of over 600 000 people by January 2021, causing many people to lose their livelihoods and food systems to be disrupted. This further exacerbated the vulnerabilities experienced by many in Mozambique,[2] and drove even more people into acute food and nutrition insecurity. Between February 2021 and May 2021, most of Mozambique's southern region faced a Stressed food security situation (IPC Phase 2)

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[2] According to estimates from the Office of the United Nations High Commissioner for Refugees (UNHCR) and the Government, as of January 2021 Mozambique held more than 25 000 refugees and asylum seekers, mainly originating in the Democratic Republic of the Congo and Burundi. It also held more than 700 000 internally displaced persons, (of which more than 600 000 were displaced due to armed conflict and approximately 90 000 due to natural disasters).

while a sizable proportion of the population in the central and northern regions faced either a Stressed or Crisis (IPC Phase 3) level of food insecurity. It is worth noting that all areas affected by cyclones, droughts and armed conflicts faced Stressed or Crisis levels of food insecurity.

Mozambique's currency, the metical, depreciated substantially between January 2020 and January 2021. During this period, data from the Mozambique Central Bank showed that the monthly exchange rate jumped 20 percent from MZN 62.7 per USD 1 to MZN 75.1 per USD 1. This depreciation is associated with the cyclones, droughts and armed conflicts experienced in the country. Food prices also rose during this time: data from the National Institute of Statistics indicate that the aggregate consumer price index increased by 5 percent in January 2021 compared to January 2020, while the consumer price index for food increased by 12 percent over the same period.[3]

In Maputo, maize grain and rice retail prices were generally higher in 2020 compared to 2019. Maize grain prices were also higher in 2020 than the five-year average for seven months out of the year (Figure 2), while rice prices in 2020 were similar to the five-year average price in seven out of 12 months (Figure 3). This suggests that prices for domestically produced crops (including maize grain) are rising, while prices for imported crops (such as rice) are relatively stable compared to the five-year average. Similar patterns were observed in the four surveyed provinces.

Figure 2. Retail maize grain prices in Maputo
(January 2019–December 2020 and five-year average)
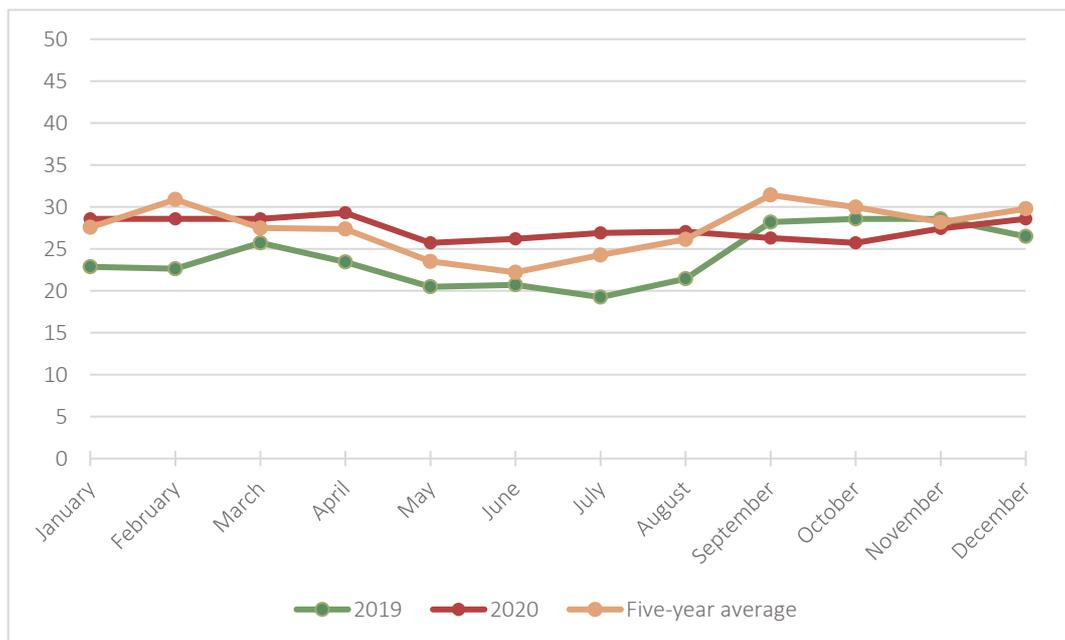
Source: Mozambique Agriculture Market Information System, 2020

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[3] The consumer price index is a measure of the aggregate price level in an economy.

Figure 3. Retail rice prices in Maputo
(January 2019–December 2020 and five-year average)

Source: Mozambique Agriculture Market Information System, 2020

COVID-19 and other risk factors in the country

According to Mozambique's Ministry of Health, as of 23 March 2021 Mozambique had 66 306 confirmed cases of COVID-19, resulting in 747 deaths. The first confirmed case of COVID-19 was reg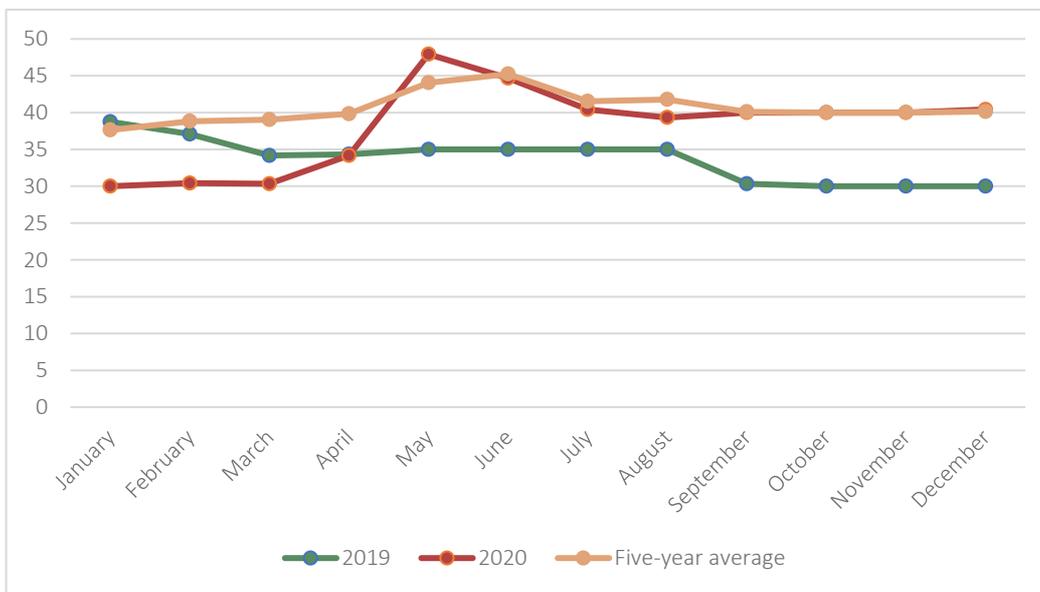istered in March 2020 and Mozambique witnessed its first COVID-19-related death on 25 May. COVID-19 infections and deaths exploded between January and February 2021: these two months accounted for 61 percent of the country's total recorded infections and 64 percent of the total recorded deaths until March 2021. Data collection for this assessment therefore took place during the peak of the COVID-19 pandemic (Figure 4).

From March 2020 through March 2021, recorded COVID-19 infections and deaths were concentrated in Maputo province, which had 57 percent of the total COVID-19 infections and 85 percent of all recorded COVID-19 deaths. All remaining provinces accounted for less than 6 percent of infections each and less than 3 percent of deaths.

In March 2020, Mozambique began putting in place measures to curb the spread of the COVID-19 pandemic, including: (i) a curfew from 22:00 until 04:00 every night in Maputo City and surrounding areas; (ii) prohibition of conferences, religious services and social events, except weddings limited to 20 people and government events limited to 50 people; (iii) restrictions on hours of operation of shopping centers, restaurants and local markets; (iv) movement restrictions including border closures, the issuance of visas, suspension of international flights and quarantine upon arrival; (v) closure of all public and private schools; (vi) workplace restrictions; (vii) public mask and social distancing mandates; and (viii) stay-at-home orders.

These COVID-19 measures are thought to have disrupted food systems, markets and livelihoods, especially in urban and peri-urban areas. Data from the National Institute of Statistics collected in June and July 2020 show that 90 percent of the 90 000 sampled enterprises were affected by the pandemic (National Institute of Statistics, 2021). Among affected enterprises, 56 percent adopted employee rotation as a preventive measure and 1 percent closed their doors. As a result, nearly 90 000 employees were laid off from 4 300 companies due to the pandemic. According to CTA, the pandemic caused a USD 1.1 billion loss in revenue to the private sector in 2020 (CTA, 2020). Of this loss, 38 percent was associated with the decline in the total hours worked as a result of employee rotation and mandatory quarantines.

Figure 4. Seven-day moving average of COVID-19 infections, recovered cases and deaths
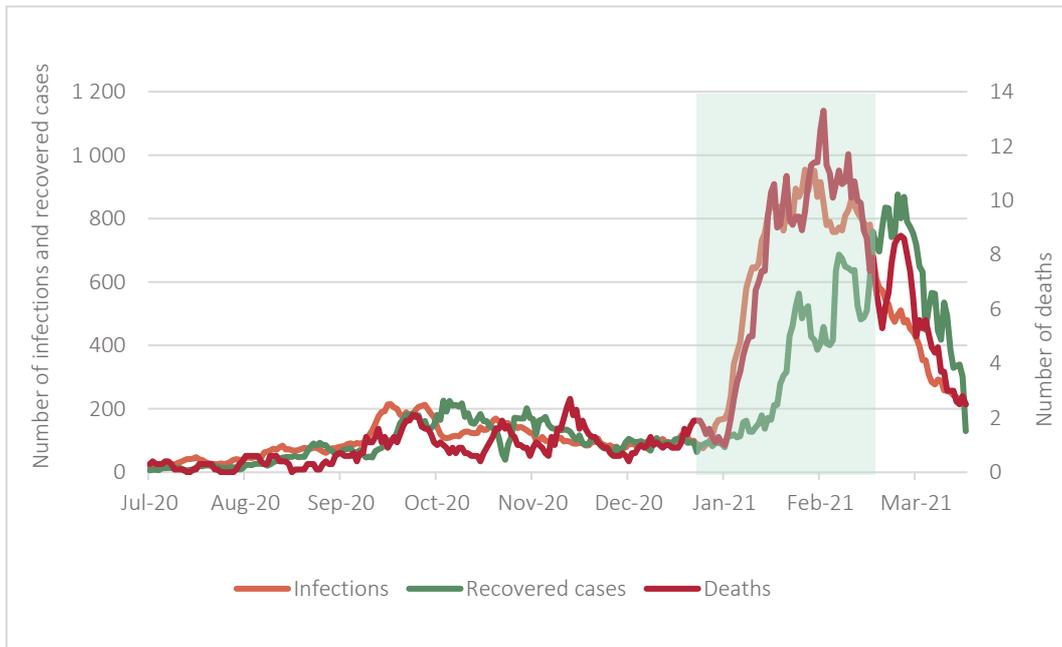
Source: Mozambique Ministry of Health, 2021

Agricultural production

Mozambique has two main seasons: (i) the harvest season, which runs from March to July in the northern region, and from February to June in the central and southern regions; and (ii) the lean season, which runs from December to March in the northern region, and from October to February in the central and southern regions. The seasonal calendar in the northern region differs slightly from the central and southern regions (Figure 5).

In the lean season, farmers' harvests have typically been depleted and farmers are dependent on the market while they wait for the new harvest. The vast majority of farmers who participate in the market sell their surplus production right after the harvest, when prices are the lowest, and buy the same crops from the market in the lean season when prices are highest (farmers sell low and buy high). This negatively affects their food and nutrition security.[4] The main planting occurs between November and February in the northern region and between October and January in the central and southern regions. The rain and cyclone season spans November through May in the northern region and October through April in the southern region (FAO, 2021).

Figure 5. Mozambique seasonal crop calendar
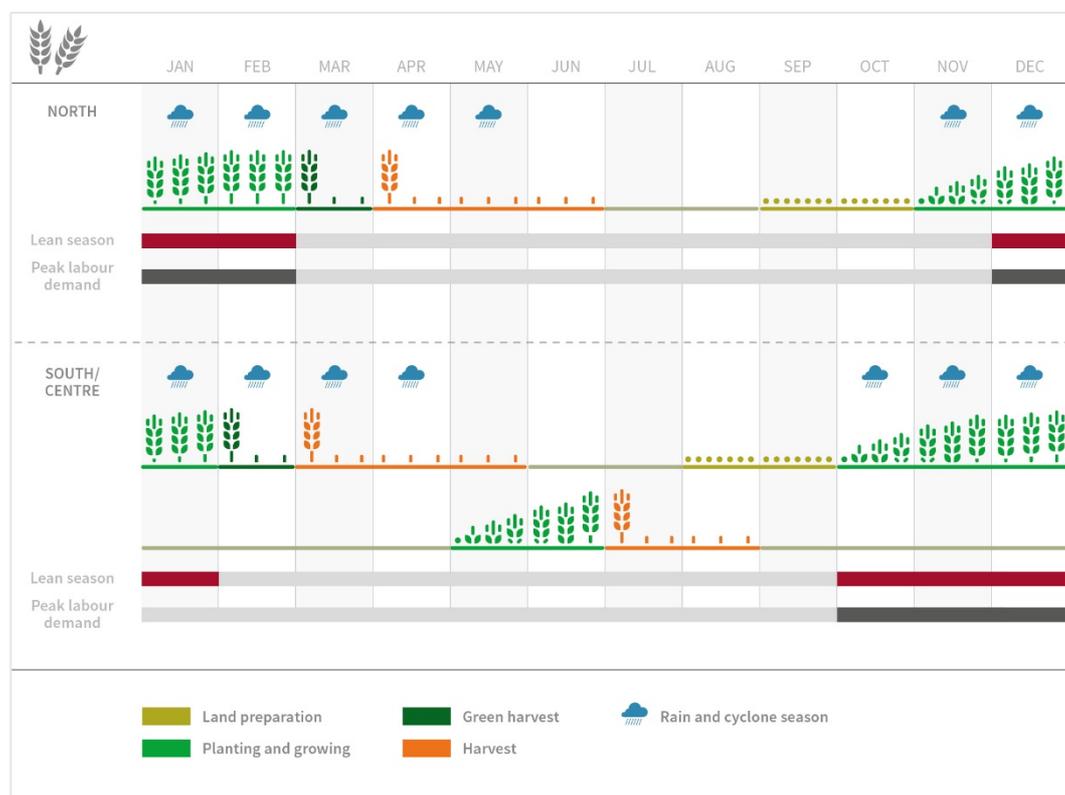
Source: FEWS NET, 2021b; FAO, 2021

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[4] Data from the nationally representative Integrated Agricultural Survey showed that 21 percent of maize growers – the main crop in terms of both number of growers and cultivated area – sold an average of 368 kg of their production per farmer in the 2016/17 agricultural season. This low level of market participation indicates that farmers did not earn enough income from crop sales to meet their daily requirements.

The northern region received above-average rainfall in October 2020 while dry conditions were experienced between Nampula in the northern region and Inhambane in the southern region (National Institute of Meteorology, 2021). Below-average rainfall was registered throughout the country in November 2020. The southern and central regions received above-average rainfall between December 2020 and February 2021, while the northern region received below-average rainfall (especially Nampula and Cabo Delgado provinces) during the same period.

Data collection for this COVID-19 assessment in Mozambique took place between January and February 2021, coinciding with the main planting season and beginning of the lean season in the northern region, and the middle of the lean season in the central and southern regions. This period also corresponds with the rainy season and the peak of labour demand for agricultural production in all three regions. During data collection, 88 percent of agricultural households indicated that they were growing at least one crop, with little variation across provinces (85 percent in Nampula, 91 percent in Zambezia, 88 percent in Sofala and 85 percent in Gaza). Among those who were not growing any crop during data collection, the top five reasons for not growing crops were: weather conditions including floods and droughts (cited by 30 percent of agricultural households); lack of credit (12 percent); erosion or poor soil quality (6 percent); lack of seeds, fertilizer or tools (5 percent); and too-expensive seeds, fertilizer or tools (5 percent).

Crops

Among agricultural households, 94 percent reported that crop production was one of their two main income sources in the past 12 months, with no difference across sampled provinces. Of these, 86 percent reported that crop production was their sole income source, 12 percent cited livestock production as their other main income source, and the remaining 3 percent reported crops and fisheries as their two main income sources.

The main crops grown by agricultural households in the surveyed provinces during the 2020/21 agricultural season were: maize, with 43 percent of households growing this crop; rice with 22 percent; peanut with 12 percent; roots and tubers (such as cassava and sweet potato) with 7 percent; sesame with 6 percent; and pigeon pea with 4 percent. The relative importance of these crops varied across sampled provinces. The three most important crops by province include: maize (38 percent), peanut (26 percent) and sesame (12 percent) in Nampula province; maize (41 percent), rice (38 percent) and pigeon pea (5 percent) in Zambezia province; maize (52 percent), rice (35 percent) and sesame (4 percent) in Sofala province; and maize (55 percent), roots and tubers (15 percent), and rice (11 percent) in Gaza province.

The vast majority of agricultural households (79 percent) reported that the cultivated area for their main crop in the 2020/21 agricultural season would change compared to the same period last year. Of those, 58 percent had increased their cultivated area and 42 percent had decreased their cultivated area. No major differences were observed among sampled provinces. Of agricultural households that reduced the cultivated area of their main crop, the top three reasons were: dry spells or drought (57 percent of households); heavy rains or floods (16 percent); and lack of labour (10 percent).

This finding underscores the high vulnerability of farmers to natural shocks such as droughts and floods.

Given that a lack of labour ranks among the top three main reasons for a reduction in cultivated area, data were analysed to determine whether the lack of labour was related to the COVID-19 pandemic. Among households that experienced a reduction in cultivated area compared to the previous year, the proportion of those citing COVID-19 restriction measures as one of their main reasons for decreased income was greater among farmers who reported lack of labour as one of the main reasons for a reduction in cultivated area than those who did not (42 percent versus 38 percent). This finding indicates that a lack of labour (a main driver of reduction in farmers' cultivated area) could be related to the COVID-19 pandemic.

The vast majority of agricultural households (93 percent) reported the expectation that their upcoming harvest would change, with little variation across sampled provinces. Among those who projected changes in expected main crop production volume, 58 percent reported an expected increase in production and the remaining 42 percent indicated a decrease, with some variation across sampled provinces (Figure 6). Nampula (53 percent) and Gaza (39 percent) are among the provinces with the highest share of agricultural households expecting a reduction in production of their main crop.

Figure 6. Harvest expectations for main crop grown in the 2020/21 agricultural season compared to the same period last year
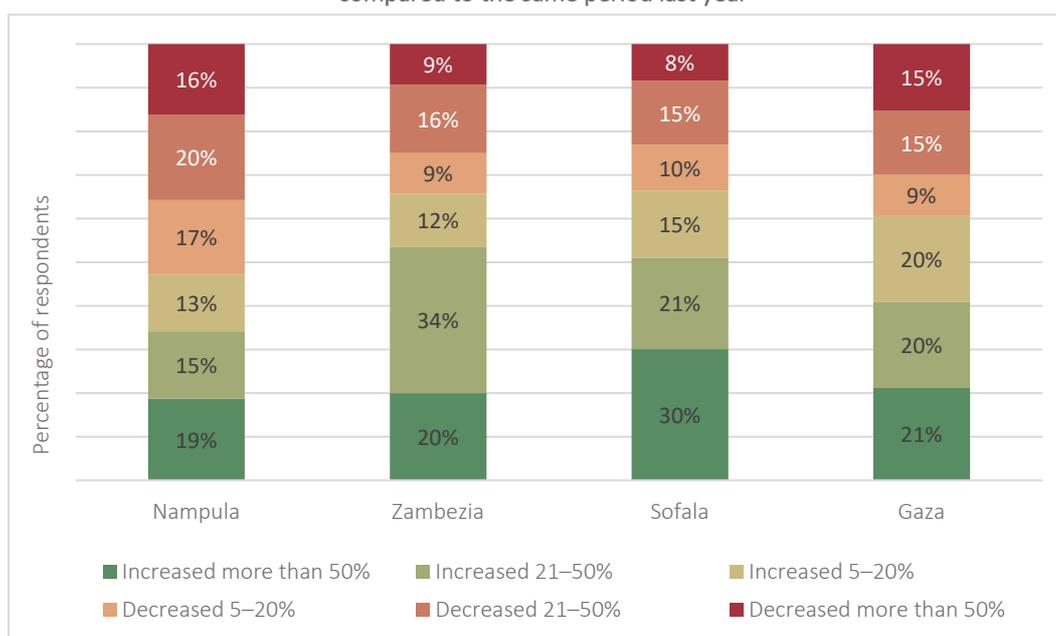
Nearly three quarters of agricultural households (72 percent) experienced some difficulty with crop production in the 2020/21 agricultural season, with no major differences among sampled provinces. The main crop-production difficulties included: dry spells or drought (affecting 59 percent of households that faced some difficulty); outbreak of pests or diseases (15 percent); heavy rains or floods (13 percent); difficulty accessing seeds (11 percent); and difficulties related to the COVID-19 pandemic (7 percent). Sofala had

both the largest share of agricultural households affected by heavy rains or floods (52 percent) and the smallest share of agricultural households affected by dry spells or droughts (19 percent).

As mentioned earlier, difficulties related to COVID-19 pandemic could have driven down the supply of agricultural labour. Nearly half of the agricultural households (48 percent) indicated that the daily agricultural labour force had changed over the past three to six months in the communities where they lived. Of these respondents, 83 percent reported a reduction in employment, with varying magnitudes across surveyed provinces (Figure 7). Furthermore, the share of respondents reporting a reduction in their income due to COVID-19 restriction measures was considerably greater among agricultural households who reported a reduction in daily agricultural labour than among those who reported an increase in labour availability (42 percent versus 21 percent).

Figure 7. Change in daily agricultural employment
in the past three to six months
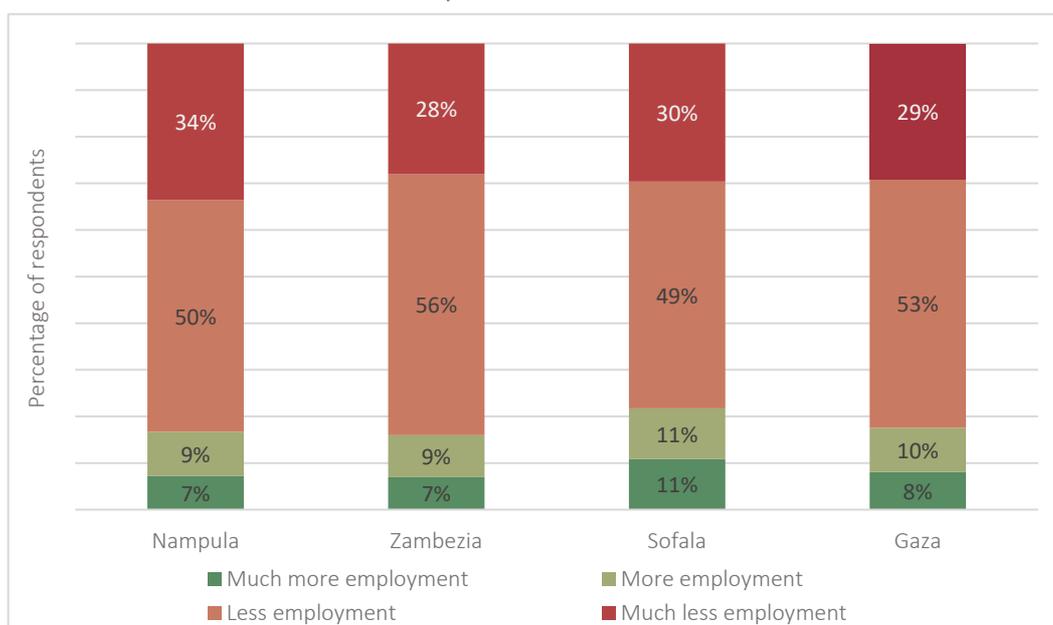
Source: FAO, 2021; FAO assessment results, February 2021

Of the 15 percent of households that faced an outbreak of pests or diseases: 55 percent were affected by grasshopper; 19 percent by African armyworm; 8 percent by fruit fly; and 7 percent by fall armyworm. Grasshoppers and African armyworm were consistently ranked among the top two most common pests or diseases across the sampled provinces.

Among agricultural households that faced difficulties accessing seeds (11 percent), the most widely reported challenges were: higher-than-usual seed prices (26 percent); unavailability of seeds from farmers' own production (23 percent); insufficient household income to buy seeds (13 percent); and low quality of available seeds (13 percent). Of those facing difficulties with seed access, 54 percent reported that these difficulties were new in the 2020/21 agricultural season and 47 percent indicated that the difficulties already existed, with some variation across sampled provinces (Figure 8). Furthermore, the proportion of agricultural households experiencing a reduction in income due to

COVID-19 restriction measures was greater among households that faced difficulties accessing seeds than for those who did not face seed-access difficulties (33 percent versus 16 percent).

A similar pattern was observed when comparing households indicating that their difficulty accessing seeds was new (48 percent) with those indicating existing difficulty (15 percent). These findings suggest that difficulty accessing seeds could potentially be related to the COVID-19 pandemic.

Figure 8. New and existing difficulties accessing seeds, by province (percentage of respondents)
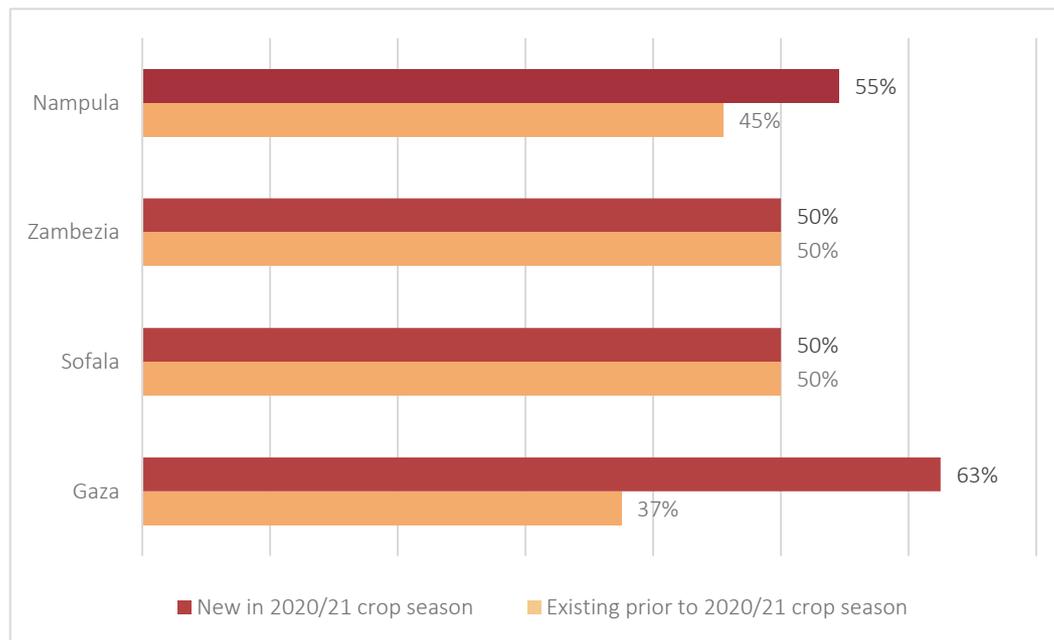
Source: FAO, 2021; FAO assessment results, February 2021

Livestock

While the sample size of livestock producers was not large enough for statistical representativeness at the provincial level (at least 90 interviews in each province), it was large enough to be statistically representative at the national level. Therefore, this section presents national-level results (unlike the previous section in which crop-production results were presented at the provincial level).

Among agricultural households, 16 percent reported that livestock production was one of their two main income sources in the past 12 months. Of these respondents: 69 percent reported crop and livestock production as their two main income sources; 29 percent cited livestock production as their sole income source; and the remaining 2 percent listed livestock and fisheries as their two main income sources. Of all agricultural households, 89 percent indicated that they were raising at least one animal during data collection.

Among agricultural households that were not raising any animal during the data-collection period, the top five reasons were: lack of credit (34 percent); loss of animals due to disease (18 percent); lack of grazing land (13 percent); lower-than-usual prices for live livestock and livestock products (13 percent); and lack of labour (6 percent). The most common animals raised by agricultural households for food and income in 2020 were: chicken (26 percent of households); goat (25 percent); guinea fowl (19 percent); duck (13 percent); and swine (8 percent).

The proportion of livestock-rearing households indicating that they faced difficulties with livestock production in 2020 stood at 68 percent. Of these households, 50 percent identified livestock disease as the main challenge they faced, followed by 19 percent reporting difficulty accessing feed, 9 percent reporting a lack of storage capacity and 6 percent reporting both difficulty accessing veterinary services and constrained access to water. This finding suggests that livestock disease and difficulty accessing feed are the main challenges faced by livestock-rearing households.

Of the 19 percent of livestock-rearing households that faced difficulty accessing feed over the last three months, higher-than-usual feed prices (45 percent of households) and insufficient income to purchase feed (38 percent) were the most common challenges. These difficulties were new to 79 percent of the livestock-rearing households who reported them. Among livestock-rearing households that faced difficulty accessing veterinary services over the last three months, the main reasons were inability to access shops and markets (affecting 51 percent of households) and insufficient income to pay for veterinary services (43 percent).

Access difficulties were new to 79 percent of livestock-rearing households who faced challenges accessing feed and 83 percent of those who had difficulty accessing veterinary services. That those difficulties were new for a sizable proportion of livestock-rearing households suggests that the COVID-19 pandemic may have augmented barriers to accessing livestock-input markets – especially for feed and veterinary services.

The vast majority of livestock-rearing households (80 percent) experienced changes in their herd size in 2020 compared to the previous year (Figure 9). Among livestock-rearing households whose herd size had changed, 66 percent reported a reduction, with major differences among provinces (54 percent in Nampula, 82 percent in Zambezia, 72 percent in Sofala and 64 percent in Gaza). The main reasons for a decrease in herd size in 2020 included: higher mortality due to pests and diseases (affecting 33 percent of households whose herd size decreased); higher mortality due to drought (18 percent); higher mortality due to lack of veterinary services (14 percent); issues related to the COVID-19 pandemic (11 percent); and distress sales for urgent cash (10 percent). These results suggest that: (i) constrained access to livestock inputs was a major factor in livestock production in 2020; and (ii) the COVID-19 pandemic negatively affected livestock production, albeit to a lesser extent than crop production.

Figure 9. Changes in herd size compared to the same period last year
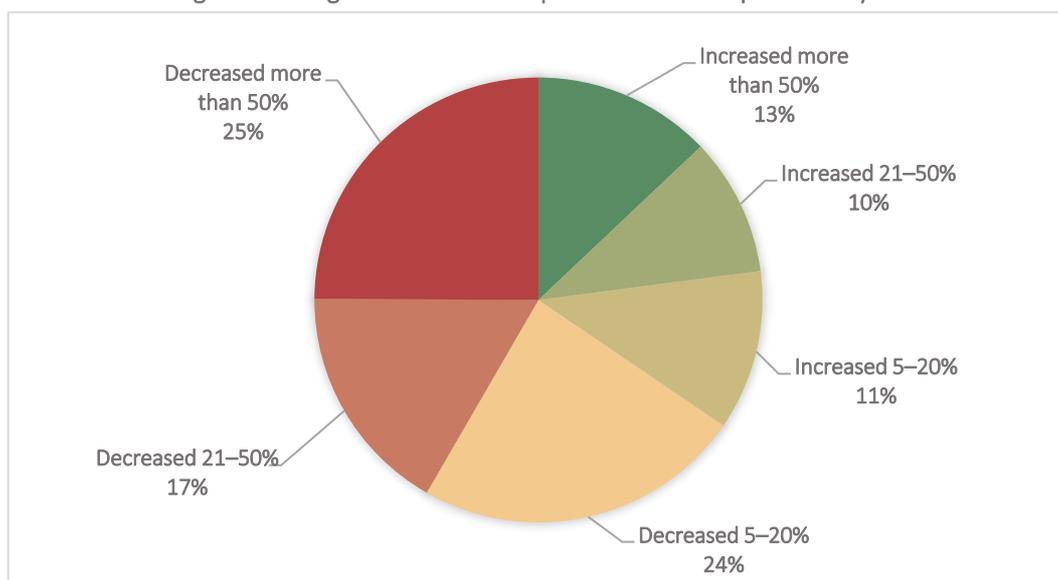
Source: FAO, 2021; FAO assessment results, February 2021

Food supply and markets

Markets are an important channel through which agricultural households not only sell their produce to generate income, but also purchase agricultural and non-agricultural commodities. Among agricultural households, 67 percent indicated the sale of food crops, cash crops or orchard products as their main income source in 2020.

This is consistent with results showing that 40 percent of agricultural households reporting crop production as one of their two main income sources sold their production over the three to six months prior to the assessment. By province, this share was 47 percent in Zambezia, 38 percent in Nampula, 35 percent in Sofala and 29 percent in Gaza. In addition, 9 percent of agricultural households also listed the sale of other agricultural commodities such as livestock, livestock products, fish and forest products among their two main income sources. Among agricultural households that included livestock production as one of their two main income sources, 59 percent sold livestock or livestock products over the past three months. These findings underscore agricultural households' high reliance on local markets for income generation.

Among crop-producing households that sold their crops over the past three to six months, 82 percent experienced changes in their crop sales, with minor differences among sampled provinces. Of those who experienced changes in sales, 54 percent reported a reduction compared to the same period last year, and the remaining 47 percent indicated an increase, with some variation across provinces (Figure 10). Sofala province, with 56 percent, had the highest proportion of crop-producing households reporting an increase in crop sales.

More than half of crop-producing households (54 percent) that sold their crops faced some unusual difficulty with crop sales over the past three to six months; this could be associated with the COVID-19 pandemic. The most frequently reported challenges included: lower-than-usual prices (22 percent of households); constrained access to markets due to movement restrictions (14 percent); lower-than-usual demand (9 percent); constrained access to markets due to conflict or insecurity (8 percent); and a reduction in the number of buyers in villages (6 percent). Lower-than-usual prices and constrained access to markets due to movement restrictions consistently ranked among the top two most common difficulties reported by crop sellers across surveyed provinces. This suggests that the COVID-19 pandemic may have disrupted agricultural commodity markets.

Among livestock-rearing agricultural households that rely on the sale of livestock or livestock products, 69 percent experienced a change in their sales over the three months prior to the survey. Of those who experienced such a change, 43 percent faced unusual difficulties. The most reported challenges related to livestock sales were: lower-than-usual demand (affecting 22 percent of households); lower-than-usual prices (14 percent); higher-than-usual transport costs (11 percent); and constrained access to markets due to movement restrictions (7 percent). As in the case of crop production, the COVID-19 pandemic appears to have had a negative impact on livestock markets.

Figure 10. Change in crop sales over the past three to six months
compared to the same period last year
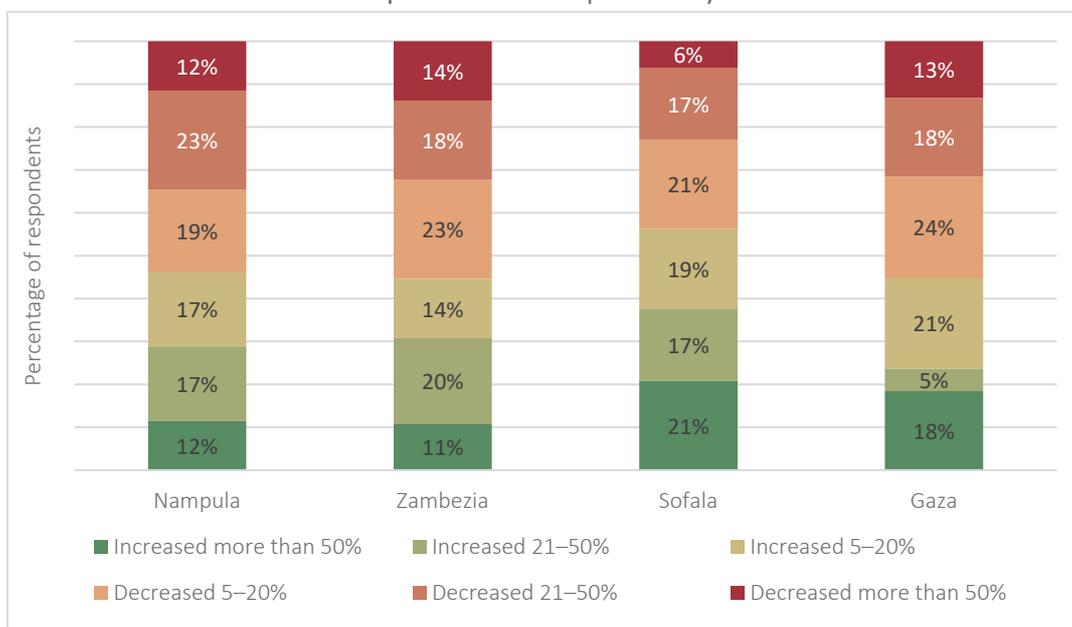
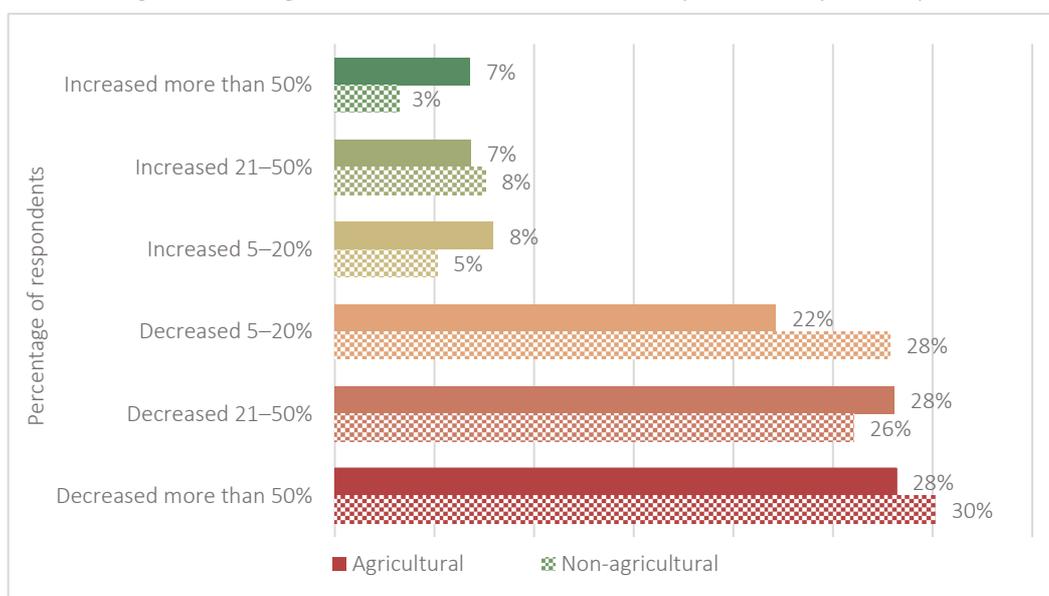Source: FAO, 2021; FAO assessment results, February 2021

Livelihoods, incomes and coping strategies

The relative importance of main income sources in 2020 differed between agricultural and non-agricultural households. As expected, agricultural households relied heavily on crop sales, while non-agricultural households depended on salaried work.

Following crop sales (reported by 67 percent of households), the most commonly reported income sources were salaried work (9 percent), self-employment (8 percent), the sale of livestock production (8 percent) and agricultural labour (2 percent). Among non-agricultural households, major sources of income included salaried work (45 percent), self-employment (43 percent) and remittances (4 percent).

Sizable proportions of both agricultural and non-agricultural households experienced income changes in 2020 compared to the previous year (76 percent and 71 percent, respectively). Among those who experienced changes in income, a higher proportion of non-agricultural households reported that their income decreased than agricultural households (84 percent versus 78 percent) across all surveyed provinces (Figure 11).

Figure 11. Changes in household income in 2020 compared to the previous year

Source: FAO, 2021; FAO assessment results, February 2021

The most commonly reported reasons for decreased income among agricultural households were: COVID-19 restriction measures (49 percent of households); income losses, including those due to sickness or death of household members (20 percent); higher production costs (10 percent); difficulty reaching markets (8 percent); and higher food prices (5 percent). Among non-agricultural households, the most commonly reported reasons included: COVID-19 restriction measures (74 percent of households); income losses, including those due to sickness or death of household members (21 percent); higher food prices; lost employment (10 percent); and difficulty reaching markets (6 percent). The rankings of reasons for decreased income were similar across all surveyed provinces.

These findings suggest that the COVID-19 pandemic has negatively affected household incomes, with greater negative impacts on non-agricultural households than agricultural ones. The fact that higher prices are ranked among the top three reasons for reduced household income is consistent with the finding that the aggregate consumer price index increased by 5 percent between January 2020 and January 2021, and maize grain and rice prices were higher in 2020 compared to 2019. Furthermore, non-agricultural households generally reside in urban and peri-urban areas, where COVID-19 restriction measures are more stringent. Indeed, COVID-19 restriction measures may have had greater impacts on the incomes of non-agricultural households than agricultural households, which usually reside in rural areas.

Only 6 percent of households received remittances during the three to six months prior to the survey, with a higher proportion of agricultural households (7 percent) receiving them than non-agricultural households (5 percent). Across provinces, Sofala (9 percent) and Gaza (8 percent) had the highest proportion of households receiving remittances, followed by Nampula (7 percent) and Zambezia (4 percent). Among those who received remittances, 59 percent of agricultural households and 70 percent of non-agricultural households experienced changes in their remittances over the three to six months prior to data collection, with 67 percent of non-agricultural households and 47 percent of agricultural households reporting a decrease.

Shocks other than income loss affected 43 percent of agricultural households and 40 percent of non-agricultural households in 2020. Among households that experienced such shocks, the most frequently reported were: natural disasters such as droughts and floods (49 percent of agricultural households and 18 percent of non-agricultural households); COVID-19 restriction measures (25 percent versus 34 percent); and sickness or death of household members (18 percent versus 33 percent). This is consistent with the finding that households in Mozambique are highly vulnerable to natural disasters (especially droughts and floods), and that the COVID-19 pandemic has disrupted food systems and local markets.

Adverse events such as natural disasters, death of household members and food price increases deplete households' resilience. As a result, many households adopt coping strategies that negatively impact their food and non-food consumption, leading to increased vulnerability and undermining their nutrition and well-being. To understand households' coping strategies and their impacts, respondents were asked whether any household member had resorted to coping strategies to feed their households in the last 30 days that they would otherwise avoid.

In the 30 days prior to the survey, nearly half of all households (46 percent) resorted to a Stress, Crisis, or Emergency coping strategy based on the Livelihood Coping Strategy Index (Figure 12), with a higher share among agricultural households (48 percent) than non-agricultural households (41 percent). Some variation was seen across sampled

provinces, from 37 percent in Gaza to 53 percent in Nampula for agricultural households, and from 31 percent in Gaza to 43 percent in Nampula for non-agricultural households.[5]

Figure 12. Respondent households' use of coping strategies
(Livelihood Coping Strategy Index)
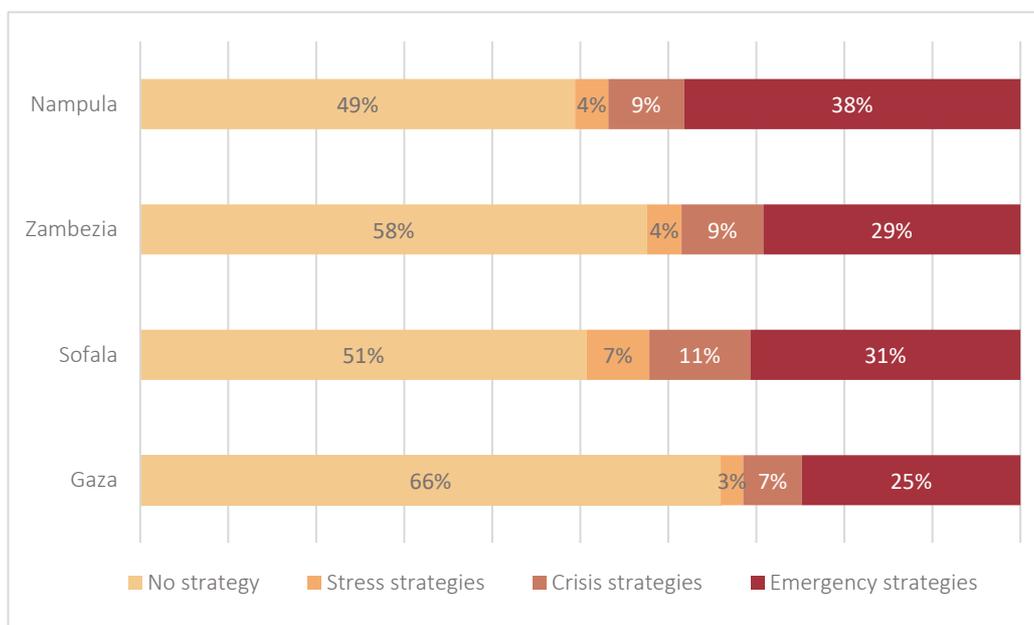
Source: FAO, 2021; FAO assessment results, February 2021

The adoption of Emergency coping strategies – more severe because they affect households' future productivity and are more difficult to reverse – was considerably more common among agricultural households (36 percent) than non-agricultural households (24 percent), with sizable differences across surveyed provinces. The greatest share of households resorting to Emergency coping strategies was found in Nampula (38 percent), followed by Sofala (31 percent), Zambezia (29 percent) and Gaza (24 percent). Given that coping strategies employed by households could be used as an indicator of food insecurity, the sizable share of households that resorted to Emergency strategies among both agricultural and non-agricultural households suggests a high prevalence of food insecurity among both groups. This is explored further in the next section.

To obtain a better understanding of dietary diversity (an indicator of the quantity and quality of household food consumption), respondents were asked whether any household member had consumed each of 12 food groups in the last 24 hours.[6] The Household dietary diversity score was used as an indicator of households' economic ability to access a variety of food items. Households reported a diversified diet, consuming on average six out of 12 food groups, with minimal differences across provinces and between agricultural and non-agricultural households. The top five most-

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[5] Stress-level coping strategies include spending of savings, sale of animals, purchase of food on credit and sending household members to eat elsewhere. Crisis-level coping strategies include the sale of productive assets, consumption of seeds and reduced expenditures on inputs. Emergency-level coping strategies include migration of the entire household, engagement in high-risk, socially degrading or exploitative temporary jobs, and begging.
[6] The 12 food groups are cereals, roots and tubers, vegetables, fruit, meat, eggs, fish, legumes, milk and dairy products, oils, sugar and condiments.

consumed food groups were cereals (consumed by 81 percent of households), oils (68 percent), vegetables (62 percent), fruits (58 percent) and fish (55 percent), with very little variation across provinces. Inadequate dietary diversity (at Crisis and Emergency levels) affected 27 percent of households (Figure 13). While there was no variation in dietary diversity between agricultural and non-agricultural households, major differences were observed across provinces, from 20 percent in Zambezia to 34 percent in Nampula. The fact that a sizable share of households had low dietary diversity suggests that households are vulnerable in terms of food access.

Figure 13. Household dietary diversity scores
(average of responses by province, expressed as IPC Phase)
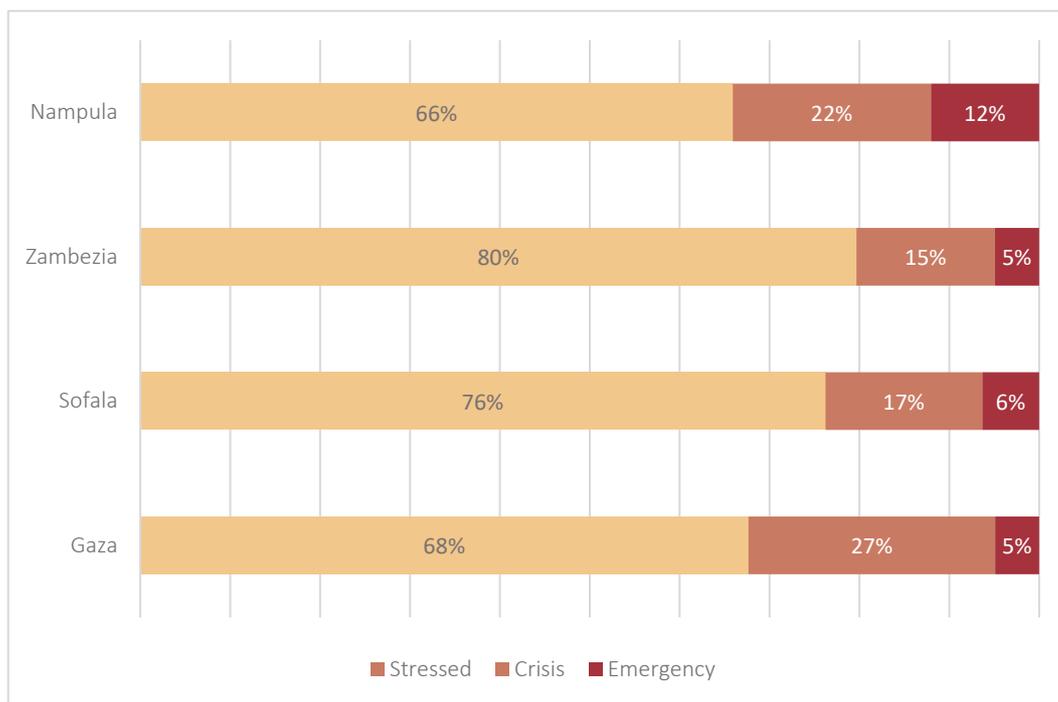
Source: FAO, 2021; FAO assessment results, February 2021

Food security

In order to assess food insecurity in the surveyed population within the past 30 days, an extended version of the food insecurity experience scale (FIES) was used in data collection. In addition to the standard eight questions referring to conditions and experiences typically associated with inability to access food, the survey included follow-up questions that allowed for a computation of the Household Hunger Scale. In addition to producing estimates of the prevalence of recent food insecurity, this scale enables estimates of moderate and severe hunger.

Using the FIES scale, the prevalence of moderate or severe food insecurity was estimated at 76 percent (46 percent for severe food insecurity alone), with fluctuations across provinces (Figure 14). By province, Nampula experienced the greatest food insecurity, with 81 percent moderately or severely food insecure (51 percent severely food insecure). It was followed by Sofala, with 77 percent moderately or severely food insecure (49 percent severe). This is consistent with the results presented in the previous section, which showed that Nampula and Sofala provinces had the highest proportion of households adopting Emergency coping strategies (38 percent and 31 percent, respectively).

Figure 14. Prevalence of moderate and severe food insecurity
(average by province based on FIES scores)
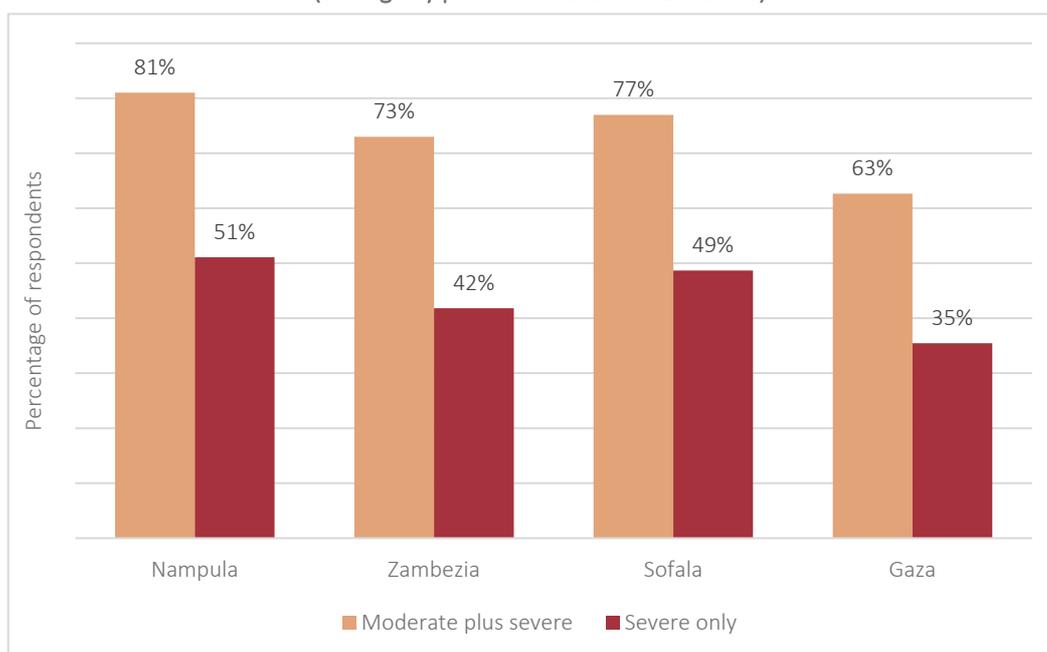
Source: FAO, 2021; FAO assessment results, February 2021

The analysis of FIES data reveals that across all provinces (with the exception of Zambezia), slightly more agricultural households experienced moderate or severe food insecurity than their non-agricultural counterparts (82 percent versus 78 percent in Nampula province; 72 percent versus 77 percent in Zambezia; 79 percent versus

73 percent in Sofala; and 65 percent versus 59 percent in Gaza). This suggests that agricultural households are more vulnerable than non-agricultural households.

FIES data also show that 65 percent of households experienced moderate or severe hunger (based on the Household Hunger Score) in the 30 days prior to data collection. Moderate or severe hunger was highest in Nampula province (70 percent), followed by Sofala (66 percent). The prevalence of moderate or severe hunger was also higher among agricultural households than non-agricultural households (66 percent versus 62 percent). By province, the prevalence for agricultural and non-agricultural households, respectively was: 72 percent and 66 percent in Nampula; 60 percent and 64 percent in Zambezia; 68 percent and 62 percent in Sofala; and 54 percent and 48 percent in Gaza (Figure 15). These patterns are consistent with those for food insecurity.

Figure 15. Prevalence of hunger (average by province
based on Household Hunger Score)
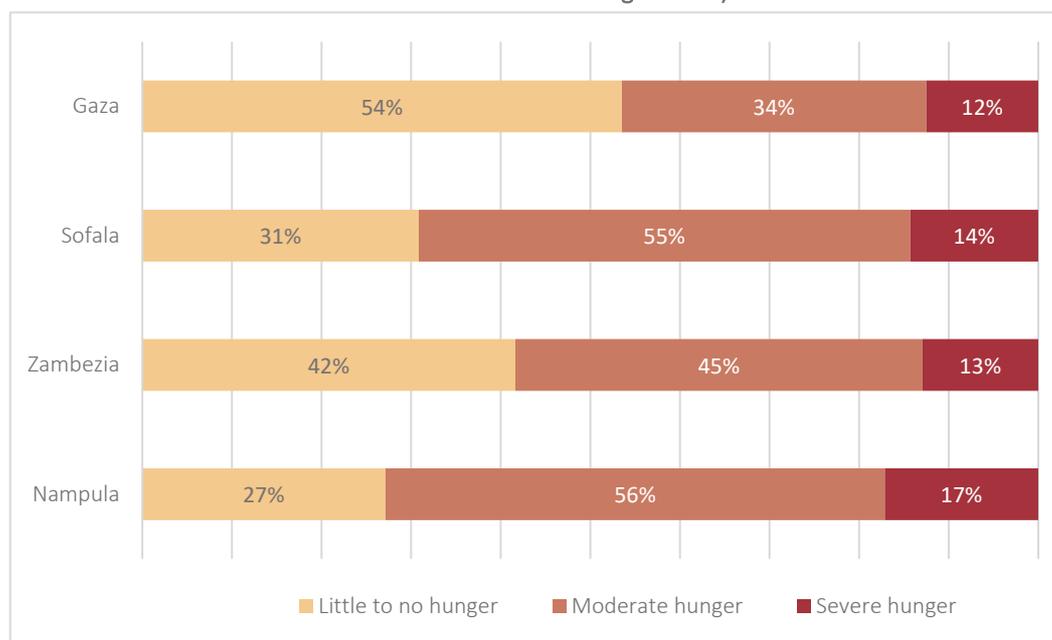
Source: FAO, 2021; FAO assessment results, February 2021

Most affected population groups and needs

The latest assessment by SETSAN found that between October and December 2020, 2 670 715 people faced a high level of acute food insecurity (IPC Phase 3 or above) (SETSAN, 2020). This includes 305 930 people facing Emergency levels of food security (IPC phase 4) and 2 364 785 people facing Crisis levels (IPC Phase 3).[7] During the same period, 8 775 562 people were in a Stressed food security situation (IPC Phase 2).

This SETSAN assessment also forecasted that between January and March 2021, the number of people facing acute food insecurity would increase to 2 917 217, including 264 689 facing Emergency food-security outcomes and 2 652 528 facing Crisis levels of food insecurity. The number of people facing Stressed food security was forecast to drop to 8 420 684 between January and March 2021. The largest increase in the number facing Crisis levels of food insecurity between January and March 2021 was expected in Cabo Delgado province, which is experiencing armed conflict.

The FAO assessment revealed that 91 percent of crop-producing households expressed the need for assistance with crop production over the next three to six months. The greatest need among crop-producing households was for seeds (59 percent of households), followed by tools (42 percent), cash assistance (32 percent), fertilizer (15 percent) and pesticides (13 percent). Similar rankings were observed across all sampled provinces. This suggests that difficulty accessing yield-boosting agricultural inputs (improved seeds, fertilizers and pesticides) is a major challenge faced by crop producers across the country.

In addition, 86 percent of livestock-rearing agricultural households reported the need for assistance with livestock production over the next three to six months. Among those who expressed the need for assistance, animal feed (44 percent), veterinary services (31 percent) and cash assistance (23 percent) were among the most frequently reported needs. This indicates that like crop-producing households, livestock producers are facing difficulty accessing inputs (such as animal feed and veterinary services). The findings also illustrate that both crop- and livestock-producing households have a strong preference for cash assistance.

Only 4 percent of agricultural households and 1 percent of non-agricultural households reported receiving assistance in response to the COVID-19 pandemic since March 2020. Among households who had received COVID-19-related assistance, food (21 percent) and cash (12 percent) were the most frequently reported modalities. For 66 percent of those households, the Government was the predominant provider, followed by religious organizations (17 percent), humanitarian organizations (8 percent) and local NGOs (2 percent).

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[7] Data were collected through computer-assisted telephone interviews using the random digit dialing approach. A total of 6 411 households were interviewed across all 11 provinces (10 districts and 12 cities).

Conclusion

The assessment reveals that that COVID-19 pandemic and related restriction measures were among the main drivers of decreased income in the sampled provinces (affecting 55 percent of households) and the most commonly reported shocks (28 percent of households) across the four provinces. Other concerns expressed by households included: a lack of agricultural inputs (especially seeds, tools, feed and veterinary services); outbreaks of pests and diseases; drought; and a reduction in daily agricultural labour, resulting in crop failure and higher livestock mortality.

Marketing difficulties were also reported as a major constraint across all four surveyed provinces. They were associated with lower customer demand, constraints to market access (including a lack of income) and increased transportation costs due to COVID-19 restriction measures. The assessment highlighted that food insecurity remains quite high across the four sampled provinces, especially among agricultural households. The provinces of Sofala and Nampula showed the highest rates of food insecurity.

Recommendations

It is recommended that special attention be given to programmes aimed at improving household-level food availability and access, with a focus on the most food-insecure households, alongside resilience building. Such support is crucial in Mozambique given the low resilience and chronic challenges reported by crop- and livestock-producing households, including a lack of access to agricultural inputs and veterinary services, and recurrent natural disasters. Moreover, programmes focused on the diversification of agricultural systems should be promoted in order to build households' resilience to extreme weather events.

Households in IPC Phase 3 and above require urgent assistance to prevent food consumption gaps and acute malnutrition, while those in in IPC Phase 2 require livelihood support to prevent a future deterioration in their food security. The lack of access to seeds and feed, and outbreaks of pests and disease also deserve special attention. Local household support programmes, especially those relying heavily on agricultural production, should be prioritized – especially those focused on the provision of seeds, fertilizers, tools and other productive assets (using electronic vouchers or similar mechanisms).

These programmes should be complemented by strengthened early warning systems to inform anticipatory action. Close monitoring of seasonal progress towards the upcoming harvest is critical to identify the most vulnerable areas and population groups. Local-level awareness raising is needed to ensure that actors along the food supply chain are not at risk of COVID-19 transmission. Revised modalities for agricultural extension are required along with protocols for compliance with hygiene and safety measures during the planting, harvest and sale of agricultural products. Support for the implementation of sanitary and phytosanitary measures in the downstream value chain should also be strengthened and intensified.

References

CTA. 2020. *Impact of COVID-19 on the Business Sector and Mitigation Measures* (*Impacto da COVID-19 no Sector Empresarial e Medidas para a sua Mitigação*). Maputo. https://covid19.cta.org.mz/wp-content/uploads/2020/08/IMPACTO-DA-COVID-19-NO-SECTOR-EMPRESARIAL-E-MEDIDAS-PARA-SUA-MITIGA%C3%87%C3%83O.pdf

CTA. 2021. *Business Robustness Index* (*Índice de Robustez Empresarial*) [online]. Maputo. [Cited May 2021]. https://cta.org.mz/indice-de-robustez-empresarial/

FAO. 2021. GIEWS – Global Information and Early Warning System: Country briefs – Mozambique. In: *Food and Agriculture Organization of the United Nations* [online]. Rome. [Cited May 2021]. www.fao.org/giews/countrybrief/country.jsp?lang=en&code=MOZ

FEWS NET. 2021a. *Mozambique food security outlook*: *Multiple shocks will drive above-average acute food insecurity after the main harvest* [online]. Washington, DC. [Cited May 2021]. https://fews.net/sites/default/files/documents/reports/MOZAMBIQUE_Food_Security_Outlook_02.2021_Final_0.pdf

FEWS NET. 2021b. *Southern Africa – Mozambique: February to September 2021* [online]. Washington DC. [Cited May 2021]. https://fews.net/southern-africa/mozambique

Government of Mozambique. 2019. *Mozambique cyclone Idai: Post-disaster needs assessment*. Maputo. Internal document.

International Federation of Red Cross and Red Crescent Societies. 2021. *Operation update: Mozambique, Africa, Tropical cyclone Eloise* [online]. Geneva. [Cited May 2021]. https://adore.ifrc.org/Download.aspx?FileId=392728

IPC. 2021. *Integrated Food Security Phase Classification* [online]. Rome. [Cited May 2021]. www.ipcinfo.org/ipcinfo-website/where-what/southern-africa/mozambique/en/

Mozambique Agriculture Market Information System. 2020. *Weekly crop price bulletins – January 2019–December 2020*. Maputo. www.agricultura.gov.mz/sima

Mozambique Ministry of Health. 2021. *COVID-19 monitoring data* [online]. Maputo. [Cited June 2021]. https://covid19.ins.gov.mz

National Institute of Statistics. 2021. *Results of the survey on impacts of COVID-19 on businesses (Resultados do inquérito sobre Impactos da COVID-19 nas empresas)*. Maputo. www.ine.gov.mz/estatisticas/estatisticas-sectoriais/resultados-do-inquerito-sobre-impacto-da-covid-19-nas-empresas.pdf/view

National Institute of Meteorology. 2021. *Mozambique climate monitoring* (*Monitoria climática de moçambique)* [online]. Maputo. [Cited May 2021]. www.inam.gov.mz/index.php/pt

OCHA. 2021. Cyclones Idai and Kenneth. In: *The United Nations Office for the Coordination of Humanitarian Affairs* [online]. New York and Geneva [cited May 2021]. www.unocha.org/southern-and-eastern-africa-rosea/cyclones-idai-and-kenneth

OCHA Humanitarian Data Exchange. 2021. Mozambique – Subnational administrative boundaries. In: *Humanitarian data exchange tools* [online]. The Hague. [Cited June 2021]. https://data.humdata.org/dataset/mozambique-administrative-levels-0-3

Protection Cluster, Mozambique. 2020. *Mozambique tropical storm Chalane response.* Maputo. www.globalprotectioncluster.org/wp-content/uploads/PC_Flash_Info_Mozambique_Chalane_Dec_2020_F.pdf

SETSAN. 2020. *Remote assessment report (mVAM) on food and nutritional security (Relatório da avaliação remota [mVAM] de segurança alimentar e nutricional)*. Maputo. www.agricultura.gov.mz/wp-content/uploads/2021/04/Relatorio-da-Avaliacao-Remota-de-Seguranca-Alimentar-e-Nutricional-Setembro-2020.pdf

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