YEMEN

Shocks, agricultural livelihoods and food security

Monitoring report
December 2021

Food and Agriculture Organization of the United Nations
Rome, 2021
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<td>FAO</td>
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<td>Food Insecurity Experience Scale</td>
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<td>Integrated Food Security Phase Classification</td>
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Key highlights

> The humanitarian crisis in Yemen continues to threaten the food security and livelihoods of millions. An IPC analysis in late 2020 estimated that 13.5 million people were highly food insecure (IPC Phase 3 and above), and that the number of highly food-insecure people would increase to 16.2 million in 2021 (IPC, 2021a).

> Restriction measures aimed at curbing the spread of the coronavirus disease 2019 (COVID-19) have affected Yemen’s agricultural value chains, from producers to consumers. These measures have impacted access to agricultural inputs, pastures, water and transportation of products to market.

> While nearly one quarter of surveyed households reported more than a 50 percent decrease in their main source of income over the previous three months, 84 percent reported having incurred debt that they had not been able to repay at the time of the survey. It is worth noting that the household survey was partly administered during the harvest season, in which cash income is generally higher than at other times of the year.

> The majority of households resorted to Crisis-level coping strategies to meet their immediate food and cash needs. The most commonly adopted strategies include: borrowing money or buying food on credit; reducing essential non-food expenditures; and reducing expenditures on agricultural, livestock or fisheries inputs.

> Despite a favourable weather forecast, 67 percent of surveyed households expected their crop production to be lower than the previous year. The majority (84 percent) experienced unusual difficulties in crop production, including pest infestations and high agricultural input prices.

> Compared to the previous year, 48 percent of surveyed households reported a decline in the number of livestock they owned. Major difficulties cited by livestock producers included animal disease and a lack of feed and veterinary services.

> Among fishers, 37 percent reported a decrease in fish production of over 50 percent during the last three months, citing a lack of fishing materials, reduced market demand and high fuel prices.
High transportation costs of food due to fuel shortages and limited movement due to COVID-19 restrictions have impacted food availability in markets within the areas surveyed. Compliance with COVID-19 safety protocols and movement restrictions has slackened over time, leading to an increase in market functionality between the first and second rounds of data collection.

Based on the Food Insecurity Experience Scale (FIES), the prevalence of recent moderate or severe food insecurity among respondent households in the previous 30 days was 55 percent. The prevalence of recent food insecurity consistent with Integrated Food Security Phase Classification (IPC) Phase 3 (Crisis) or higher was 23 percent. This marks an increase in the prevalence of food insecurity since the previous round.

Based on a combination of livelihood and food security indicators, the hardest-hit households were those: (i) whose primary source of income is from the sale of fisheries products; (ii) relying on agricultural and non-agricultural wage labour; and (iii) deriving their main income from humanitarian and other forms of assistance.

Cash, seeds, fertilizer, destocking and agricultural equipment were cited as priority needs. Between the first and second rounds of data collection, data on critical variables including agricultural production expectations, difficulties encountered by producers and livelihood coping strategies indicated a deteriorating situation.

Recommendations

Building resilience through restoration and diversification of livelihoods is crucial. The two rounds of monitoring data highlight the need to reinforce ongoing programming in the short and medium term.

Strengthening agricultural extension services and establishing a systematic food security and livelihood monitoring system could bring much-needed stability to farming households.
Methodology

With financial support from the United States Agency for International Development (USAID), the Food and Agriculture Organization of the United Nations (FAO) is implementing an agricultural livelihoods and food security monitoring system in the context of coronavirus disease 2019 (COVID-19) and other shocks. The objective of this assessment in Yemen is to monitor risks stemming from the impacts of the COVID-19 pandemic that may affect vulnerable communities’ food security and livelihoods, and provide early-warning information to support evidence-based decision making.

Within this monitoring system, data are collected using computer-assisted telephone interviews. The first round of data collection took place in July and August 2020. The current report is based in the second round of data collected between October 2020 and February 2021.

Data on household food security and livelihoods were collected using a standardized questionnaire. These data were triangulated with key informant interviews with 31 food traders, 63 agricultural extension officers and 66 input vendors. In addition, a desk review of other assessments on the impacts of shocks such as COVID-19 was carried out to validate the survey results.

The household survey was designed to be representative of vulnerable households at the district or governorate level with a 95 percent confidence level and a 6 percent margin of error. The sample for this survey was drawn from a verified list of beneficiaries of all active and closed FAO projects in Yemen.

Initially, the survey was designed to cover 4,500 households spanning 16 governorates. Of these, 3,897 households in 16 governorates could be reached by telephone during the data-collection period from November 2020 to February 2021 (Figure 1). The second-round sample included approximately half of the respondents that participated in the first round (994).

Since the survey was intended to be representative of vulnerable households living in food-insecure areas and depending on agriculture for their livelihoods, it cannot be considered representative of the entire population.
The governorates included in the assessment were determined by the availability of valid phone numbers in the beneficiary database (Figure 2). The selection of districts within these governorates was carried out through the: (i) identification of districts with a sufficient number of households with valid telephone numbers; and (ii) selection of districts with large proportions of people facing acute food insecurity (Integrated Food Security Phase Classification [IPC] Phase 3 and above).
Through the Food Security Information Network, FAO collects price data on food and non-food items across the country, supported by governorate focal units. Selection of food traders and agricultural input vendors was made based on information collected from these governorate focal units. Names of agricultural extensionists were collected from governorate-level offices of the Department of Agricultural Extension. There was substantial overlap in the geographical coverage of the household survey and key informant interviews.

Household data collected in the second round were not weighted. Respondent selection in the Al Mahwit governorate resulted in a very small sample size that was insufficient to produce statistically significant results at the governorate level; findings from this governorate are therefore indicative.
Shocks and risk factors in the country

The prolonged humanitarian crisis in Yemen – driven by conflict – has already had devastating consequences and continues to threaten the food security and livelihoods of millions of Yemenis. An IPC analysis conducted from October to December 2020 estimated that 13.5 million people were highly food insecure (IPC Phase 3 and above) (IPC, 2021a). This analysis also estimated that the number of highly food-insecure people would increase to 16.2 million between January and June 2021, even if humanitarian food assistance was maintained at the current level.

Already the poorest country in the Middle East and North Africa region, the conflict that escalated in mid-March 2015 has caused a further deterioration in Yemen’s economic and humanitarian situation. The impacts include large-scale displacement and a decline in domestic food production and economic activities. Now in its sixth year, the conflict continues to disrupt livelihoods, reduce incomes and seriously hinder the country’s economy. In 2020, the COVID-19 pandemic further exacerbated this ongoing crisis, exhausting the coping capacities of rural households and dramatically increasing humanitarian needs.

Economic and other shocks

Yemen’s economy has contracted sharply since the outset of the conflict: oil exports, humanitarian assistance and remittances are now its major drivers. The country’s already weak fiscal position has been eroded by low oil prices, the depletion of hard currency reserves and a decline in remittances. This economic decline and the high cost of imports due to the depreciation of the Yemeni rial has impacted the price of basic goods and agricultural inputs in markets as well (FAO, 2021c). In turn, the ongoing conflict and economic decline have steadily eroded peoples’ coping mechanisms, leaving large parts of the population at risk of food and livelihood insecurity.

Drop in remittances

Remittances are one of the primary sources of foreign currency in Yemen. With minimal job opportunities due to prolonged conflict, they are also a vital source of income for millions of people. But with the spread of COVID-19 in 2020, the flow of remittances dramatically shrank as the incomes of Yemenis working in the Gulf States, the United Kingdom and the United States plummeted (International Food Policy Research Institute [IFPRI], 2021). While a study by IFPRI showed all Yemeni households experiencing income loss in 2020 due to COVID-19, the impacts were significantly greater on poorer households because of their higher dependency on remittances.
High fuel prices, reliance on imports and currency depreciation

Prolonged conflict continues to compromise all economic activities, including agriculture. Agricultural inputs, mostly imported, remain in short supply and expensive. While fuel prices in early 2021 were down from their peak in 2018 (Figure 3), high fuel prices are still constraining agriculture – particularly irrigated crop production. To cope with elevated production costs, the results of this survey suggest that farmers have shifted from irrigated to rainfed crops, which have lower yields.

Figure 3. Fuel prices from January 2018 to January 2021


In the last ten years, the share of domestic wheat production in Yemen’s total food utilization has been only between 5 and 10 percent (depending on the harvest), and food imports in the data-collection period were almost 25 percent lower than in the same period in 2019 (FAO, 2020b). According to FAO’s monthly market monitoring, prices of key imported staple foods were on the rise throughout 2020 (FAO, 2021a).

Without stable sources of foreign exchange, an expansionary monetary policy has accelerated the depreciation of the Yemeni rial. Given Yemen’s high dependence on imports, the weakening of the currency has affected domestic prices, eroding households’ and businesses’ purchasing power (World Bank, 2021).

Gap in humanitarian assistance

At a time when Yemen should be expected to receive funds for tackling the humanitarian crisis triggered by conflict, the COVID-19 pandemic and natural disasters in 2020, a lack of funding was crippling humanitarian assistance in the country (Yemen Humanitarian Country Team, 2021). As a result, 15 out of 41 United Nations humanitarian programmes in the country were affected, erasing previous food security gains and leaving families with an increasing food consumption gap.

The Yemen Humanitarian Response Plan for 2021 appealed for USD 3.85 billion to provide humanitarian assistance to 16 million people in need; the food security sector constituted the largest share in this appeal (Oxfam, 2020). However, in the first quarter of 2021, the Yemen Food Security and Agriculture Cluster reported a gap in emergency
food and livelihood assistance. Humanitarian partners have warned that their alarming forecasts may underestimate the gravity of the situation, particularly if there are further cuts to humanitarian budgets (OCHA, 2020).

Communicable diseases

Since the escalation of the conflict in 2015, several communicable diseases including cholera, diarrhoea, dengue and measles have re-emerged in the country. The first COVID-19 case in Yemen was detected on 10 April 2020, with the number of cases peaking in June 2020 (FAO, 2020a). In March of that year, the Internationally Recognized Government (IRG), Southern Transitional Council and Sana’a based Authority (SBA) all imposed precautionary measures to prevent the spread of the virus, including the closure of land borders, curfews, restrictions on movement, social distancing measures, school closures and bans on gatherings and religious events (Figure 4).

From July 2020 onwards, there was a gradual decline in the number of new reported COVID-19 cases. The number of confirmed cases flattened in September, with a small increase thereafter. As of 31 January 2021, the cumulative number of reported cases was 2 125, with 616 deaths and 1 428 patients recovered (World Health Organization [WHO], 2021). Nonetheless, regional-level data on COVID-19 are available only in IRG-administered governorates (Yemen Humanitarian Country Team, 2020). Of the 11 governorates reporting on the pandemic, Hadramaut has reported the highest cumulative number of cases and fatalities, with Taiz, Aden, Shabwah and Lahj also reporting particularly high numbers of cases. Al Bayda has seen the highest cumulative death rate from COVID-19 of all reporting governorates.

Health partners remain concerned about under-reporting and that the official figures underestimate the full extent of COVID-19 in Yemen. Other factors hindering the COVID-19 response include a lack of adaptive behaviours to reduce transmission (Office for the Coordination of Humanitarian Affairs [OCHA] 2020), severe funding
shortages for health workers and personal protective equipment, and long delays in importing supplies for the COVID-19 response.

Compliance with pandemic-related restriction measures and safety protocols has slackened over time, as reflected in interviews with traders. In the first round, 84 percent reported that they had received a request to comply with safety protocols, while in the second round, such reports were reduced to 39 percent. Similarly, while 84 percent of extension officers in the first round reported that restriction measures were in place, while only 40 percent cited restrictions in the second round.
Agricultural production

Agriculture provides a source of income for more than half Yemen’s population and constitutes an important pillar of the country’s economy. Before the conflict, agriculture contributed between 18 percent and 27 percent of the country’s gross domestic product. But the humanitarian crisis has hit agricultural livelihoods hard, with cereal and livestock production falling drastically compared with pre-crisis levels. Contributing factors include an emigrating workforce, displacements, limited public resources available for the agriculture sector, ineffective research and extension services, and limited access to high-quality inputs and services (FAO, 2018a).

The second round of data collection indicated a further deterioration in agricultural production since the first round, especially with regard to crops and livestock (since the sample of fishers in the first round was very small, no comparison could be made).

Of the households surveyed in the second round, 89 percent were engaged in agricultural activities. More than half of these households were involved in both crop and livestock production (Figure 5). Relatively few households that were engaged exclusively in crop, livestock or fisheries production.

Figure 5. Livelihoods of surveyed households, by governorate (percentage of respondents)

Crops

The survey period (November 2020–February 2021) coincided with the time when Yemen’s main staple crops were out of season. However, in some areas like the southern highlands and uplands, harvesting of sorghum and wheat, and cultivation of the cash crop qat and vegetables like onions, potatoes and tomatoes was ongoing (Figure 6).

Figure 6. Yemen seasonal cropping calendar

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*major food crop

Source: FAO, 2018b.

A large majority of crop producers surveyed reported that they had cultivated the same amount of land this year as in the same period in the preceding year (Figure 7).
Among surveyed crop producers, a majority indicated that they mainly produce food crops (Figure 8). While 60 percent of respondents produce sorghum and 27 percent produce maize, wheat is produced by just 14 percent. Relatively fewer households are engaged in cash crop production, with millet, barley, tomato and qat as the most-reported cash crops.
In this second round of data collection, 65 percent of respondents reported that they depended on rain for crop production and 36 percent reported that they use irrigation (Figure 9). During this period, Yemen received less rain compared with the first round (August–September 2020), which was during the rainy season. It is worth mentioning that in the first round, 80 percent of the respondents reported practicing rain-fed crop production.

![Main sources of water for crop production](source: FAO, 2021; FAO assessment results, February 2021.

**Difficulties with crop production**

Among crop-producing households, 84 percent faced difficulties with their production during the three months prior to the survey, with nearly half describing these difficulties as significant.

More than half of crop producers identified a dry spell or water shortage, and one in four reported access to fertilizers or pesticides as a major difficulty. Outbreaks of pests and diseases were a major difficulty for 17 percent of respondents (Figure 10). Among respondents reporting pests and diseases, desert locusts were the most common infestation. Among the 14 percent that reported other difficulties, the most common were: (i) the high cost of irrigation; (ii) high fuel and energy prices; (iii) high prices of agricultural machinery; and (iv) land damaged by flood. In Al Jawf, Dhamar, Hadramaut, Lahj and Marib, more than 60 percent of respondents reported significant difficulties with crop production (Figure 11).
Figure 10. Unusual difficulties faced by the crop producers in the previous three months

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of storarge facilities</td>
<td>0.1%</td>
</tr>
<tr>
<td>Marketing or pricing difficulties</td>
<td>0.2%</td>
</tr>
<tr>
<td>Household members sick</td>
<td>0.5%</td>
</tr>
<tr>
<td>Lack of agriculture extension services</td>
<td>0.5%</td>
</tr>
<tr>
<td>Difficulty accessing credit</td>
<td>0.9%</td>
</tr>
<tr>
<td>Recent conflict/insecurity</td>
<td>1%</td>
</tr>
<tr>
<td>Labour not available</td>
<td>2%</td>
</tr>
<tr>
<td>Problems with irrigation infrastructure</td>
<td>3%</td>
</tr>
<tr>
<td>Hail/storms strong winds</td>
<td>3%</td>
</tr>
<tr>
<td>Access to land restricted by containment measures</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
</tr>
<tr>
<td>Heavy rains/floods</td>
<td>7%</td>
</tr>
<tr>
<td>Difficulty accessing seeds</td>
<td>16%</td>
</tr>
<tr>
<td>Labour too expensive or income insufficient to...</td>
<td>16%</td>
</tr>
<tr>
<td>Outbreak of pests or diseases</td>
<td>17%</td>
</tr>
<tr>
<td>Difficulty accessing fertilizers or pesticides</td>
<td>23%</td>
</tr>
<tr>
<td>Dry spell/drought/water shortage</td>
<td>54%</td>
</tr>
</tbody>
</table>


Figure 11. Significant difficulties in crop production in the previous three months, by governorate (percentage of respondents)

A lack of access to seeds was reported as an unusual difficulty in the previous three months by 16 percent of respondents. The most common reason for constrained access to seeds was high prices (Table 1).

Table 1. Reasons for difficulty accessing seed in the previous three months

<table>
<thead>
<tr>
<th>Types of difficulties faced in accessing seeds</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices of seeds are higher than usual</td>
<td>83</td>
</tr>
<tr>
<td>Household’s income is insufficient to buy seeds</td>
<td>41.1</td>
</tr>
<tr>
<td>Seed varieties usually used are not available</td>
<td>12.5</td>
</tr>
<tr>
<td>Seeds are not available from vendors</td>
<td>8</td>
</tr>
<tr>
<td>Seeds usually provided by aid or subsidies are not provided anymore</td>
<td>6.3</td>
</tr>
<tr>
<td>Seeds are not available from local market</td>
<td>2.7</td>
</tr>
</tbody>
</table>


Key informant interviews with agricultural extension officers and input vendors confirmed that access to seed was a difficulty for farmers: 65 percent reported that farmers were having difficulty accessing seeds for the current or upcoming planting season (23 percent reported a significant decrease). To cope with this, they reported that farmers were purchasing lower-quality seed, borrowing seeds from other farmers and reducing their planting area. They also stated that seed prices were higher than usual in the past month (44 percent of vendors reported a moderate increase while 45 percent reported significantly increased prices), and that supplies of seed, fertilizers and other inputs had decreased.

While interviews with agricultural extension workers yielded similar results to those of household survey respondents (citing seed access and crop pests and diseases as major challenges), they did not identify drought or water shortage as an issue, even though this was the most common difficulty reported by crop-producing households.

Crop production expectations

Normalized Difference Vegetation Index (NDVI) data showed that, except for some areas in the south, vegetation was normal during the survey period compared to the long-term average (FAO, 2020c). November 2020 to early February 2021 was relatively drier with less rainfall than normal, the majority of Yemen’s staple crops were not in season and crops were being harvested. Images from December 2020 and January 2021 show NDVI above the long-term average in the western and south-western parts of the country (Figure 12).
Despite 85 percent of respondents reporting that they were cultivating or planned to cultivate the same amount of land as the previous year, 77 percent anticipated lower yields compared to the same period (Figure 13).

Dry spells and water shortages, reported as an unusual difficulty by the majority of respondents, constitute a threat to both rain-fed and irrigated agriculture. Therefore, dry spells along with pest infestation may have lowered respondents’ production expectations.
In Marib, 55 percent of respondents expected “very much lower to almost no production”. This could be attributed to the unusual difficulties in crop production reported by 66 percent of surveyed households in the governorate. Since the majority of the respondents in Marib rely on wells for irrigation, dry conditions are likely to have reduced available groundwater, posing difficulties for crop production. In Abyan, Al Jawf, Hadramaut, Marib and Shabwah, a significant percentage of respondents reported high to very high levels of crop damage due to desert locusts. This could explain why more than 50 percent cited low expectations for the harvest in these governorates.

Unlike the respondents of the household survey, 49 percent of interviewed agricultural extension workers expected an increase in production (Figure 14). Of those that expected a decrease, 72 percent stated that it would be less than 25 percent compared to a normal year.
Over the years, domestic crop production has declined in Yemen due to prolonged conflict and related shocks. According to the FAO Global Information and Early Warning System on Food and Agriculture (GIEWS), the outlook for total cereal production in 2020 was 5 percent below that for 2019 and nearly 25 percent below the five-year average (Table 2). This forecast considered conflict-related constraints and pest outbreaks.

Comparison of first- and second-round data: crop production

Respondents’ expectations for crop production were lower in the second round of data collection than in the first round: 58 percent respondents in the second round expected lower crop production prospects in the current year than the previous year, compared to 44 percent in the first round.

Whereas 38 percent reported expecting a higher level of production in the first round, no respondents expected a greater amount of crop production in the second round (Figure 15). Between the two data-collection periods, no unusual events occurred to cause this discrepancy. However, the second round of data coincided with the harvest season, when producers are able to make more realistic estimates of yields and losses. The GIEWS forecast for 2020 crop production was 5 percent lower than for 2019.

Figure 15. Household respondents’ crop production expectations compared to same period in the previous year (percentage in first and second rounds)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production (thousands of tons)</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorghum</td>
<td>207</td>
<td>170</td>
</tr>
<tr>
<td>Wheat</td>
<td>155</td>
<td>140</td>
</tr>
<tr>
<td>Millet</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>Other</td>
<td>58</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>475</td>
<td>385</td>
</tr>
</tbody>
</table>


In the second round, 84 percent of crop producers reported facing minor or significant difficulties in the past three months as opposed to 68 percent in the first round (Figure 16).
In the second round, the majority of crop producers reported dry spells and a shortage of water as major difficulties, whereas heavy rains and floods were most cited in the first round. This relates to the time of the surveys: the first round was conducted during the rainy season while the second round took place in the months with lowest and most infrequent rainfall. Outbreaks of pests and diseases, and difficulties accessing inputs like fertilizers and seeds were cited consistently in both rounds of data collection.
Livestock

Respondent households engaged in livestock production (68 percent of all respondents) are small-scale producers mostly raising sheep, cattle and goats (Table 3). It is worth noting that raising small ruminants is an important source of incomes for the rural communities.

Table 3. Number of livestock owned by household survey respondents
(and percentage of each livestock type)

<table>
<thead>
<tr>
<th>Type of livestock</th>
<th>Percentage (number)</th>
<th>1 to 5</th>
<th>5 to 10</th>
<th>10 to 20</th>
<th>20 to 30</th>
<th>30 to 50</th>
<th>50 to 80</th>
<th>Over 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>83% (n=2 243)</td>
<td>46%</td>
<td>33%</td>
<td>14%</td>
<td>4%</td>
<td>3%</td>
<td>1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Goats</td>
<td>39.7% (n=1 073)</td>
<td>66%</td>
<td>26%</td>
<td>7%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Cattle</td>
<td>29.5% (n=797)</td>
<td>98%</td>
<td>2%</td>
<td>0.4%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poultry</td>
<td>7% (n=190)</td>
<td>61%</td>
<td>28%</td>
<td>8%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Donkeys</td>
<td>5.9% (n=160)</td>
<td>99%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Camels</td>
<td>1.7% (n=46)</td>
<td>91%</td>
<td>7%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Beehives</td>
<td>1.5% (n=40)</td>
<td>30%</td>
<td>25%</td>
<td>10%</td>
<td>10%</td>
<td>18%</td>
<td>5%</td>
<td>3%</td>
</tr>
</tbody>
</table>


Livestock production difficulties

Among households engaged in livestock production, 74 percent reported facing difficulties, with 41 percent citing these difficulties as significant (Figure 17).

Of the 1 988 livestock-producing households that reported experiencing difficulties, the top four were lack of access to feed, outbreaks of pests and diseases, limited access to veterinary services and a lack of access to pasture (Figure 18).
Figure 17. Households experiencing unusual difficulties in livestock production in the previous three months, by governorate (percentage of respondents)


Figure 18. Unusual difficulties cited by livestock-producing households in the previous months (percentage of respondents)

- Difficulty accessing credit: 0.5%
- Household members sick: 0.6%
- Conflict / insecurity: 0.9%
- Heavy rains / floods: 0.9%
- Other: 1%
- Difficulty accessing veterinary inputs: 4%
- Constrained access to water / water shortage: 10%
- Constrained access to pasture: 14%
- Difficulty accessing veterinary services: 19%
- Outbreak of pests or diseases: 56%
- Difficulty accessing feed: 63%


It is worth noting that the high percent of households reporting animal disease as a shock (55 percent) is linked to a lack of access to veterinary services. Of households reporting a lack of access to veterinary services, 71 percent indicated this was due to higher prices than usual. In addition, 73 percent reported that higher-than usual prices were a barrier to accessing inputs (Table 4).
Table 4. Reasons for livestock-producing households’ inability to access veterinary services and inputs in the previous three months

<table>
<thead>
<tr>
<th>Reasons for difficulty</th>
<th>Percentage of respondents reporting unusual difficulties accessing veterinary services</th>
<th>Percentage of respondents reporting unusual difficulties accessing livestock-production inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices higher than usual</td>
<td>71</td>
<td>73</td>
</tr>
<tr>
<td>Insufficient income</td>
<td>47</td>
<td>33</td>
</tr>
<tr>
<td>Not available from usual provider</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Not able to access provider</td>
<td>21</td>
<td>17</td>
</tr>
</tbody>
</table>


More than 70 percent of household respondents stated that the prices of feed, veterinary services and inputs were higher than usual and were not affordable. Many agricultural extension workers also identified a lack of feed and livestock disease as the main shocks experienced by livestock producers, followed by lack of access to pasture, water, and veterinary services.

As a result of conflict, drought, natural disasters, environmental degradation and encroachment of other livelihoods activities, Yemen’s natural grazing areas are not sufficient to meet the needs of livestock producers. In addition, continuing conflict and displacement have disrupted watering and feeding systems, thus limiting the movement of livestock in their normal natural grazing areas. (FAO, 2018c). This may be forcing households to purchase feed for livestock at a higher cost (Table 5).

Table 5. Reasons for livestock producing households’ inability to access feed in the previous three months

<table>
<thead>
<tr>
<th>Reasons for difficulty</th>
<th>Percentage of respondents reporting difficulty accessing feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices higher than usual</td>
<td>79</td>
</tr>
<tr>
<td>Income insufficient to purchase</td>
<td>71</td>
</tr>
<tr>
<td>Not available from the usual vendor</td>
<td>3</td>
</tr>
<tr>
<td>Not able to access market to purchase</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.5</td>
</tr>
</tbody>
</table>


Change in number of livestock owned

Forty-seven percent of livestock-producing households reported a decrease in the number of livestock they owned compared to the same month in the previous year. More than 50 percent of households in the governorates of Al Dhale’e, Al Jawf, Hajjah, Marib, Raymah and Taiz reported a decrease in livestock numbers compared to last year (Figure 19).
In key informant interviews, 45 percent of extension workers reported that they expected a decrease in livestock production of more than 25 percent this season.

Of the households who reported a decline in numbers of livestock, the majority attributed this to diseases (Figure 20). Livestock disease was also mentioned by 23 of 63 agricultural extension workers along with lack of feed as the top two biggest shocks this season affecting livestock production.
Comparison of first- and second-round data: livestock production

No significant deterioration was observed in livestock ownership (compared to the same month in the previous year) between the first and second rounds of data collection. In the first round, 50 percent of livestock producers reported a decline in their numbers compared to 47 percent in the second round (Figure 21).

Figure 21. Change in livestock ownership compared with the same month in the previous year

![Bar chart showing change in livestock ownership](chart1.png)


In the second round, 74 percent of livestock producers faced minor or significant difficulties in compared to 51 percent in the first round (Figure 22). In both rounds, households and key informants reported three major difficulties: animal pests and diseases; lack of access animal feed; and lack of access to veterinary services.

Figure 22. Livestock production difficulties in the previous three months (percentage of respondents in first and second rounds)

![Bar chart showing livestock production difficulties](chart2.png)

Effects of desert locust on crop and pasturelands

In the third quarter of 2020, there was a severe desert locust infestation in the interior and south coast of Yemen. During October and November of that year, the infestation declined in the interior but increased along the Red Sea coast as another generation of breeding occurred. In January 2021, FAO forecasted that in the absence of further rainfall, breeding would be limited. Yet the risk continued in inaccessible areas on the coast and the highlands (FAO, 2020c; FAO, 2020d; FAO, 2020e).

In the second round of data collection, the impacts of desert locust on crop and pasturelands were assessed through household interviews and key informant interviews with extension officers. Household respondents reported on the impacts of desert locust in the three months prior to the survey. Of all respondents engaged in crop or livestock production, 56 percent reported seeing desert locusts in their fields or pastures during that time (Figure 23).

Reports of damage to crop pasturelands were fewer that reports of seeing the desert locust: 28 percent of crop-producing households and 27 percent of livestock-rearing households respectively experienced damage to crop and pasturelands in the previous three months. It is worth noting that only 17 percent of crop-producing households reported crop pests and diseases as an unusual difficulty.

In Abyan, Marib, Al Jawf and Shabwah, the majority of the respondents experienced damage to crop and pastureland by desert locusts in the previous three months (Figures 24 and 25). In these governorates, more than 60 percent of crop producers expected lower crop production than in the previous year. However, looking only at livestock producers, infestation of pastureland and constrained access to pastureland were not reported as unusual difficulties.
Key informant interviews with the agricultural extension workers confirmed that desert locust caused serious damage to the crops and pasturelands.

Of the households who reported that croplands were affected, only 24 percent had already harvested their crops while the remaining 76 percent had crops at various stages of growth, which makes them vulnerable to infestation by the desert locust. This finding was supported by interviews with agricultural extensionists, 77 percent of whom reported that the crops were at various stages of cultivation during the desert locust infestation. In addition:

- more than 80 percent of agricultural extensionists reported damage to crops and pasturelands;
- 48 percent reported that the majority of all croplands were affected;
- 57 percent reported of very high to high level of damage to affected crops; and
- nearly 20 percent reported that the majority of pasturelands were damaged.
Fisheries

COVID-19 restriction measures have had particular impacts on fishers and their livelihoods. Before the outset of the conflict, fisheries was the third most important sector to Yemen’s economy after agriculture and oil production, contributing up to 3 percent of the gross domestic product (International Fund for Agricultural Development [IFAD], 2010). But since the conflict began, the fishing industry has faced an increasing number of challenges, including a significant drop in production due to the displacement of many fishers and their workforce (Sana’a Center for Strategic Studies, 2020).

In the second round, fisher households comprised only 7 percent of the sample, with the majority residing in coastal governorate Aden and some in Al Hudayda.

Difficulties in fisheries production

In the past three months, 75 percent of fisher households reported experiencing significant difficulties with fisheries production, and 19 percent reported minor difficulties (Figure 26).

More than 50 percent of fisher households cited lack of fuel, high prices of fuel and lack of access to fishing inputs as unusual difficulties (Figure 27). Boat repairs and fishing gear were particularly difficult to access during this period.

Unlike crop and livestock producers, one in three fishers reported that restrictions related to COVID-19 were deterring the marketing of their production. In addition, 31 percent reported fewer fish available as a major constraint. Since fisheries production in Yemen mainly depends on the sea, new restrictions on access to some fishing zones because of insecurity may have restricted production (Norwegian Refugee Council, 2021).
In addition, more than one quarter of fishers mentioned limited access to fishing boats as an unusual difficulty. Other difficulties included bad weather, turbulent seas and security issues.

Reporting on amounts of fish caught was based on a three-month recall period, which partly overlaps with the windy monsoon season known to inhibit fishing activity; this was also mentioned as an unusual difficulty by some fishers. Forty-five percent of fishers reported a greater than 50 percent decrease in the number of fish caught in the three months prior to data collection (Figure 28).

This decline in catch indicates a subsequent drop in the sale of fish, which is likely to have serious implications on the incomes and food security of fisher households. The assessment findings also revealed that of all agricultural households, fisher households experienced the greatest decline in income during the reporting period.

Figure 27. Unusual difficulties experienced by fishers in the previous three months (percentage of respondents)

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of labour or difficulties paying for labour</td>
<td>1%</td>
</tr>
<tr>
<td>Lack of storage and processing facilities</td>
<td>3%</td>
</tr>
<tr>
<td>Lower market demand for fish</td>
<td>4%</td>
</tr>
<tr>
<td>Decreased price of fish</td>
<td>7%</td>
</tr>
<tr>
<td>Lower price offered for fish than normal</td>
<td>21%</td>
</tr>
<tr>
<td>Other</td>
<td>25%</td>
</tr>
<tr>
<td>Lack of access to fishing boat</td>
<td>26%</td>
</tr>
<tr>
<td>Fewer fish available</td>
<td>31%</td>
</tr>
<tr>
<td>Restrictions related to COVID-19</td>
<td>33%</td>
</tr>
<tr>
<td>Lack of access to fishing inputs</td>
<td>58%</td>
</tr>
<tr>
<td>Lack of or high price of fuel</td>
<td>59%</td>
</tr>
</tbody>
</table>


Figure 28. Change in number of fish caught in the previous three months (percentage of respondents)

<table>
<thead>
<tr>
<th>Change in Number of Fish Caught</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase over 25%</td>
<td>3%</td>
</tr>
<tr>
<td>Increase up to 25%</td>
<td>4%</td>
</tr>
<tr>
<td>No change</td>
<td>11%</td>
</tr>
<tr>
<td>Decrease up to 25%</td>
<td>45%</td>
</tr>
<tr>
<td>Over 50% decrease</td>
<td>37%</td>
</tr>
</tbody>
</table>

Food supply and markets

The marketing of agricultural products in Yemen presents challenges at all levels. Small-scale farmers have little access to extension services to provide them with advice on markets for their products – mainly because Yemen lacks an effective market information system. Small farmers are also disadvantaged by the limited marketing opportunities provided by traditional retail and wholesale markets, and the country’s lack of farmer organizations (Al-sabai and Neszmélyi, 2019).

In the household survey, 42 percent of respondents reported that the sale of their agricultural products in the past three months had dropped by more than 25 percent compared to the same period in the previous year (Figure 29). In Raymah governorate, 67 percent of agricultural producers reported a significant or drastic decline in agricultural sales; in Aden, 64 percent reported such a decline, followed by Marib with 56 percent and 51 percent in Al Hudayda.

Figure 29. Sale of crops, livestock and fisheries products in the previous three months compared to the same period in the previous year, by governorate (percentage of respondents)


Fisher households were most severely affected by the decline in the sale of agricultural products: more than 60 percent of fishers reported that their sales had decreased more than 25 percent. However, focusing on drastic (over 50 percent) declines in sales, crop-producing households were worst hit of all the agricultural households (Figure 30).

The majority of fisher households in this sample reside in Aden, which explains the very high reporting of decreased sales among agricultural producers in this governorate.
One quarter of household respondents engaged in agricultural activities reported experiencing unusual difficulties in selling agricultural production in the last three months, of which 10 percent cited their difficulties as significant.

Of household respondents that reported marketing difficulties, 55 percent mentioned low prices for agricultural production as their greatest difficulty and 29 percent mentioned higher transportation costs (Figure 31).

By governorate, producers in Aden reported the greatest marketing difficulties (41 percent) followed by Marib (29 percent) and Al Jawf (21 percent). In other governorates, respondents reported relatively fewer difficulties with agricultural marketing. For one third of respondents, the survey questions on marketing were not applicable at that time of year (no seasonal production) (Figure 32).
In key informant interviews, 65 percent of agricultural extension officers reported that farmers were having difficulties marketing their crop, livestock and fisheries production, and 46 percent reported the farmers could not find any alternative marketing channels.
Market functionality

The market for agricultural inputs in Yemen has remained largely functional amid COVID-19 restrictions instituted by authorities. In the previous three months, only 13 percent of interviewed vendors reported that they had been prohibited from operating while the remaining 87 percent were able to do business, even with restrictions (Figure 33).

![Figure 33. Agricultural input vendors’ reports of COVID-19-related restrictions on their businesses in the previous three months (percentage)](image)


Major operational difficulties reported by agricultural input vendors included lower sales, business restrictions due to COVID-19, higher operating costs and insufficient supplies of fertilizers and chemicals.

Key informant interviews with food traders revealed that COVID-19 restriction measures did not markedly impede their operations: 94 percent of traders reported that they were able to work compared with 72 percent in the first round of data collection.

Comparison of first- and second-round data: supply and demand

In the second-round assessment, 71 percent of food traders reported a moderate to sharp decrease in the supply of the main food items they sold compared with the same period in a typical year (10 percent cited the decrease as especially sharp) (Figure 34). This marked a severe drop in supplies from the first round, when just 28 percent reported supply problems.

In addition, food traders witnessed a shift in the number of customers and demand between the first and second rounds. In both rounds, more than 70 percent of food traders reported a decrease in customers over the past three months. However, in the second round, there was a slight improvement, with 10 percent reporting an increase in customer numbers as opposed to only 1 percent in the first round.
While the majority of food traders in both rounds reported a decrease in quantities purchased, 19 percent reported an increase in the second round compared with 9 percent in the first round. Most concerning, in the second round, 90 percent of food traders reported that more customers had asked to buy on credit in the past three months versus 67 percent in the first round.

**Prices of critical food items and access to food**

Key informant interviews with traders and agricultural extension officers revealed that prices of major food items higher were than usual for the time of the year. High food prices were also reported as a major shock by respondents in the household survey.

An increase in farm-gate prices of major crops was reported by 75 percent of agricultural extension officers. Among food traders, 84 percent reported an increase in the prices of important food items compared to usual for that time of year. One half of food traders reported that important food commodities had to be imported.

According to FAO market monitoring, prices of key imported staple foods were on the rise throughout 2020 (FAO, 2021a). It is worth noting that COVID-19 restriction measures did not appear to effect food prices. Instead, the depreciation of the Yemeni riyal against the United States dollar led to the rapid increase in exchange rates and a decline in Yemen’s economy (Figure 35). Since Yemen is highly dependent on imports, the direct consequence was increased prices of imported items, including food in local markets.
The spike in prices of imported foods increased the cost of the minimum food basket, which mostly comprises imported food items, thus reducing the vulnerable households’ purchasing power (Figure 36). Since the beginning of 2020, the price of the minimum food basket has increased every month, reaching an all-time high in February 2021.

The difference in price of the minimum food basket between the northern governorates controlled by the SBA and southern governorates controlled by the IRG was largely a result of the disparity in exchange rates. In areas under SBA control, the riyal was relatively stable in 2020, while in areas under IRG control, it depreciated to unprecedented levels.

**Agricultural extension services**

The difficulties reported by a large percentage of agricultural households indicate a lag in agricultural extension services for farmers. Key informant interviews with extension officers revealed that agricultural extension services were affected somewhat by COVID-19 restriction measures in both the first and second rounds of data collection. However, just 33 percent of extension officers reported a disruption of their services in the second round – down from 48 percent in the first round.

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1 FAO estimates the minimum food basket for Yemen at 75 kg of wheat flour, 10 kg of dry red kidney beans, 8 litres of vegetable cooking oil, 2.5 kg of sugar and 1 kg of iodized salt for a seven-member household, per month.
Of the agricultural extension workers reporting a disruption in the second round, 57 percent stated that they were still able to support farmers using telephones and social media. Another 19 percent reported that they could only provide support sometimes and 24 percent reported that they could not provide any support.

Figure 36. Change in the cost of minimum food basket for Yemen, by administrative area and national average (January 2016–January 2021)

Livelihoods, incomes and coping strategies

Among surveyed households, 84 percent reported that their engagement in agricultural activities was their primary or secondary source of income (Figure 37). However, the survey covered households whose major income sources varied. Non-agricultural wage labour was reported as a major source of income by nearly 25 percent of respondents, followed by agricultural wage labour and non-agricultural activities (salary, pension etc.) – each reported by 14 percent of respondents. Even for households whose main source of income was a non-agricultural activity, agriculture remained the second or third source of income.

Figure 37. Main sources of income in the previous three months


The sale of seafood and fisheries products served as a major income source for 6 percent of households – a smaller proportion than other agricultural income sources. This can be attributed to the sampling frame, which comprised past and present FAO beneficiaries (FAO provided more support to crop and livestock producers than to fishers in Yemen). It is also worth noting that the second round of data collection coincided with the harvest, followed by the agricultural lean season. This could explain the relatively high reporting of agricultural wage labour and non-agricultural activities as the sources of income.

More than 60 percent of respondents reported relying on more than one income source (Figure 38). This percentage is higher than in the first round, in which 29 percent reported having more than one income source. One possible explanation for the increased reporting of income sources is that the second-round survey was partly conducted during the harvest and partly in the non-agricultural season. This may have led households to resort to second or third sources of income, including humanitarian and other forms of assistance (cited by 10 percent of respondents).
Figure 38. Number of income sources by major income source

More than 60 percent of households deriving their main income from the sale of fisheries products and other agricultural products relied on three sources of income in the previous three months. Over 25 percent of fisher households reported humanitarian and other forms of assistance as their second or third sources of income; non-agricultural wage labour also served as an additional income source.

Since the surveyed households are mostly FAO beneficiaries and therefore quite vulnerable, multiple income sources do not always mean wealth – rather they serve as a means of survival.

Livelihood shocks

The most widely reported shocks experienced across all governorates were: increased food prices; sickness of household members; and increased prices of livelihood inputs (Figure 39). Increased food prices were reported by more than 80 percent of respondents in Aden, and more than 60 percent in Al Dhale’e, Marib, Raymah, Shabwah and Taizz. Increased prices of livelihood inputs were reported by more than 50 percent of respondents in Al Jawf, Amran, Hajjah, Lahj, Raymah, Shabwah and Taizz. It is worth noting that the majority of surveyed households did not report COVID-19-related restriction measures as a major shock.

Households with major sources of income from the sale of food crops, non-agricultural wage labour and humanitarian and other forms of assistance were most affected. (Figure 40).
Figure 39. Major shocks experienced by the surveyed households in the previous three months


Figure 40. Top three shocks experienced in the previous three months, by income group (percentage of respondents)

Changes in income

Among surveyed households, 52 percent reported a drastic to a significant decline in their incomes in the previous three months compared with the same period in the previous year (Figure 41).

Figure 41. Changes in income in the previous three months compared to same period last year, by governorate (percentage of respondents)


Abyan, Al Hudaydah, Hadramaut, Al Jawf, Hajjah, Lahj and Marib were the hardest hit by decreased income: more than one quarter of respondents in these governorates reported a 50 percent or greater decrease in their main sources of income over the past three months.

While all livelihood groups were affected by decreased income during this time, households that depend on the sale of fisheries products, food crops and agricultural wage labour were hardest hit. More than 60 percent of respondents from these income groups reported drastic to significant declines in income in the past three months (Figure 42).
Livelihood coping strategies

Understanding the behaviours of households adapting to recent crises provides insights into the extent and type of difficulties they face. The Livelihood-based Coping Strategy Index (LCSI) was used to measure households’ experiences with livelihood stress and asset depletion (Food Security Cluster, 2020; WFP, 2015). It involves series of questions about how households are coping with shortfalls in access to food (or money to buy food). Stress-level strategies include borrowing money and spending savings, indicating a reduced ability to deal with future shocks. Crisis strategies, such as selling productive assets, directly reduce future productivity. Emergency strategies, such as selling one’s land or livestock, also affect future productivity but are more difficult to reverse.

Across the household sample, 15 percent had resorted to Emergency-level coping strategies, 75 percent employed Crisis-level coping strategies and 8 percent had utilized Stress-level coping strategies in the previous three months. Only 3 percent of surveyed households reported that they did not face any shortage of food or money, and therefore did not adopt any coping strategies. While the majority of households resorted to Crisis-level coping strategies across all governorates, the adoption of Emergency coping strategies was greater in Al Hudaydah, Hadramaut, Marib and Raymah than in other governorates (Figure 43).

The top three livelihood-based coping strategies that most of the surveyed households adopted were: borrowing money or buying food on credit (92 percent of surveyed households); reducing essential non-food expenditures (74 percent); and reducing expenses on inputs (68 percent) (Figure 44).
One quarter of households whose main income source was the sale of fisheries products reported resorting to Emergency coping strategies – the highest proportion of any income group. This was followed by households relying on humanitarian or other forms of assistance (23 percent).
More than three quarters of respondents deriving their main income from the sale of food crops (82 percent), cash crops (79 percent), agricultural wage labour (77 percent) and non-agricultural wage labour (83 percent) employed Crisis-level coping strategies. Of those who reported other or no income source, just 8 percent employed Emergency-level coping strategies while 88 percent employed Crisis-level strategies (Table 6).

Table 6. Crisis- and Emergency-level coping strategies adopted, by main income source (percentage of respondents)

<table>
<thead>
<tr>
<th>Main income source</th>
<th>Adopted Emergency-level coping strategies</th>
<th>Adopted Crisis-level coping strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale of cash crops</td>
<td>15%</td>
<td>79%</td>
</tr>
<tr>
<td>Sale of food crops</td>
<td>3%</td>
<td>81%</td>
</tr>
<tr>
<td>Sale of other agricultural products</td>
<td>13%</td>
<td>71%</td>
</tr>
<tr>
<td>Sale of livestock and livestock products</td>
<td>14%</td>
<td>73%</td>
</tr>
<tr>
<td>Sale of fisheries products</td>
<td>24%</td>
<td>64%</td>
</tr>
<tr>
<td>Agricultural wage labour</td>
<td>13%</td>
<td>77%</td>
</tr>
<tr>
<td>Non-agricultural wage labour</td>
<td>14%</td>
<td>83%</td>
</tr>
<tr>
<td>Assistance (humanitarian, remittances/support from family friends, other)</td>
<td>23%</td>
<td>72%</td>
</tr>
<tr>
<td>Non-agricultural activities (salary, pension, trade, skilled labour, self-employed)</td>
<td>13%</td>
<td>73%</td>
</tr>
<tr>
<td>Other or no income source</td>
<td>8%</td>
<td>88%</td>
</tr>
</tbody>
</table>


Comparison of first- and second-round data: coping strategies

In the second round of data collection, 97 percent of respondents reported resorting to negative coping strategies compared with 94 percent in the first round. While the difference was not significant, more households in the second round resorted to Crisis-level coping strategies (75 percent) than in the first round (66 percent). This indicates that more households in the second round reduced essential non-food expenditures (including on their livelihoods) because of resource depletion (Figure 45).
Household debt in previous three months

More than 80 percent of surveyed households had incurred new debt in the previous three months that had not been repaid at the time of the survey (Figure 46). More than 40 percent of these households had debt amounting to over YER 200 000, which at the time of data collection was slightly more than USD 250.²

² The national monthly average of the unofficial exchange rate of Yemeni riyal against the United States dollar in September 2020 was USD 1 = YER 700 (FAO, 2020f).
The highest percentage of households that had reported incurring debt in the previous three months was among sellers of fisheries products (89 percent), followed by agricultural wage labourers and households depending on humanitarian, remittance, and other forms of assistance (87 percent each). In terms of value, sellers of crops and agricultural products had the highest debt, surpassing YER 200 000 (Table 7). Since the survey period overlapped with the lean season for agricultural wage labours and fishers, this may have pushed these income groups towards more borrowing and consequently higher debt.

Table 7. Households incurring new debt in past three months, by income source

<table>
<thead>
<tr>
<th>Main source of income</th>
<th>Reported incurring new debt in previous three months</th>
<th>Median debt incurred in previous three months (YER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale of fisheries products</td>
<td>89%</td>
<td>170 000</td>
</tr>
<tr>
<td>Assistance (humanitarian, remittances/support from family/friends, other)</td>
<td>87%</td>
<td>150 000</td>
</tr>
<tr>
<td>Non-agricultural wage labour</td>
<td>87%</td>
<td>150 000</td>
</tr>
<tr>
<td>Sale of livestock and livestock products</td>
<td>86%</td>
<td>190 000</td>
</tr>
<tr>
<td>Sale of cash crops</td>
<td>86%</td>
<td>200 000</td>
</tr>
<tr>
<td>Sale of food crops</td>
<td>81%</td>
<td>225 000</td>
</tr>
<tr>
<td>Non-agricultural activities (salary, pension, trade, skilled labour, self-employed)</td>
<td>81%</td>
<td>200 000</td>
</tr>
<tr>
<td>Sale of other agricultural products</td>
<td>69%</td>
<td>250 000</td>
</tr>
<tr>
<td>Other or no income source</td>
<td>90%</td>
<td>200 000</td>
</tr>
</tbody>
</table>

Food security

To assess household food insecurity, respondents were surveyed about conditions and experiences typically associated with the inability to access food due to lack of money or other resources in the past 30-days based on the Food Insecurity Experience Scale (FIES). The prevalence of moderate or severe recent food insecurity was estimated based on the threshold used to define “moderate” food insecurity in the context of global monitoring for the Sustainable Development Goals (SDGs).

Reported estimates include margins of error based on a 95 percent confidence interval, reflecting sampling errors. Among the sampled population, 55 percent could be classified as moderately or severely recently food insecure (Figure 47). The estimated prevalence of recent food insecurity was over 60 percent in the governorates of Raymah (76 percent), Hajjah (66 percent), Al Jawf (66 percent) and Aden (60 percent). Food insecurity estimates for Al Mahwit and Shabwah are only indicative due to the small sample size and high margin of error.

The prevalence of Crisis-level or worse food insecurity as measured by the FIES consistent with IPC Phase 3 or higher was 23 percent. Based on this measure, more than one quarter of the surveyed population in Raymah (43 percent), Hajjah (30 percent), Al Hudaydah (28 percent) and Al Jawf (27 percent) is acutely food insecure (Figure 48).

Figure 47. Prevalence of recent moderate or severe food insecurity based on FIES SDG threshold


3 In addition to the standard eight questions referring to experiences typically associated with the inability to access food, the FIES module in this survey comprised an additional three questions on the frequency of occurrence of those experiences in the last 30 days.

4 The category “moderate or severe” as defined in the context of the SDG monitoring is based on globally uniform food insecurity severity thresholds that do not necessarily coincide with IPC acute food insecurity analyses. In SDG monitoring, moderate or severe food insecurity generally captures more households than IPC Crisis-level food insecurity (IPC Phase 3 or higher).
The FIES-based prevalence of recent food insecurity has also been estimated for households grouped by main income source. Households whose main source of income was from humanitarian and other forms of assistance, agricultural wage labour and the sale of fisheries products had a higher proportion of food-insecure households (Table 8). Surveyed households deriving their main income from non-agricultural wage labour and “other or no income source” also had a relatively higher prevalence of food insecurity than other thresholds.

It is hardly surprising that households whose main income source is humanitarian assistance are the hardest by food insecurity. Households primarily deriving their income from the sale of fisheries products are also extremely vulnerable on critical indicators like change in income and livelihood-based coping strategies.

Among agricultural households, crop-producing households appear to be in a more favourable food security situation than fisheries and livestock-producing households. The assessment period partially coincided with the harvest of major staple crops, and income from the sale of these crops along with food stocks from the previous harvest may have insulated these households from food insecurity. However, since the households whose main income source was from the sale of food crops had relatively small representation in the sample, the estimate for this group is less reliable than that for other income groups.
Between the first and second rounds of data collection, the prevalence of moderate or severe food insecurity increased by 44.7 percent (from 38 percent to 55 percent) and the prevalence of recent food insecurity (as measured by the FIES) consistent with IPC Phase 3 or above increased by 21 percent (from 19 percent to 23 percent).

Although the second-round household assessment coincided with the harvest and post-harvest periods, high prices of food and agricultural inputs, persistent debt and a decline in remittance appear to have accelerated food insecurity in the surveyed population.

Whereas 82 percent of respondents reported decreased income in the first round of data collection, 70 percent reported a decrease in the second round (Figure 49). However, this does not mean that income increased; reports of increased income remained largely unchanged between the two rounds. It indicates that more respondents reported marginally decreased or unchanged income in the second round. The fact that changes in income were relatively more positive than in the first round may be because the second round partially coincided with the harvest season.
Figure 49. Changes in income in the previous three months compared to the same period last year (percentage of respondents in first and second rounds of data collection)

Most affected population groups and needs

Among surveyed households, the most affected were identified based on their reported main income sources and the livelihood-related stress that they experienced over the past three months.

Livelihood stress was measured based on:

- decreases in income;
- number of income sources;
- level of debt;
- coping strategies employed (based on LCSI scores); and
- major household shocks.

Nine variables were used to derive a single score in order to rank the main income groups from least to most affected (Table 9).

While respondents all income groups were exposed to shocks and vulnerabilities, the hardest hit were households whose main income source was: the sale of fisheries products; humanitarian and other forms of assistance (including support from family and friends, remittances, begging or charity); and daily wage labour (including agricultural and non-agricultural labour).
Table 9. Household vulnerability ranking, by main income source and livelihood stress indicator\(^5\)
(percentage of respondents and composite score)

<table>
<thead>
<tr>
<th>Income source</th>
<th>Income decreased by more than 50%</th>
<th>Income decreased by 20–50%</th>
<th>Incurred new debt in past three months</th>
<th>Emergency coping strategy</th>
<th>Crisis coping strategy</th>
<th>Only one source of cash income</th>
<th>Increased food prices</th>
<th>Sickness of household member</th>
<th>Increased prices of livelihood inputs</th>
<th>Composite score</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries sales</td>
<td>26%</td>
<td>42%</td>
<td>89%</td>
<td>24%</td>
<td>64%</td>
<td>26%</td>
<td>82%</td>
<td>24%</td>
<td>51%</td>
<td>65</td>
<td>Most affected</td>
</tr>
<tr>
<td>Assistance (humanitarian,</td>
<td>30%</td>
<td>25%</td>
<td>87%</td>
<td>23%</td>
<td>72%</td>
<td>9%</td>
<td>59%</td>
<td>61%</td>
<td>59%</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Non-agricultural wage</td>
<td>29%</td>
<td>25%</td>
<td>86%</td>
<td>14%</td>
<td>83%</td>
<td>7%</td>
<td>69%</td>
<td>53%</td>
<td>50%</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Agricultural wage labour</td>
<td>33%</td>
<td>32%</td>
<td>87%</td>
<td>13%</td>
<td>77%</td>
<td>26%</td>
<td>52%</td>
<td>54%</td>
<td>44%</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Sale of food crops</td>
<td>23%</td>
<td>44%</td>
<td>81%</td>
<td>3%</td>
<td>82%</td>
<td>14%</td>
<td>62%</td>
<td>40%</td>
<td>73%</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Sale of livestock and</td>
<td>20%</td>
<td>37%</td>
<td>85%</td>
<td>14%</td>
<td>73%</td>
<td>19%</td>
<td>47%</td>
<td>48%</td>
<td>40%</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Other or no income</td>
<td>11%</td>
<td>22%</td>
<td>90%</td>
<td>8%</td>
<td>88%</td>
<td>11%</td>
<td>15%</td>
<td>57%</td>
<td>26%</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Non-agricultural</td>
<td>18%</td>
<td>24%</td>
<td>81%</td>
<td>13%</td>
<td>73%</td>
<td>10%</td>
<td>66%</td>
<td>42%</td>
<td>46%</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Other agricultural sales</td>
<td>9%</td>
<td>40%</td>
<td>69%</td>
<td>13%</td>
<td>71%</td>
<td>26%</td>
<td>49%</td>
<td>46%</td>
<td>36%</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Sale of cash crops</td>
<td>16%</td>
<td>21%</td>
<td>82%</td>
<td>15%</td>
<td>79%</td>
<td>3%</td>
<td>54%</td>
<td>37%</td>
<td>28%</td>
<td>33</td>
<td>Least affected</td>
</tr>
</tbody>
</table>


\(^5\) Each indicator was ranked from 1 to 8 (lowest to highest severity) for eight income groups. The rankings were added to derive a composite score. The higher this score, the greater the vulnerability.
Al Jawf and Marib remained in the top five vulnerable governorates in both rounds. The southwestern governorates also received a higher vulnerability score in the second round – with Lahj in the top five

The five most pressing needs reported by the surveyed households for the next three months of crop, livestock and fishery production were: (i) cash assistance; (ii) destocking; (iii) seeds; (iv) animal feed; (v) fertilizers; and (vi) access to water (Figure 50).

![Figure 50. Greatest needs for assistance with crop, livestock and fisheries production in the next three months (percentage of respondents)](image)

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

The needs of surveyed households vary according to their primary sources of income (Figure 51).
While destocking and animal feed were the predominant needs of households engaged in livestock production, crop-producing households’ predominant needs were for seeds, tools and access to water. Among households engaged in both crop and livestock production, seeds and destocking were the predominant needs.

The predominant need for households dedicated to fisheries was for fishing equipment. Across all livelihood groups, direct cash assistance was frequently cited, with households engaged in livestock production and sales reporting it as particularly critical.

For food traders, the most urgent needs for the coming three months were fuel and transportation, whereas the most urgent needs reported by agricultural extension officers were access to seeds, agricultural inputs and veterinary services.
Conclusion

Agriculture is Yemen’s main economic sector, but it has been crippled by the compounded effects of displacement, disease outbreaks and diminishing livelihood options. The agriculture sector has also been severely constrained by a shortage of agricultural inputs – particularly seeds, vaccines, drugs and feed. As a result, the Yemeni economy has sharply contracted since the escalation of its years-long conflict, and imports and internal movement of goods have become more costly and difficult. Yemen’s agricultural sector is in dire need of strengthening, with a special focus on revitalising crop and livestock production.

Conflict remains the main driver of the food insecurity and constrained livelihoods in the country. The most critical interventions needed include:

• food assistance through direct and voucher-based food distribution, along with school feeding.
• livelihood restoration, focused on agriculture;
• health, nutrition, and immunization support; and
• water, sanitation and hygiene.

Given the array of programmes that humanitarian agencies are implementing, providing recommendations for new interventions is not a viable option. A more realistic approach is to strengthen ongoing livelihood and food security interventions so that they can meet the needs reported by surveyed households.

With regard to COVID-19, vulnerable households are increasingly coping with a shortage of food and money, as reflected in livelihood coping strategies. The majority of agricultural extension officers reported that they suspected COVID-19 cases in their areas. Compliance with COVID-19 restriction measures and safety protocols has slackened since the first round of data collection, increasing the risk to already vulnerable agricultural households.

Markets are generally operational, with some restrictions noted in both rounds. Market functionality further increased in the second round, and restriction measures were not reported as a major constraint by the crop and livestock producers. However, market access was reported as a difficulty for one in three fisher households. In addition, COVID-19-related restriction measures have indirectly impacted incomes through the reduced flow of remittances to the country.
Recommendations

The surveys clearly revealed that agricultural producers are facing serious difficulties in accessing agricultural inputs and marketing and transporting their products. The key drivers of their constraints are high prices of livelihood inputs and households’ inability to afford the high cost of these inputs and equipment. This analysis identified several measures to stabilize the livelihoods and food security of those most in need.

1. To offset the key drivers of the economic decline, resilience-building interventions focused on restoration and diversification of livelihoods are crucial.

2. Based on the findings of the two rounds of monitoring, short- to medium-term measures that reinforce ongoing programming are needed.

   • Combining cash vouchers with the in-kind agricultural incentives for small producers can be a first step. Providing cash to small-scale producers engaged in crop, livestock and fisheries production can also boost the purchasing power within the wider local agricultural market. The design of the cash and in-kind support interventions should be preceded by a market survey to assess the availability of agricultural inputs and equipment and evaluate the cash voucher option.

   • Ongoing agricultural income-generation programmes for the most vulnerable groups should be scaled up. These programmes should connect beneficiaries to agricultural extension services and markets to sustain the income they generate over the long term.

3. Expand agricultural extension services, particularly for livestock support, is crucial. To this end, development partners can work together to improve technical support to crop and livestock producers. This can be achieved by scaling up:

   • the early-warning system on animal disease outbreaks along with veterinary services and animal vaccination;

   • training in animal health among community-based livestock health workers so that veterinary services can be delivered to more vulnerable households and communities;

   • the distribution of livestock restocking tools and other equipment to livestock producers; and

   • the provision of fishing equipment – especially fishing gear and boats – to the most vulnerable households who depend on fisheries for their livelihoods.

4. Food assistance programmes should also be scaled up, particularly during agricultural lean seasons and with the occurrence of shocks such as natural disasters and the COVID-19 pandemic. An increased focus on food-for-work or cash-for-work interventions (beyond general food distribution) is recommended to address seasonal shocks.

5. Expanding and strengthening real-time food security, agriculture and livelihoods monitoring will provide more timely and appropriate information for measuring the impacts of COVID-19 and other shocks. The protracted crises in the country warrant a data collection and analysis system to inform evidence-based programming. This system should be established through a coordinated approach and with the agreement of all concerned humanitarian agencies in order to avoiding duplicating information and efforts.
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