



Food and Agriculture
Organization of the
United Nations

Pakistan

DIEM – Data in Emergencies Monitoring brief, round 4

Results and recommendations
June 2023

Data collection 12 February to 15 March 2023

Key highlights

- > Economic shocks were predominant and on the rise over recent rounds. Floods were cited much more frequently this round compared to previous rounds. Agricultural households were more frequently affected by all types of shocks, including economic.
- > The *kharif* harvest was estimated to be underperforming as reported by a large number of cereal producers. Access to fertilizer was the most frequently reported problem, but plant disease, access to seeds, seed quality and waterlogging were very common.
- > Seventy-three percent of goat producers, 62 percent of sheep producers and 55 percent of cattle producers reported having less animals than 12 months before the survey. Livestock deaths and distress sales dominated the reasons for this variation which were predominantly caused by the floods.
- > Overall, half of the households are food insecure. Flood affected households, female-headed households and those relying on assistance have a higher prevalence of food insecurity.
- > More than 80 percent of households reported the need for food and cash assistance. Crop inputs (seeds, fertilizer, etc.) and livestock inputs (animal feed, veterinary services, etc.) were also reported as needs.
- > According to the Food Insecurity Experience Scale (FIES), moderate and severe recent food insecurity (RFI) was prevalent in half of the households in the districts covered by the survey, with 9 percent experiencing severe RFI.
- > It is recommended that livelihood support be provided to the flood affected households; food production and consumption be diversified to improve access to food; and income generating and employment creating interventions and recovery programmes be initiated.

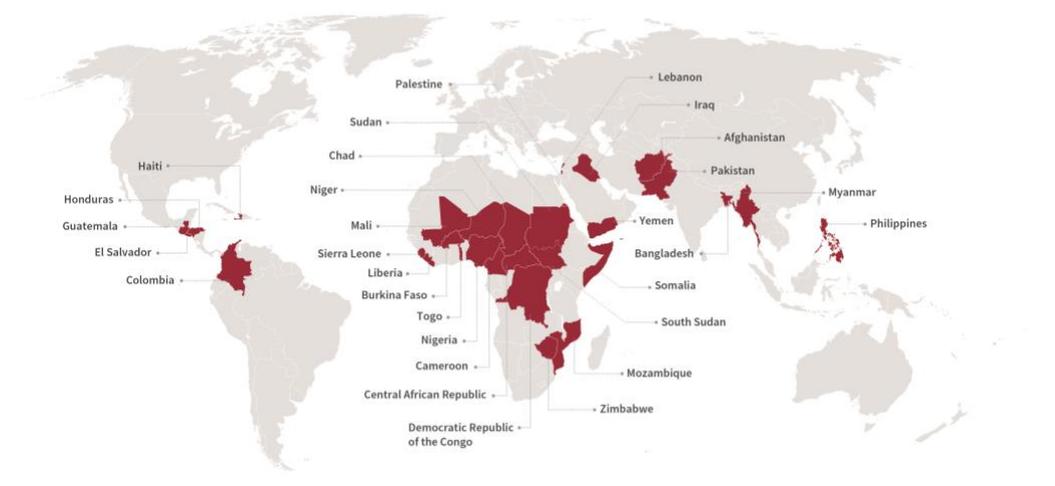
Methodology

The Food and Agriculture Organization of the United Nations (FAO) launched a household survey in Pakistan through the Data in Emergencies Monitoring (DIEM-Monitoring) System to monitor agricultural livelihoods and food security. This fourth-round survey reached 10 541 households through face-to-face interviews conducted from 12 February to 15 March 2023. Households were surveyed in 43 vulnerable and flood affected districts across Balochistan, Khyber Pakhtunkhwa and Sindh provinces.

Data collection took place during the *rabi* cropping period. The survey was representative at administrative 2 level. The sample design considered a margin of error of 10 percent and data were weighted by demographics.

Former rounds have been drawn from to make comparisons throughout this brief. The second-round survey was conducted in July 2021 and the third-round survey was conducted in April 2022. Out of the 28 districts covered in the third-round survey, only 16 were covered this round. The different surveyed areas and context, particularly in the third and fourth rounds, should be taken into consideration while reading this brief.

Figure 1. Countries with an established DIEM-Monitoring System



Source of data: FAO. 2023. DIEM-Monitoring. In: *FAO Data in Emergencies Hub*. Rome. Cited 3 November 2022. data-in-emergencies.fao.org

Source of map: United Nations. 2023. *Map of the World*. Cited 3 November 2022. un.org/geospatial/content/map-world

The final boundary between the Sudan and South Sudan has not yet been determined. Final status of the Abyei area is not yet determined. The dotted line represents, approximately, the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

About DIEM-Monitoring

FAO established the DIEM-Monitoring System to collect, analyse and disseminate data on shocks and livelihoods in countries prone to multiple shocks. DIEM-Monitoring aims to inform decision making by providing regularly updated information on how different shocks are affecting the livelihoods and food security of agricultural populations.

At the core of the DIEM-Monitoring System are country-level dashboards. Readers are encouraged to explore these dashboards to gain more insight into the context of Pakistan and other countries.

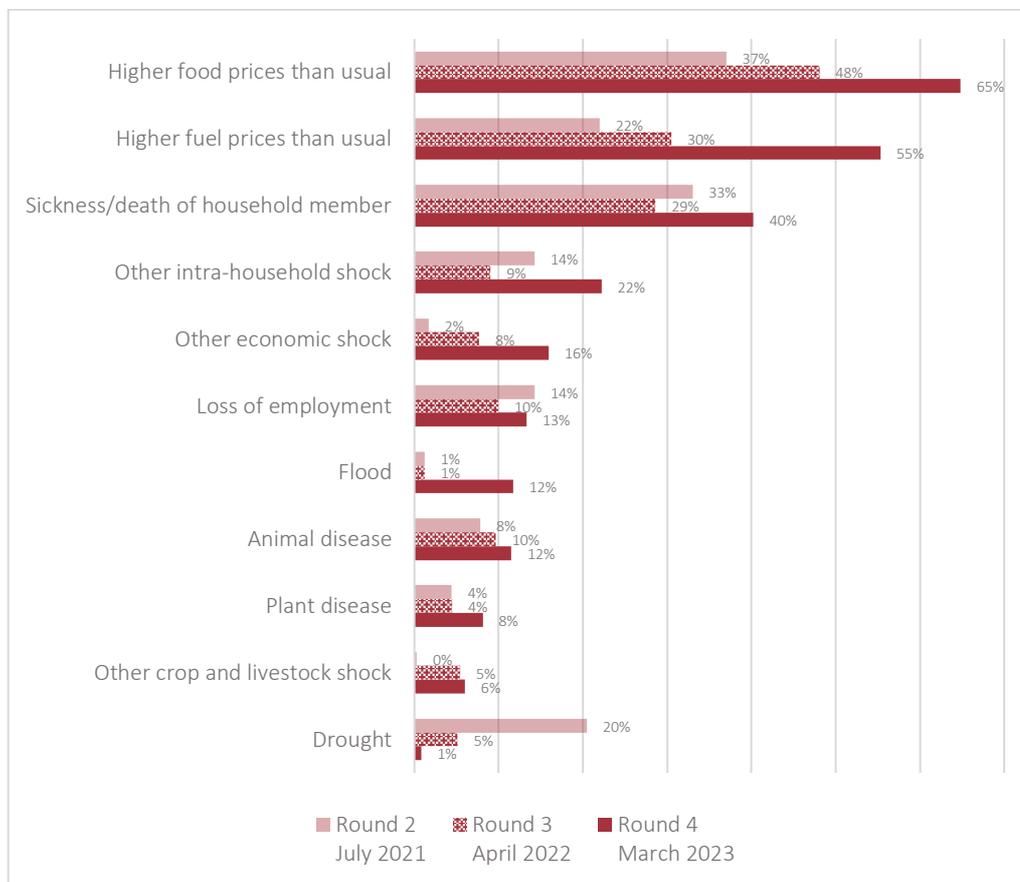
Learn more at data-in-emergencies.fao.org/pages/monitoring

Income and shocks

Although the areas surveyed across rounds do not coincide, and a rigorous comparison between the frequency of shocks in different rounds is not possible, the results suggest that economic shocks were predominant and on the rise. Floods were cited much more frequently this round because districts were targeted based on the impact of the 2022 flooding (Figure 2). Past rounds were conducted in the context of drought and COVID-19 shocks. Agricultural households were more frequently affected by all types of shock, including economic shocks, this round. Economic and idiosyncratic shocks were more frequently reported among the poorest segment of the population, but agricultural and climatic shocks were dependent upon location.

There was a compounding effect between idiosyncratic and economic shocks. Income derived from farming, for example, was more frequently reduced when compared to the same period last year than other sources of income. Seventy-five percent of income from the sale of staples was estimated to have reduced when compared to the same period last year.

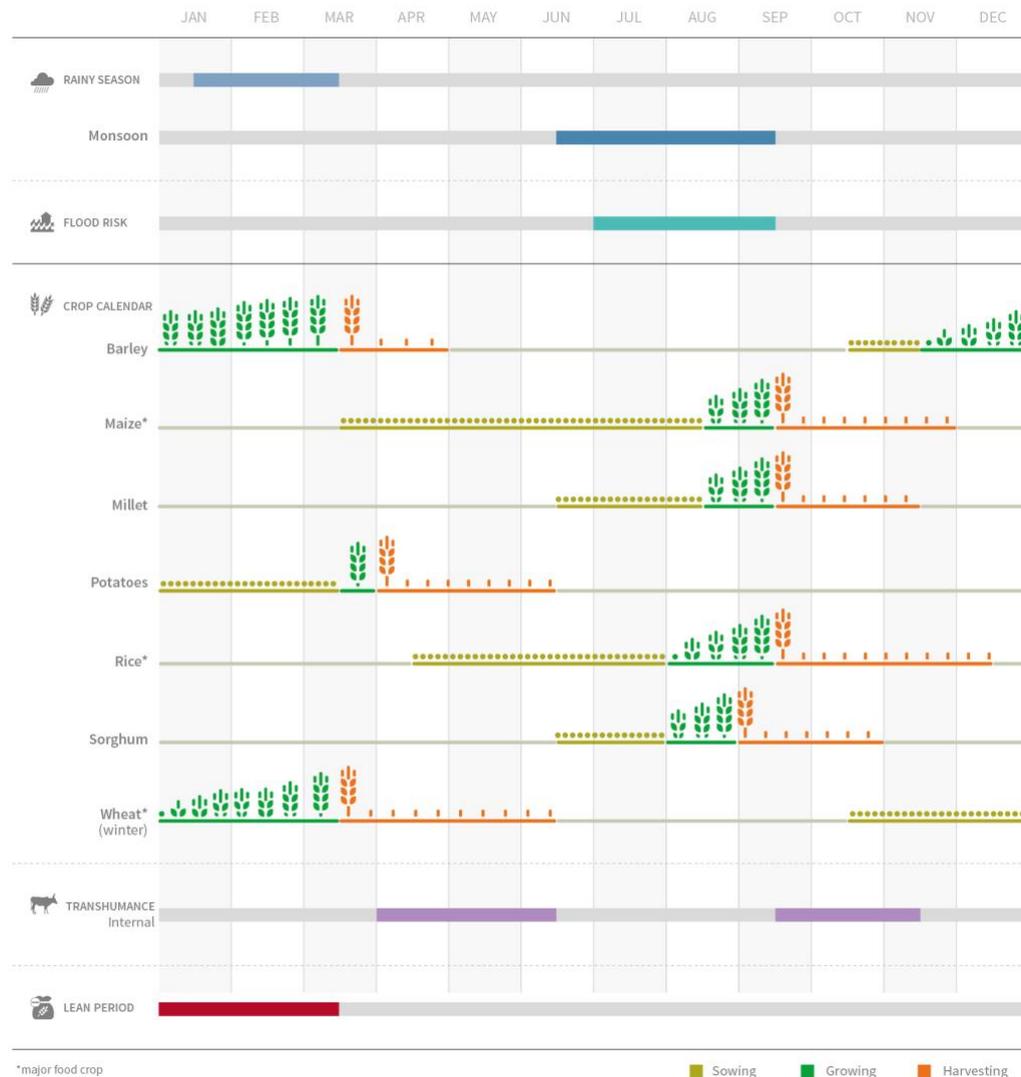
Figure 2. Main shocks reported (percentage of households)



Source of data: FAO. 2023. Pakistan: DIEM-Monitoring assessments results (July 2021, April 2022 and March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

Crops

Figure 3. Pakistan agricultural calendar



Source of data: FAO. 2022. GIEWS – Global Information and Early Warning System: Country briefs – Pakistan. In: FAO. Rome. Cited 9 November 2022. fao.org/giews/countrybrief/country.jsp?code=PAK&lang=en

Most farmers planted the same area in the 2022 *kharif* season but a large share of cereal farmers reported a decrease which was strongly associated with shocks. Crops were also affected by flooding. Although the severe flooding event occurred almost six months before the survey, 43 percent of heavily affected farmers reduced the area planted for vegetables and pulses. Ten percent of moderately affected farmers reduced the area planted.

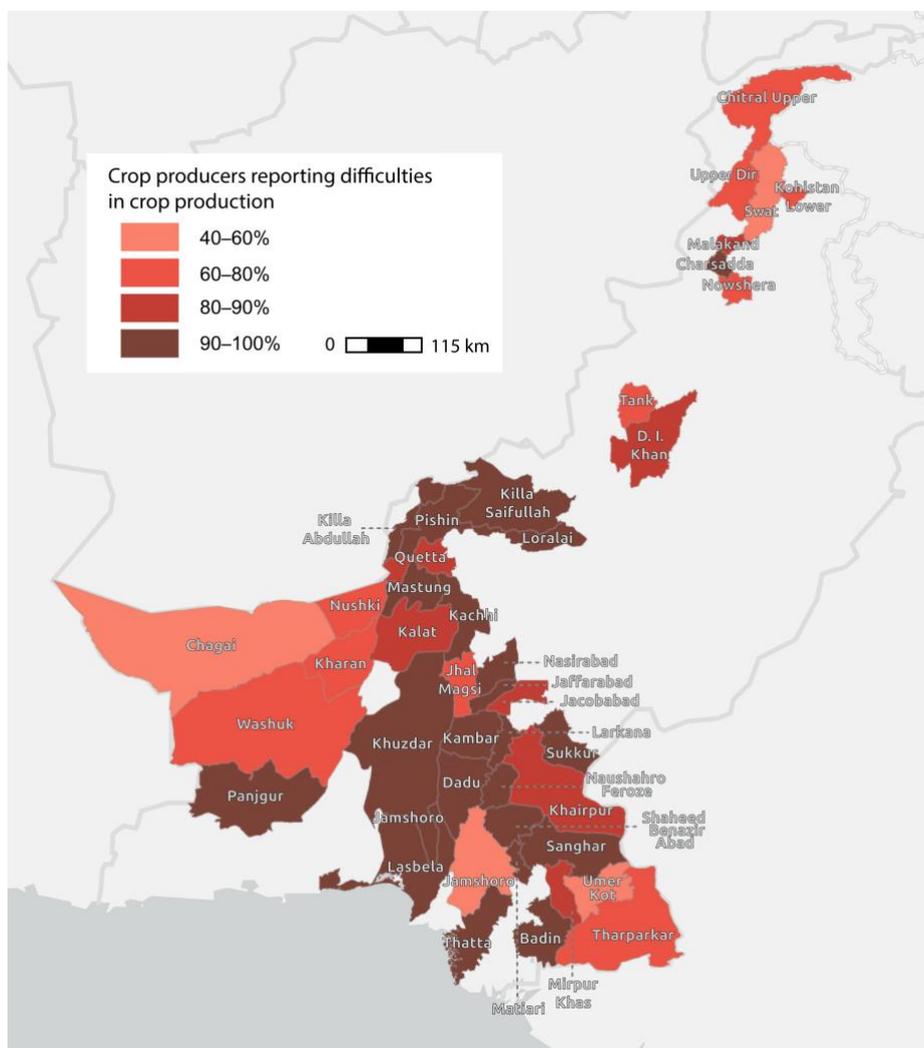
Floods that occurred six months before the survey, affected the agricultural season by reducing seed stock, and impacting irrigation infrastructure and agricultural asset efficiency, leading to a decrease in the area planted. Access to fertilizer was the most frequently reported problem, but plant disease, access to seeds, seed quality and waterlogging were common. A large number of cereal producers – 67 percent of rice producers, 49 percent of maize producers and 70 percent of producers of other cereals – reported that they expected the *kharif* harvest to be underperforming. Crop marketing was particularly difficult for rice, vegetables and sugarcane,

mostly due to the floods. An increase in marketing and transportation costs was the most frequently reported issue for crop marketing.

Floods have played a role in decreasing production in conjunction with other factors. Among farmers reporting floods as a major constraint, 61 percent reported a drop in production. This drop in production was still high (48 percent) among farmers who did not report flooding as a major constraint.

Besides shocks and plant diseases (for cereals), the characteristics associated with a decrease in harvest were land size, gender of the head of household, whether livestock was also a household activity and location – 69 percent of farmers in the desert area reported a decrease in harvest. Access to fertilizer and plant disease were the main issues reported for cereals. Vegetables and fruit producers reported pests, but in general this pattern did not vary much by crop. Sugarcane is particularly sensitive to shocks and very strong associations were found. Climatic shocks, like drought and floods, as well as plant diseases were more strongly associated for cereals, and plant disease for vegetables.

Figure 4. Crop production difficulties (percentage of crop producers)



Source of data: FAO. 2023. Pakistan: DIEM-Monitoring assessment results (March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

Source of map: Esri, HERE, Garmin, FAO, NOAA, USGS. 2018. Map of Pakistan. Cited 5 May 2023. data-in-emergencies.fao.org/pages/explore

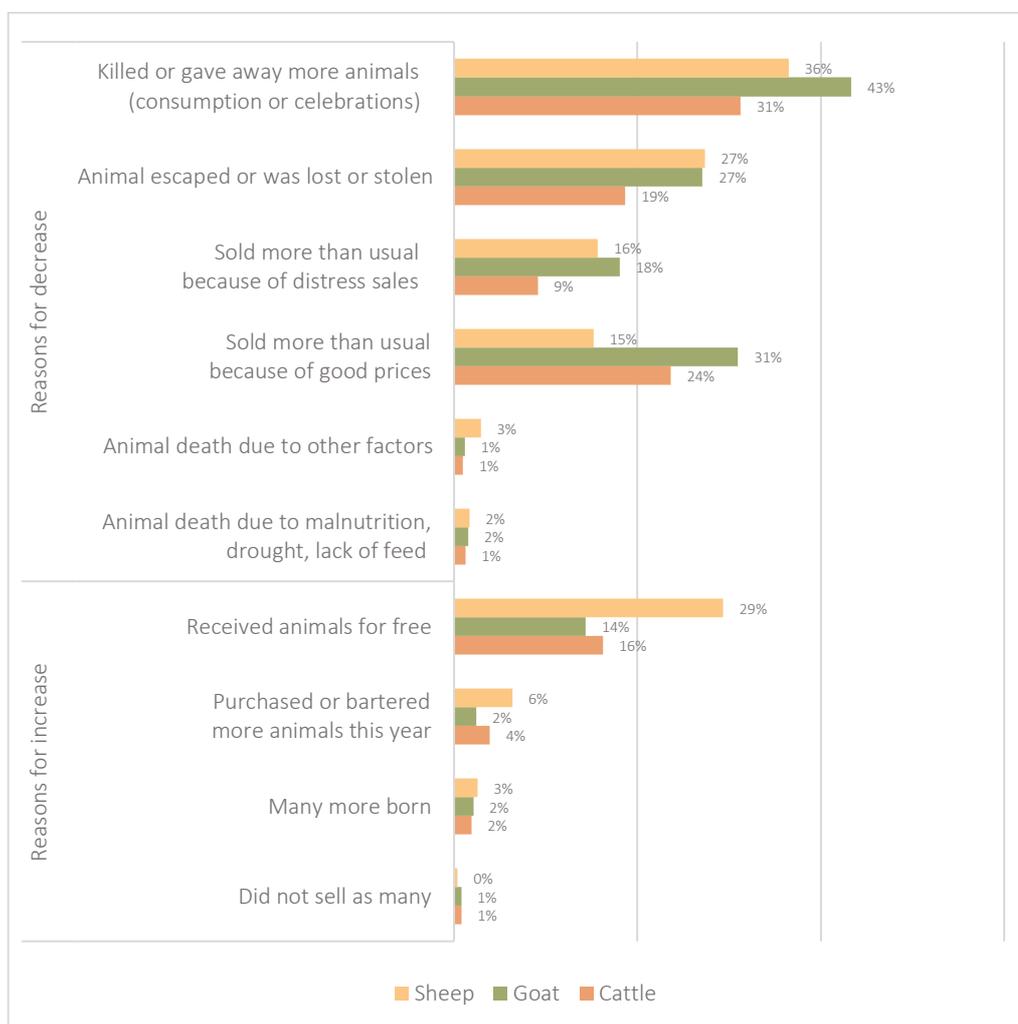
The dotted line represents, approximately, the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan.

Livestock

Seventy-three percent of goat producers, 62 percent of sheep producers and 55 percent of cattle producers reported having less animals compared to one year ago. Mortality was particularly high for cattle and 50 percent of livestock holders reported deaths. Forty-three percent of goat producers reported mortalities and 37 percent of sheep producers.

The most frequent reasons for the decrease in herd and flock size were livestock deaths and distress sales (Figure 5). Difficulties accessing feed and pasture (for cattle) were associated with a decrease in herds/flock size. Other associations were livestock diseases and shocks. The high mortality of cattle was also attributed to floods and most producers reported cattle being washed away. Fifty-six percent reported the loss of fodder which makes producers more likely to face other difficulties like accessing feed – 73 percent of producers who lost fodder to floods mentioned this challenge. Twenty-seven percent of producers also lost animal shelters, particularly in Balochistan and Sindh.

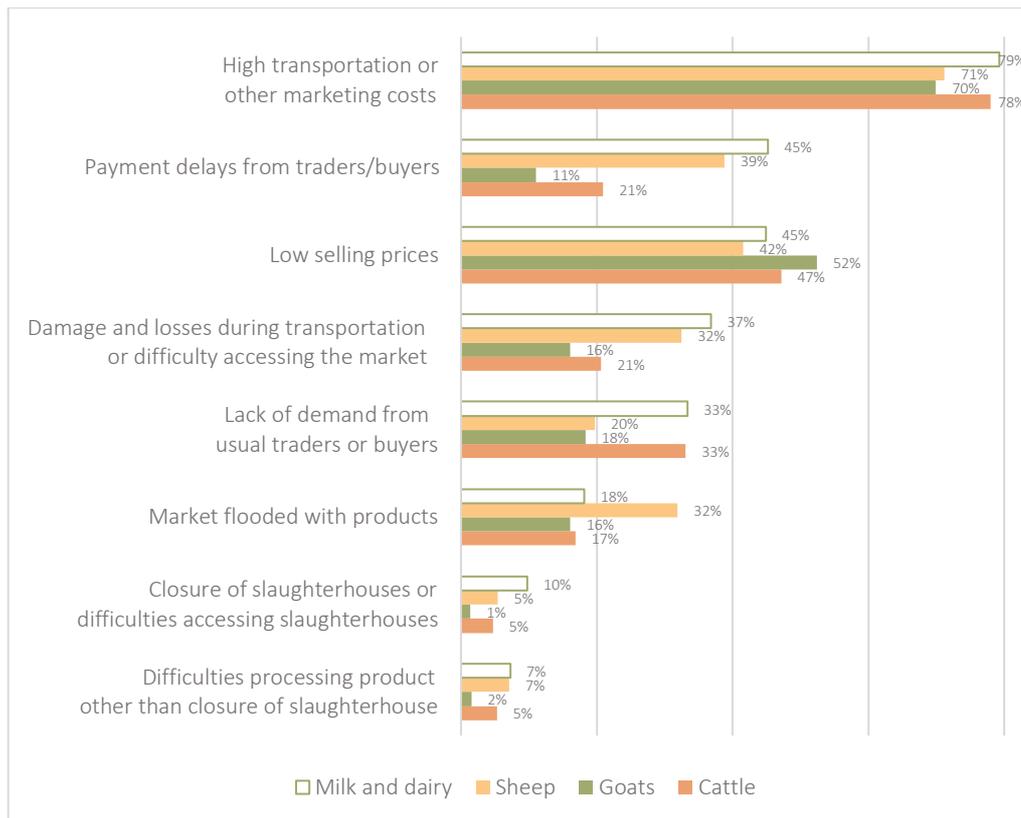
Figure 5. Reasons for change in herd and flock size (percentage of livestock producers)



Source of data: FAO, 2023, Pakistan: DIEM-Monitoring assessment results (March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

Most livestock producers (65–75 percent, depending on the product) reported that floods made marketing livestock products more difficult. The most common problem was higher marketing (transportation) costs (Figure 6).

Figure 6. Livestock marketing difficulties by product (percentage of livestock producers)



Source of data: FAO, 2023. Pakistan: DIEM-Monitoring assessment results (March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

Food security

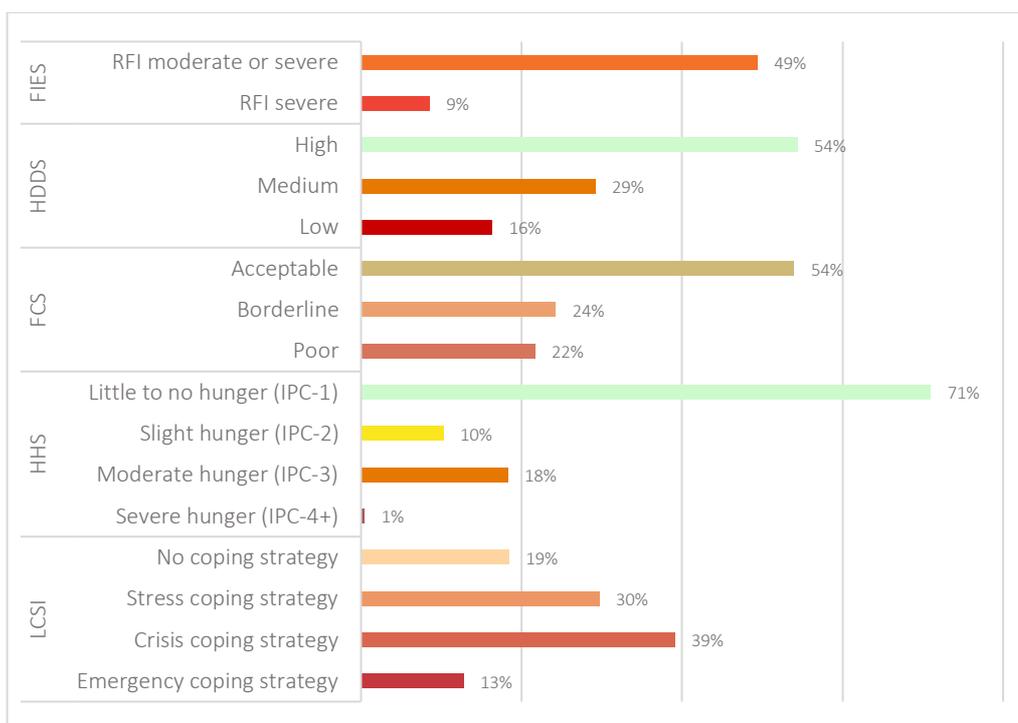
In the surveyed districts, about one-fourth of the households have a poor food consumption score (FCS) (Figure 7). This is partially consistent with the results of the Household Dietary Diversity Score (HDDS). Around half of the households have high dietary diversity and the remaining half have medium and low dietary diversity. The two indicators are consistent in identifying Balochistan as the province with the highest prevalence of poor food consumption and low dietary diversity. In addition, although no significant difference in prevalence was found between female and male headed households, those with reduced incomes (from non-agricultural sources, in particular) and relying on assistance, the Benazir Income Support Programme or *EHSAS* payments, etc. reported worse outcomes more frequently in terms of dietary diversity. Households affected by floods were more likely to have poor FCS and low HDDS.

For all food groups consumed, the market was the most frequent source. For meat and fruit, the number of consumption days increased when self-production increased suggesting that self-production of fruit and meat improves food security outcomes. However, the fact that these food groups are the first to be removed from household consumption following shocks,

and even under milder food security outcomes, suggests that habitual diets are not diversified, and these food groups are regarded as optional or celebratory.

The analysis of consumption patterns, across all surveyed households, identified a particularly low frequency of consumption of three food groups: meat, fruit and pulses. The infrequent consumption of these food groups did not rely on level of poverty, but by the livelihood, location and cropping pattern. Another factor was vulnerability to shocks – consumption of these groups decreases as the frequency of economic shocks increases.

Figure 7. Food security indicators – FIES, HDDS, FCS, household hunger score and livelihood coping strategy index



Source of data: FAO. 2023. Pakistan: DIEM-Monitoring assessment results (March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

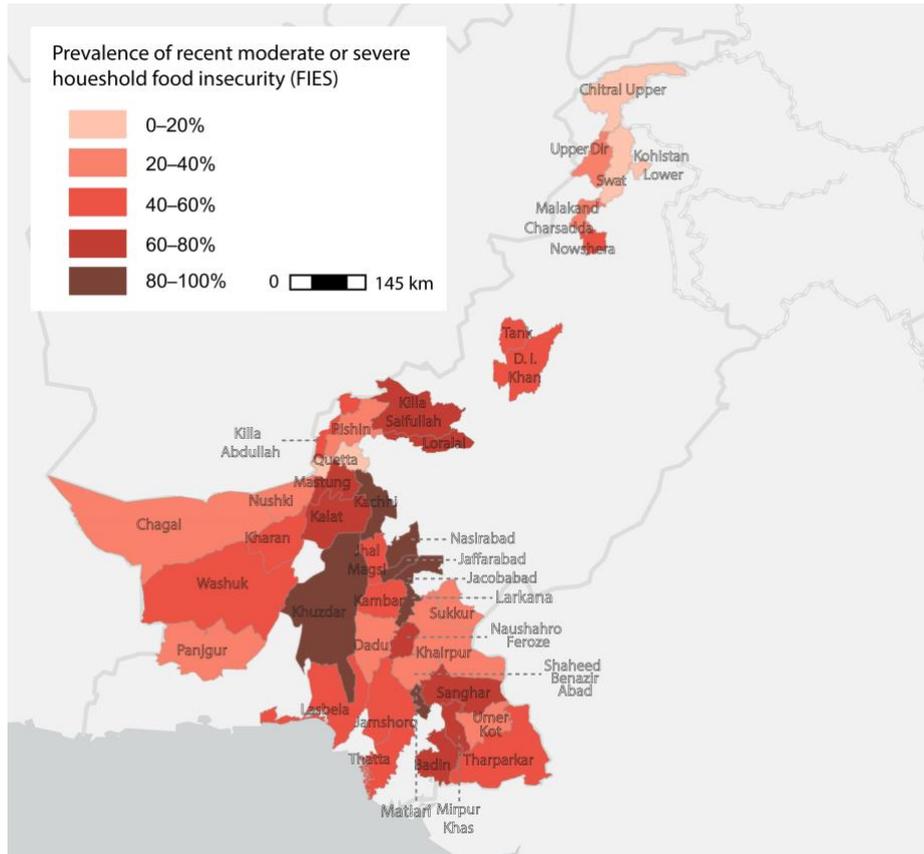
The Food Insecurity Experience Scale (FIES)¹ indicates the prevalence of moderate and severe recent food insecurity (RFI) in half of the households in the districts covered by the survey, with 9 percent experiencing severe RFI (Figure 8). The highest prevalence of moderate and severe RFI was found in Sindh and the lowest in Khyber Pakhtunkhwa, but with large differences by district. In flood affected villages, the prevalence of severe food insecurity was higher for female-headed households and crop producers.

Overall, around 80 percent of households used livelihood coping strategies and most of the households adopted crisis coping strategies followed by stress and emergency strategies. In Balochistan province, more households adopted emergency coping strategies compared to the other two provinces. In flood affected areas, more households engaged in livelihood coping strategies, particularly emergency coping strategies. The non-agricultural households adopted

¹ FIES results are subject to change, until the country scale is established for a more consistent comparability across rounds.

fewer coping strategies compared to the other groups. There was no difference between female and male headed households in adopting emergency livelihood coping strategies.

Figure 8. Map of recent moderate or severe household food insecurity (by district)



Source of data: FAO. 2023. Pakistan: DIEM-Monitoring assessment results (March 2023). In: *FAO Data in Emergencies Hub*. Rome. Cited 5 May 2023. data-in-emergencies.fao.org

Source of map: Esri, HERE, Garmin, FAO, NOAA, USGS. 2018. Map of Pakistan. Cited 5 May 2023. data-in-emergencies.fao.org/pages/explore

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Needs

The need for food and cash assistance was reported by more than 80 percent of households, particularly in Sindh province. The need for crop inputs (seeds, fertilizer, etc.) and livestock inputs (animal feed, veterinary services, etc.) were reported by 42 percent of agropastoralist households in the three to six months following the survey. Approximately 75 percent of the households had not received any assistance in the three months preceding the survey.

Recommendations

Short-term recommendations

- > Improve access to healthy and nutritious food through modalities such as cash and voucher assistance aimed at reducing food consumption gaps and saving lives.
- > Support communities affected by flooding by initiating income generation and employment creation interventions and recovery programmes.
- > Ensure timely provision of quality seeds for high-yielding crops and vegetables, and toolkits, especially to subsistence-level farmers including women.
- > Provide training on climate-smart crop and fodder production, including guidance on kitchen gardening to help farmers adapt and boost productivity.
- > Scale-up livestock protection and management interventions such as vaccination and deworming campaigns to prevent livestock diseases. Target vulnerable livestock farmers, including female farmers, with these programmes.
- > Improve access to fodder, multi-nutritional feed and pastures to help prevent distress sales.
- > Construct and rehabilitate water infrastructure for agricultural activities such as tube wells, water channels, and reservoirs for better conservation, efficient management and utilization of water.

Long-term recommendations

- > Promote livestock production and orchards to diversify production. Interventions in favour of diversification should be coupled with nutritional education to inform households about the importance of fruit, pulses and meat.
- > Support livelihood diversification activities for local communities to increase income generation and employment opportunities through skill development linked to market demand with special emphasis on economic growth for women.
- > Skill development trainings for livelihood diversification to be initiated and scaled-up in different trades in the most vulnerable areas for households and women facing acute food insecurity, high incidence of poverty and worsening socioeconomic conditions.
- > Include women in economic growth activities (agricultural and non-agricultural) to improve livelihoods.



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