



# Mitigating persistent welfare losses due to weather shocks

## The case of livestock herders in Kyrgyzstan



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### The negative effect of the harsh winter on herders' welfare was persistent

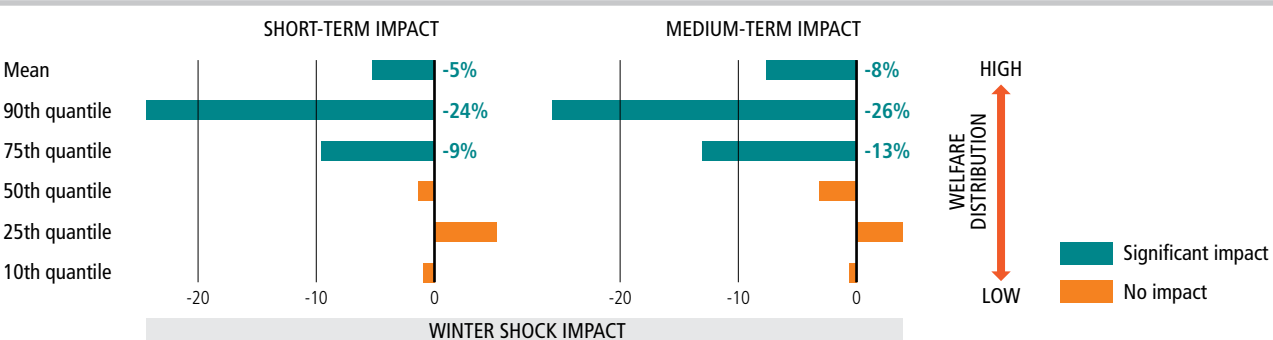
Kyrgyzstan experienced an extremely cold winter in 2012, with heavy snowfall followed by a significant spring run-off. This harsh winter led to considerable livestock mortality and price rises for animal products, with a substantial impact on the welfare of livestock herding households.

On average, households affected by the harsh winter experienced a 5 percent reduction in food consumption expenditure in the first year following the shock, and 8 percent reduction four years later with respect to households not exposed to this shock (Figure 1). The significant and persistent impact of the harsh winter is particularly evident for the wealthiest households, who typically own more animals and are, therefore, more exposed to the risk of climate induced animal mortality. For this population, food consumption expenditures declined by 24–27 percent in the short and medium terms as a result of the harsh winter with respect to wealthy households not exposed to the shock.

### KEY MESSAGES

- ▶ The harsh winter of 2012 in Kyrgyzstan demonstrates the power of weather shocks to affect the livelihoods of livestock herding households by causing a reduction in household food consumption expenditure in the short and medium terms.
- ▶ Conditional cash transfers or other mechanism supporting affected households to restock their herds can help minimize the persistent negative impact of weather shocks.
- ▶ Investments to mitigate animal mortality – including improved forage production and storage facilities – are important to build household resilience under adverse climatic conditions.
- ▶ Access to public veterinary services improves the resilience of livestock herding households to harsh winter shocks.

**FIGURE 1. The 2012 winter shock particularly impacted wealthy households in the short-term (2011–2013) and the medium-term (2011–2016)**



*Note:* The impact of the shock is measured in terms of a percent decrease in food consumption expenditure experienced by households hit by the 2012 harsh winter shock vis-à-vis households not exposed to this shock. The figure shows the average effect of the shock (1st row) as well as non-linear effects across the food consumption expenditure quantiles (2nd – 6th row).

*Source:* FAO, Economic and Policy Analysis of Climate Change (EPIC) team.

## Wealthier households are moved into a more vulnerable position by the shock

Wealthy herding households were particularly hard hit by the shock and significantly reduced their food consumption expenditure as a result. This was likely done in an effort to avoid additional distress sales of animals so as to “defend” their impoverished animal asset base. While the short-term objective of decreasing food consumption expenditure in order to preserve livestock assets is likely intended to enable future asset accumulation, the persistence of the welfare decline is worrisome. It suggests that coping strategies employed by households in the aftermath of the harsh winter, including consuming lower food quantities and less nutritious food, are insufficient to address livelihood shocks of this magnitude. Thus, in the absence of effective policy responses, weather-shocks of this nature may even push better-off households into a persistent state of lower food consumption and vulnerability.

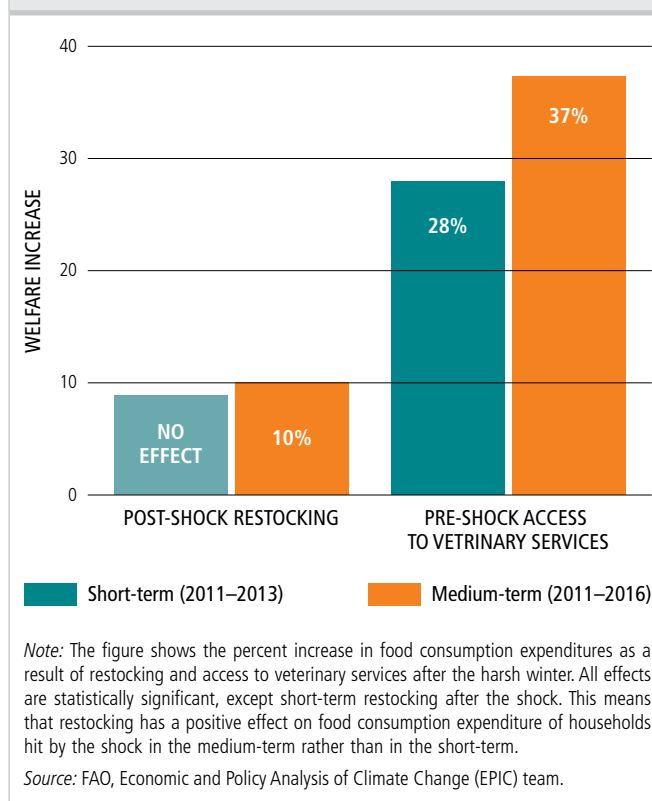
## The benefits of restocking livestock after weather shocks accrue in the medium-term

Households hit by the winter shock who are able to quickly replenish their herds experienced a 10 percent increase in food consumption expenditure in the medium-term compared to households who are not able to restock (Figure 2). In light of this evidence, supporting households affected by climate related disasters to restock livestock can help overcome the persistent negative impact of these events. This can take many forms depending on local conditions. Leveraging and supporting livestock markets through conditional cash transfers or insurance payment to affected households, for example, can help facilitate restocking and contribute to longer-term sector resilience.

## Policies to build households’ resilience following shocks can be addressed in a holistic manner

Supporting herder households entails not only immediate intervention to meet household needs in the aftermath of a weather shock (e.g. cash transfers, insurance schemes), but also public and private investments to build long-term resilience in the livestock sector. These may include mitigating animal losses through the development of local forage markets and improvement of storage capacities that increase the availability of winter forage in lean winters. This will help to lower the rate of mortality resulting from the shock and to maintain herd productivity during and following the shocks.

FIGURE 2. Restocking and veterinary services build climate resilience and increase food consumption



## Policies to improve public veterinary and animal-health services help mitigating welfare losses

Households hit by the harsh winter, but living in areas with a high density of public veterinary services, report a 28 percent and 37 percent increase in food consumption expenditure both in the short- and in the medium-run, respectively, relative to those who suffer from the shock but have low access to veterinary services (Figure 2). This suggests that public investments in veterinary services and infrastructures help herders improving their *ex ante* risk management skills on best practices to undertake in the face of weather shocks (e.g. forage management and stocking). Overall, long-term resilience to climate change in the livestock sector depends fundamentally on improving herd management practices. This is particularly true in Kyrgyzstan, where recent assessments of public veterinary services suggest that the current availability of health services is very low especially in rural areas, where neither veterinary nor sanitary inspection agencies provide adequate coverage.