

Household resilience and coping strategies to food insecurity:

An empirical analysis from Tajikistan

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Resilience Index Measurement Analysis (RIMA) is applied to panel household survey data from 2007, 2009, and 2011 in Tajikistan to investigate the causal impact of household resilience on food security in the presence of coping strategies.

Key findings

- Three significant factors define household resilience capacity: access to basic services, including affordable energy supply; assets; and social safety nets. The latter two factors underscore the importance of formal and informal transfers as effective responses when shocks intensify.
- Coping strategies allow households to quickly adjust their behavior to adapt to shocks in the short-term, potentially enhancing their overall resilience in the long-term.
- Resilience capacity at a given point in time enhances households' future food security. Households with higher resilience capacity are likely to have a higher household food expenditure share (HFES) and less likely to face loss of food expenditure share, particularly due to the protective effect of resilience when shocks intensify.
- While households with an older head have higher food expenditure share, households with a male head and/or located in rural areas are less likely to face a worsening household food expenditure share.
- As household size increases, the household food expenditure share initially decreases but eventually increases at a gradual pace. Conversely, as size increases, households are initially less likely to experience loss of HFES, but this likelihood eventually increases.

Recommended actions

- Ensure all Tajik households have equal access to basic services, particularly energy supply, which are significant contributors to resilience.
- Strengthen financial institutions to facilitate more effective formal transfers and enhance financial literacy to ensure households can optimally use formal and informal transfers.
- Prioritize social safety net programs, targeting women and children left behind due to migration.
- Implement interventions that target various aspects of household capacities, including income, social protection, nutrition, and health, simultaneously to yield positive long-term outcomes.
- Further research should examine livelihood strategies to understand how policies can target them to improve household resilience and food security.

Introduction

Food insecurity remains widespread among vulnerable households, communities, and countries and is exacerbated by increased shocks, particularly conflicts, natural disasters, climate change, food price volatility, and health crises¹. In addition to these periodic shocks, food insecurity in Tajikistan is complicated by the country's reliance on its emerging agricultural sector and remittances from abroad. Over 40 percent of Tajik households rely heavily on income from agriculture with limited diversification or investments in technology², which leaves them vulnerable to seasonal fluctuations in production and the growing impact of climate change. Further, amid limited domestic economic opportunities, households rely on increased male migration and remittances, but this heightens the socioeconomic vulnerability of the women and families that are left behind.

Recent research has highlighted the importance of resilience, as a conceptual lens and operational concept, to both understand and mitigate the impact of shocks on food security at various levels³. At the household level, this is tied to a household's capacity and willingness to activate response mechanisms when faced with shocks.

To generate evidence on the impact of households' resilience and coping strategies on food security, panel data from 1500 households in Tajikistan was analyzed using the Resilience Index Measurement Analysis – II (RIMA-II) methodology. Data were collected through three surveys, including the Tajikistan Living Standards Survey (TLSS) in 2007 and 2009 by the World Bank and the Tajikistan Household Panel Survey (THPS) in 2011 by the Leibniz Institute for East and Southeast European Cooperation in collaboration with the Dushanbe-based Research Center Sharq.

What follows is a summary of the findings from a recent peer-reviewed journal article⁴.

Measuring resilience and coping strategies

The Resilience Capacity Index (RCI) measures resilience at a given point in time. Figure 1 provides an overview of the pillars that comprise Tajik households' RCI, although not all of them are significant. Three significant factors define households' resilience capacity: access to basic services, assets, and social safety nets.

Access to basic services emerges as a vital pillar. In particular, the availability and affordability of heating and gas emerge as some of the largest contributors to resilience capacity. Additionally, the significance

of household assets and social safety nets underscores the crucial roles played by both formal and informal transfers in ensuring resilience. Whether through cash assistance or in-kind support, these mechanisms provide an efficient response when shocks intensify.

Coping strategies serve as adaptive mechanisms when households face immediate challenges and

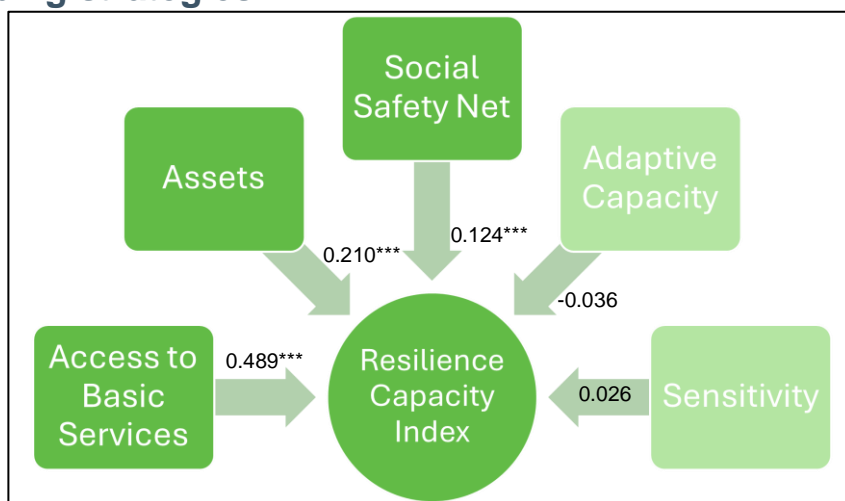


Figure 1: Components of household resilience capacity in Tajikistan

¹ Shenggen Fan, Rajul Pandya-Lorch, and Sivan Yosef. 2014. "Resilience for Food and Nutrition Security." pages 1-9.

<https://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/128437/filename/128648.pdf>

² Ozan Sevimli and Frauke Jungbluth. 2022. "Tackling food insecurity in Tajikistan." <https://blogs.worldbank.org/en/europeandcentralasia/tackling-food-insecurity-tajikistan>

³ Christophe Béné and Stephen Devereux. 2023. "Resilience and Food Security in a Food Systems Context" pages 6-15. <https://link.springer.com/book/10.1007/978-3-031-23535-1>

⁴ Egamberdiev, Bekhzod, Ihtiyor Bobojonov, Lena Kuhn, Thomas Glauben, and Kamiljon Akramov. 2024. "Household Resilience and Coping Strategies to Food Insecurity: An Empirical Analysis from Tajikistan." Applied Economic Perspectives and Policy 1–16. <https://doi.org/10.1002/aep.13422>

shocks, including food insecurity. While households respond to shocks in myriad ways, the analysis identifies ten distinct classes of coping strategies that households may employ, each reflecting different socioeconomic aspects. These strategies serve as a short-term response mechanism, allowing households to quickly adjust their behavior to adapt to shocks. This adaptability enhances their overall resilience as well in the long-term.

Impact on food security

Overall, the analysis confirms that resilience capacity and coping strategies at a given point in time enhance future household food security, defined in terms of a household’s food expenditure, adequacy of fruit and vegetable consumption, and food expenditure share. The following sections focus on insights related to the latter, i.e., the share of income spent on food, which is typically higher for more vulnerable households.

Figure 2 shows the impact of resilience capacity, coping strategies, and other factors on household food expenditure share and its loss/decline between 2009 and 2011. Higher resilience capacity in households tends to increase their food expenditure share, likely due to enhanced dietary diversity or food spending. Similarly, older household heads and fewer drought (shock) events also lead to higher food expenditure share. Interestingly, while employing more coping strategies (i.e., households with high coping strategy) can lower household food expenditure share, this does not indicate worse off households. This could be because these households may have greater RCI—households experiencing high resilience may be less willing to activate coping strategies. Further, household size also has a significant but non-linear impact – as size increases, the household food expenditure share initially decreases but eventually increases at a gradual pace. In other words, larger households initially spend a lower share of income on food but with further increases in household size, this share increases, albeit slowly. Finally, the analysis also found some nonsignificant associations between higher household food expenditure shares and male-headed households as well as rural households.

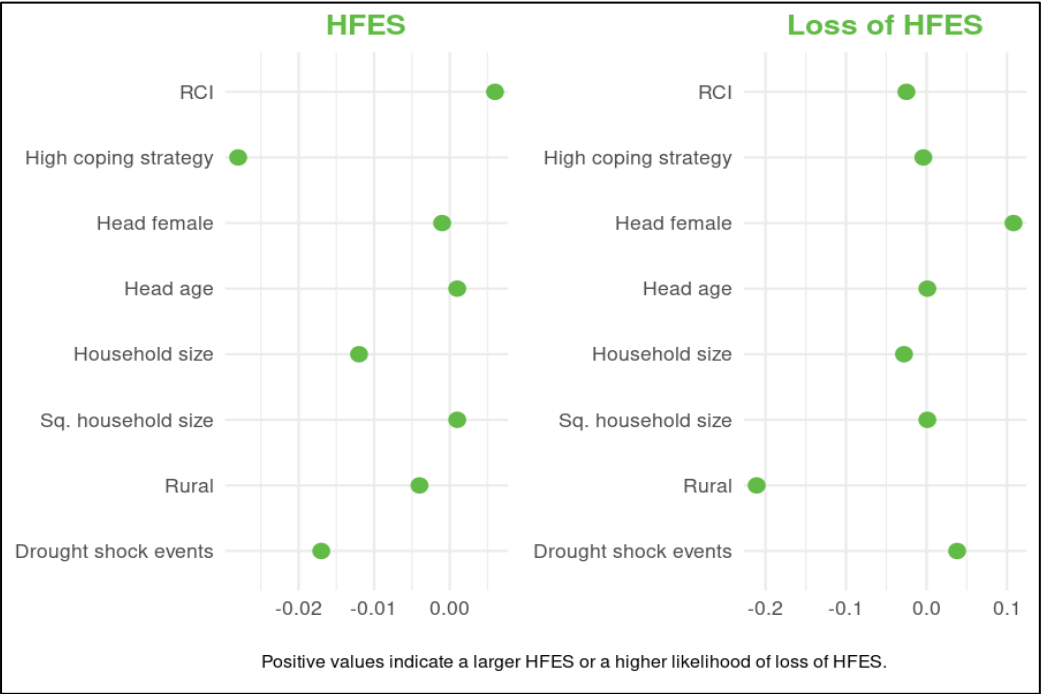


Figure 2: Factors associated with household food expenditure share (HFES) and its loss

In a similar vein, households with higher resilience capacity are less likely to face loss of food security, defined by worsening household food expenditure share. They are also less likely to face this if they are male headed, located in rural areas, and experience fewer droughts. Once again, household size has a significant but non-linear impact – as size increases, the likelihood of worsening food expenditure share initially decreases, then increases incrementally. The analysis also found associations, though not significant, between the likelihood of worsening household food expenditure share and households with

lower coping strategy or an older household head.

Additionally, the analysis further studied the interaction between resilience and shocks, finding that households with higher resilience capacity are likely to activate it to mitigate the negative impact of shocks on food security outcomes. In other words, when shocks intensify, resilience has a protective effect that sustains food security.

Looking ahead

The analysis of Tajik households' resilience capacity underscores the need for policies that prioritize improving access to basic services, ensuring efficient use of formal and informal transfers, and bolstering social security programs to enhance overall resilience and food security. First, it is essential to ensure all Tajik households have equal access to energy, particularly heating and gas, aligning with the goals of energy security and efficiency in Tajikistan's National Development Strategy 2030. This can be achieved by investing in infrastructure and diversifying energy sources in rural areas, among other strategies. Second, given the importance of formal and informal transfers in resilience-building, policies should focus on strengthening financial institutions and enhancing financial literacy. This can facilitate more effective formal transfers, while empowering households to make informed decisions about utilizing both formal and informal transfers. Third, the higher risk of food insecurity among female-headed households suggests that social safety net programs should prioritize support for women and children affected by male migration.

The paper's findings also highlight the positive impact of resilience on food security, including its protective role during shocks. Therefore, policy interventions that aim to enhance food security should incorporate resilience. Tajik policymakers should consider various factors contributing to livelihood, such as income, social protection, nutritional development, and healthcare, all of which can enhance household resilience. Interventions acknowledging the interconnectedness of these factors and targeting several of them simultaneously to build and reinforce household capacities are likely to yield positive long-term outcomes for households.

Finally, the analysis highlights the need for further research on livelihood strategies, especially those related to income generation or agricultural activities, to further unpack the relationship between resilience and food security. Another potential area for future research is exploring the factors that define subjective or self-perceived resilience, which could provide further insights on the connection between resilience and insecurity even though self-perceived and actual resilience may not always align. Moreover, there should also be more attempts to analyze the relationship between resilience and coping strategies. Continued research on this subject will be critical to both guide and monitor policy interventions aimed at building a more resilient and food-secure future for Tajik households.

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