

Adaptive capacity of apricot farming communities in response to changing water availability in Kyrgyzstan

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1. Introduction: Apricot farming in Southwest Kyrgyzstan

- Apricot cultivation is a key source of income for rural communities in the Ferghana Valley of southwestern Kyrgyzstan.
- Surface irrigation plays a crucial role, using water from glacial and snow-fed runoff from nearby mountains, while irrigation water efficiency is very low due to outdated, poorly maintained irrigation infrastructure.
- Progressing climate change and increasing water demand propelled by population growth jeopardise the irrigated apricot systems due to changes in water availability and its intra-annual distribution.
- Adaptation to these changes in water availability is urgently needed to enable the sustainability of apricot cultivation in the area.
- This study assesses the adaptive capacity of apricot farmers to adjust their practices to the increasing uncertainty of water availability in order to secure their livelihood.

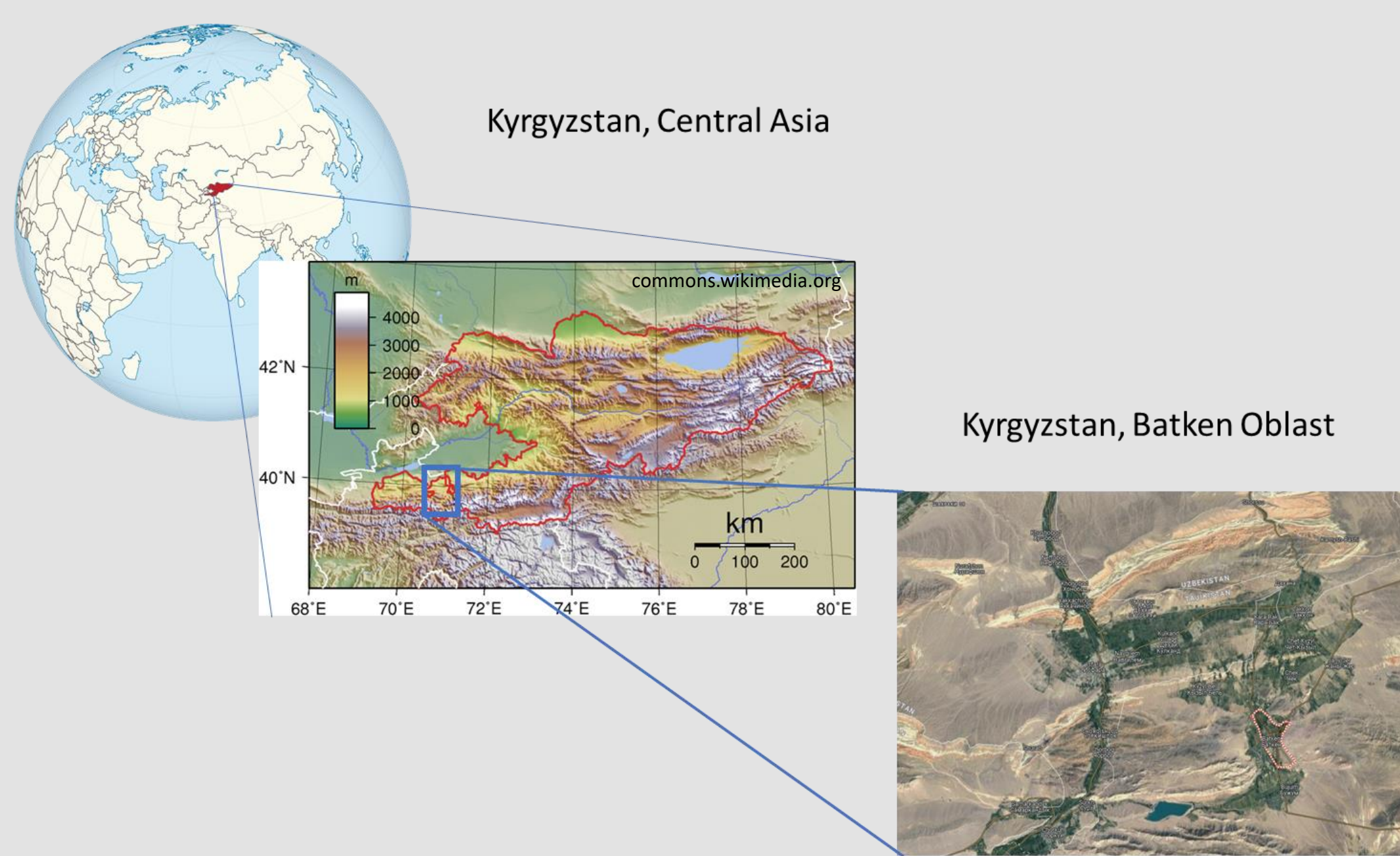


Fig. 1: Left: Study region Kyrgyzstan, right top: Apricot agroforestry system, Southwest Kyrgyzstan (© Philip Schierning); right bottom: Focus group discussion (© Gulbara Omorova)

2. Mixed-methods approach

1) Qualitative data:

- 9 Focus Group Discussions
 - 5 villages
 - 31 female, 22 male farmers
 - Age 28 – 69 years
- Key expert interviews

2) Quantitative data:

- Household survey
 - 7 villages
 - 85 observations
 - 56 male, 29 female farmers

- Farming and household characteristics
- Irrigation and water management practices
- Major shocks of past 10 years and related impacts
- Coping and adaptation mechanisms

3. Preliminary Results

3.1. Focus Group Discussion

Major shocks	Major impacts
• Water shortage • Pests and diseases • Conflicts • Droughts • Heat • (Late) frost • Heavy/ too much rain • Mudslides	• Crop yield decline • No access to harvest/ fields • No access to (internat.) markets • Poor crop quality

Major strategy to deal with shock is **migration** to earn off-farm income.

3.2. Household survey

Main shocks	Negative impacts	Coping and adaptation mechanisms
• Heavy rain (59%) • Drought (54%) • Flood (54%) • Hail (44%) • Irrigation restrictions (31%) • Heat (25%)	• Crop yield (55%) • Crop quality (43%) • Tree yield (40%)	• None (60-90%) • Replanting (8%) • Changes in irrigation practices, crop/ tree types, other (2-3%)

Barriers to adaptation: lack of knowledge (34%), lack of money (27%), none (34%).

Expected changes in next 10 years	Expected adjustments on farm
• Less irrigation water available (74%) • Water available later in year (10%) • No change expected (9%)	• Switch to more efficient irrigation (59%) • Switch to drought tolerant crops/ trees (37%) • Obtain own water source (16%)

4. Conclusions

- Farmers have experienced a number of shocks during the past 10 years including **water shortage**, **extreme heat** as well as **heavy rain**, affecting both yields and quality of their trees and crops.
- An important coping strategy is **migration** of household members and off-farm income contributes most of the household income for more than half of the surveyed households.
- The **border conflict** with Tajikistan has been perceived as one of the major shocks in the past years resulting in loss of access to fields (during armed conflict) and to (cross-border) markets.
- Despite the prevalence and awareness of water shortage and climate-related shocks, adaptation is minimal:
 - Farmer expectations are that deteriorating irrigation water availability in the future will ultimately require on-farm adjustments.
 - Yet, we currently see very little on-farm adaptation strategies to these expected future water shortages.



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More information: www.Sufachain.org

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