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“Bridging the gap between increasing knowledge and decreasing resources”

## Livelihood and Economic Activities as Adaptation Strategies to Climate Change in the Bolivian Andes

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### Abstract

This research explores the livelihood of rural communities and the potential of different economic activities as adaptation strategies to climate change in two regions of the Bolivian Andes: highlands and inter-Andean valley. Following an exploratory design, two communities were selected as case studies. Information was collected using a participatory rural appraisal approach, complemented by a household survey. The results are summarised in the following three main aspects:

1) The assessment of climate conditions reveals the occurrence of intensive rain, drought, hailstorm and frost as the main climatic threats. The incidence of these events results in increasing economic losses and causes negative impacts on the livelihoods of both communities.

2) Using principal component and cluster analysis, three wealth groups which significantly differ in their livelihood portfolios were identified. The poorest group is characterised by households with lower income, less education, older people, and with the higher percentage of women as a household head, resulting overall in higher vulnerability.

3) The assessment of the economic activities revealed seven categories of income sources: crop production, livestock production, natural resource related activities, out-farm activities, wage, remittance and others. Crop production and wage were the main income source in the communities with significant differences between the wealth groups. Additionally, the findings showed that crop production was positively correlated with three aspects: (i) participation in social networks, (ii) available labour and (iii) access to land.

The findings suggest that in both regions, when the climatic threat results in crop production losses, the wealthiest group relied on the income from wage work to cope with their losses. Consequently, as the livelihood of the poorest group limits the implementation of wage work activities; it might be recommended to integrate this group in social networks and reinforce alternative economic activities.

**Keywords:** Climate change, poverty, rural communities, vulnerability