

# Impacts of Urbanization and Climate Change on the Livelihood of Livestock Owners in the Cholistan Desert, Pakistan

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## Introduction

- Pakistan's rural economy relies heavily on livestock, with the livestock sector contributing approx. **58.3%** to the overall agriculture division and **11.4%** to the total GDP (Fig. 1).
- Owing to rural-urban migration and population increase Pakistan has the highest urbanization rate in South Asia and an urban population of **37.44%**.
- Livestock production systems are closely related to their environment and Pakistan is the 8<sup>th</sup> most climate-vulnerable country in the world.



Fig. 1: Animal herd resting in Cholistan, Desert (left); A man grazing his goats in city trash (right).

## Key Objectives

- To get an overview of Yazman Mandi households' livestock production, resource availability, and rural-urban linkage.
- Inquire about how urbanization and climate change affect household livelihoods, as well as livestock health and production.

## Methodology

- **Field Research:** April to August 2022, Yazman Mandi, Cholistan Desert, Punjab, Pakistan.
- **Group:** 13 villages were randomly selected and segregated into **G-Urb** and **G-Rural** based on the frequency of travel to nearby cities by household members.
- **Data Collection:** Household Surveys (**N=100**) and Focus Group Discussions (**N=6**), three each on urbanization and climate change.

## Conclusion

- Livestock production systems of Yazman Mandi, Cholistan Desert are transformed under the pressure of urbanization and climate change.
- Support from the Government in terms of policy-making, educating the livestock owners, and reinforcing extension services are required promptly.

## Results

### (i) Livestock Production System

- The typical livestock-owning household had 6 family members, 14 cows, 2 buffaloes, and 12 small ruminants.
- **G-rural** households were more dependent on livestock as the main source of income than **G-Urb** (Fig. 2).

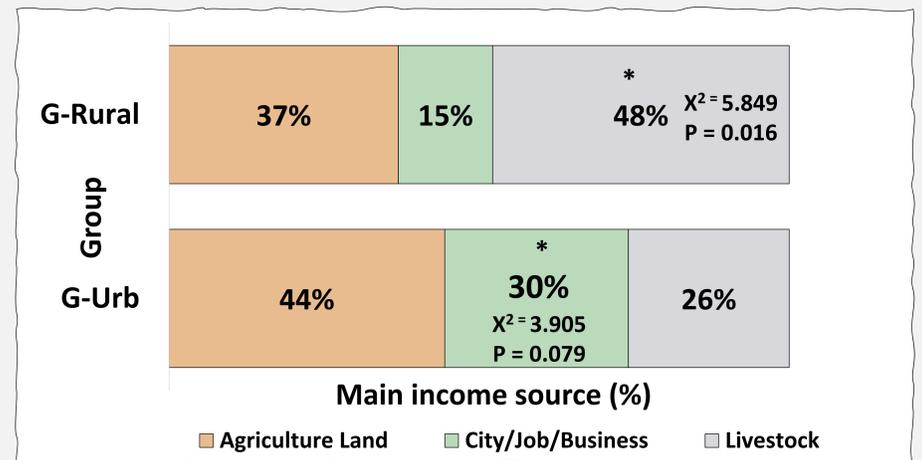


Fig. 2: Household main income resources (%).

- Households of both groups kept livestock for (i) home consumption, (ii) family tradition, and (iii) sale of milk and animals.
- **G-Rural** household held animals mainly due to (i) social identity and (ii) no other job opportunity.

### (ii) Impact of Urbanization

- Due to the urbanization impact the household members of **G-Urb** had more jobs in Govt./the private sector and were more skilled (Fig. 3).

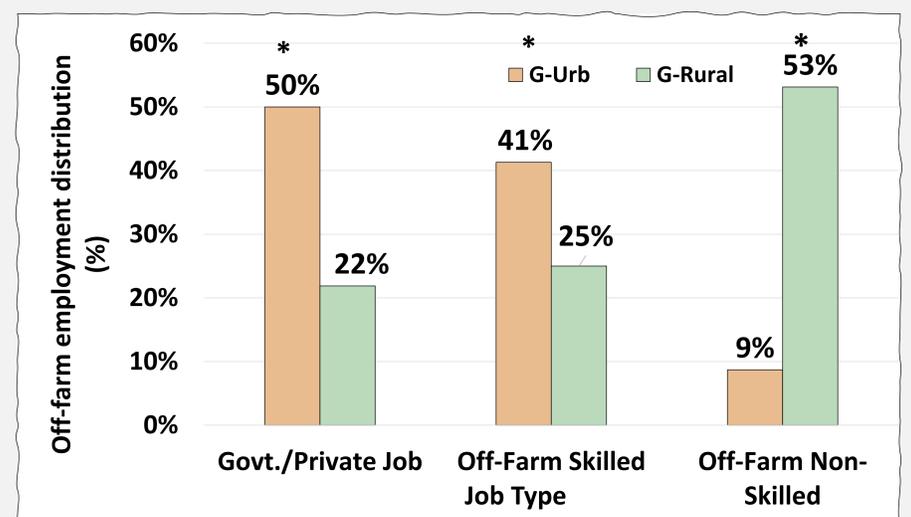


Fig. 3: Household off-farm employment distribution (%).

### (iii) Impact of Climate Change

- As per focus group discussions on climate change the livestock owners stated that;
  - (i) Animal production decreased drastically due to fodder and water deficiency, heat stress, and increased disease incidence.
  - (ii) Sale of animals due to unavailability of arable land and to cover the Vet expenses.