TECHNISCHE UNIVERSITÄT DRESDEN

Land Use Patterns and Climate Variability in The Bolivian Andes

Thesis Proposal

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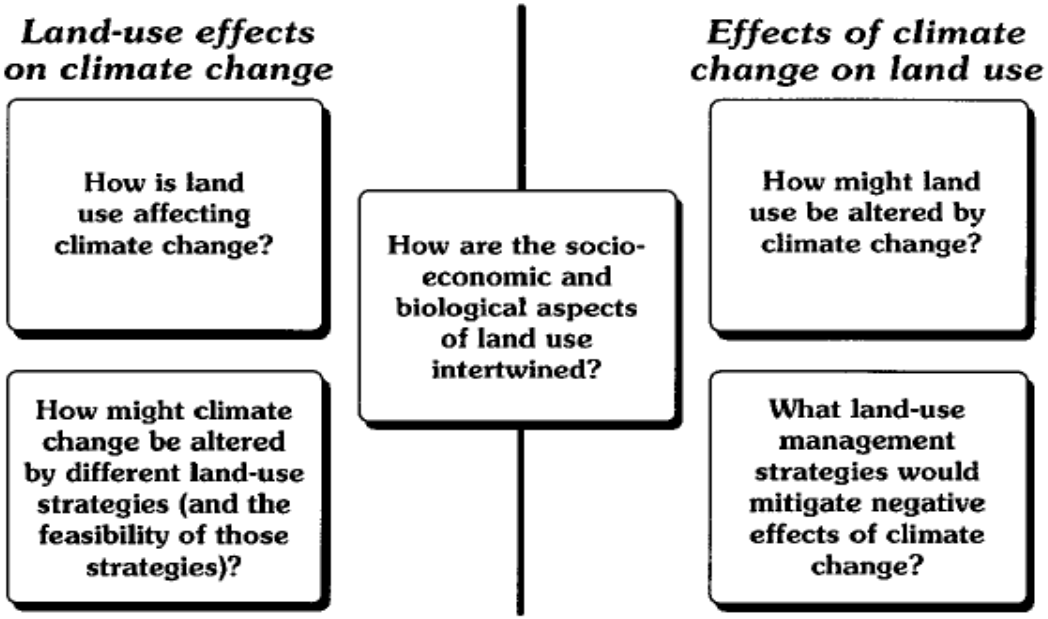
OUTLINE

1. Introduction
2. Research question
3. Objectives
4. Tools
5. Methods
6. To define

INTRODUCTION

- Climate change represents an urgent challenge for the well-being, especially in those countries where the poorest people is living.
- The Andean: most impacted areas over the next 15 years.
- In Bolivia: smallholder farmers and indigenous peoples are already experiencing climate-related vulnerabilities.
- Observe climate and environmental changes by first-hand, and adapting their knowledge, ***land use*** and survival strategies.

- Land-use activity contributes to climate change, and changes in land-cover patterns are one way in which the effects of climate change are expressed



- Effects of climate change on land use refers to both how land use might be altered by climate change and what land management strategies would mitigate the negative effects of climate change.

- Advances in climate science have enabled climate modeling to provide a view of the future of the earth system on a global scale.

- However, different areas and environments are affected in a distinct way -> implications predictions of changes in weather patterns still remain unclear.

- It is important to study the main causes that are contributing to land use change associated with climate variation and other variables, and its impact in rural communities in Bolivia.

RESEARCH QUESTIONS

- *What is the correlation of land use patterns and climate variability in communities of Bolivian Andes?*
- *Which variables determine the land use change over the time in communities of Bolivian Andes?*
- *Which could be a possible scenario of land use patterns according the influence of climate variability?*

OBJECTIVES

Main Objective

- *To describe the land use patterns and its correlation with climate variability over the time in a determined area of the Bolivian Andes.*

Secondary objectives

- *To assess and describe the land use changes (forest coverage, glaciers surface, expansion of agricultural zone) of the study area over a period of time.*
- *To identify the most important variables of land use change over the time*
- *Analyze climate records (temperature, precipitation, humidity), and its possible impacts in the land use-cover through the use of Remote Sensing, Geographic Information System and field research (direct observations) in the selected area of Bolivian Andes.*
- *To develop a model of the possible scenarios of land use patterns*

TOOLS

- GIS instruments such as Satellite Images of different years.
- Historical records of meteorological and hydrological data (precipitation, maximum and minimum temperatures, percentage of humidity) SENAMHI
- GPS navigator
- GIS software
- Statistical software

METHODS

- Classification of the cover land through satellite images of the study area during different periods of time and field work , identifying the most important categories.

- Workshops and structured interviews in order to identify the most important ***variables*** of land use change over the time (statistical analysis)

Methods

- Collect and analyze meteorological and hydrological data records of daily precipitation, temperature (max-min), humidity.

- Develop a model to predict a future scenario of climate variability and land use patterns

To define

- Study area
- Timetable
- Criteria of land use classification
- Variables to assess

Final Design of the proposal

Muchas gracias!

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INCA International Network on Climate Change