Traditional Ecological Knowledge Transmission. New Agricultures, New Religions, New Education

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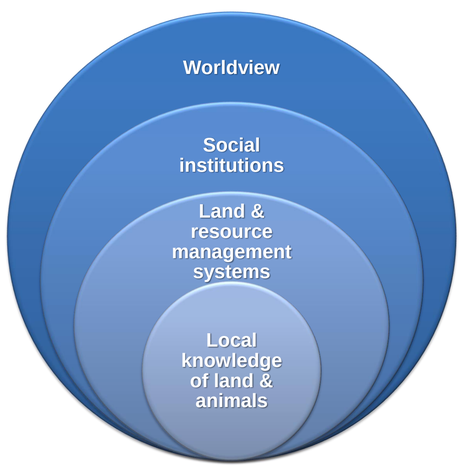
Introduction

- Traditional ecological knowledge (TEK) has a great potential to contribute to the resilience of rural communities in face of socioecological changes.
- TEK is embedded in a knowledge-practice-belief complex that allows its repetition and retention.
- There is an urgency to gain more insights on how this knowledge is transmitted, transformed, and erodes over time.



Levels of analysis in traditional knowledge and management systems – the Knowledge-practice-belief complex[1]

[1] Berkes, F., J. Colding, and C. Folke. 2000. Rediscovery of Traditional Knowledge as Adaptive Management Ecological Applications.

Case study

RQ. How socioecological changes impact the transmission of TEK within and across generations?

Landscape view of the Municipality of Tiraque, Bolivia

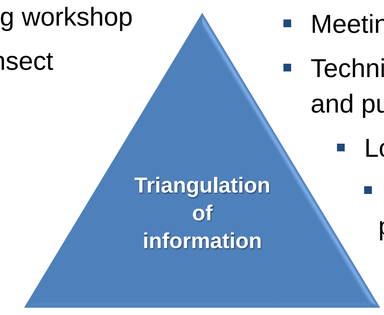
- The study took place in Tiraque, a rural municipality located in Cochabamba (Bolivia).
- Long history of weather forecasting using natural indicators (phyto, zoo, astronomical and atmospheric).
- Risk of frost, hailstorms and winds.

Methodology

- A participatory zoning workshop
- A transect

Secondary information:

- Meetings minutes
- Technical reports and publications
  - Local myths
  - Research publications



- 22 questionnaires with students from a local Bachelor programme.
- 30 interviewees from three generations (15 to 24, 25 to 49, and over 50-years-old).
- 8 interviews with national experts.
- 9 interviews with local key informants.

Topics

- TEK for weather forecasting using natural indicators.
- TEK use, transmission and loss.
- Factors affecting TEK transmission and use
- Use of new technologies.
- Role of formal education in TEK´s transmission
- Andean worldview.

Results

- 46 natural indicators and 17 festivities and rituals were mentioned by interviewees.

Transmission of knowledge and future perspectives

Generation	Mode of transmission	Type transmission
15-24 yrs.	Obliquely & vertically	Dialogue combined with demonstration and observation
25-49 yrs.	Obliquely	Dialogue combined with demonstration
>50 yrs.	Vertically & obliquely	Observation

Five factors are affecting TEK´s transmission:

1) Migration
2) Formal education
3) New religions
4) Politization of rural communities
5) ´Climate change

Impacts in socioecological mechanisms under great magnitude changes

Socioecological mechanisms	Impacts in TEK
Generation, accumulation, and transmission of local ecological knowledge	Spaces for intergenerational transmission of knowledge are disappearing Not much horizontal transmission of knowledge between peers leading to transformation, integration nor innovation
Structure and dynamics of institutions	Elders´ knowledge is losing legitimacy. Agrarian unions are no longer spaces to share and innovate agricultural knowledge New religious beliefs are redefining taboos and regulations, eliminating sites, symbols, rituals, and festivities
Mechanisms for cultural internalization	The "cultural script" is not practiced in the daily routine of communities.
Worldviews	The overall Worldview is being affected by socioecological changes

Conclusions

- 5 internal and external socioecological factors impacting the transmission of TEK were identified.
- The magnitude of the change generated by these factors are producing the rupture in the knowledge-practice-belief complex, leading to the erosion and imminent extinction of this TEK.
- It is important to call on the attention of younger generations, through intergenerational and inter-scientific dialogue for the co-creation of hybrid knowledge suited to new scenarios.
- By doing so, rural communities may increase their resilience to socio-environmental changes.

Acknowledgments

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"A grandfather grabs his grandson and goes with him to the hill. There he shows him the behaviour of the stones and clouds: ´look son, this stone is perspiring. If it is perspiring and there are no drops of water, there will be a very good, calm rain´"