Mountain ecosystems-analogues: possibilities and limitations of knowledge transfer and experience in the field of mountain governance

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http://www.mountainresearchinitiative.org/index.php/activities/working-groups/mountain-governance

Abstract

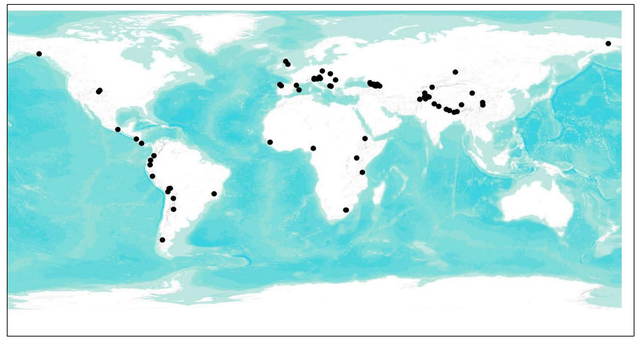
Mountain ecosystems are in many respects similar in natural terms; they could have similar sizes of mountain ranges, a set of landscapes zones, climatological vertical gradients, and even to a certain extent - the history of resource development and the impact of modern climate change. Hence, there are many obstacles of a transfer of knowledge from one mountain region in another. In what measure we can transfer results of research, say, between the Appalachians mountains and the Urals, the Andes and the Himalayas, the Alps and the Caucasus? Even similar types of mountain ecosystems can significantly differ according to their dynamics because of different modes of governance (centralized or not centralized, with clear institutions or with combination of formal and non-formal institutions etc.). Nevertheless, due to global climate change, universal recommendations and approaches are being developed that may be suitable for uninhabited nival-glacial ecosystems, but need significant transformation regarding lower-lying more developed areas. The presentation will raise the question of what opportunities and what restrictions exist regarding the transfer of the results of research from one social and ecological system to another in the field of mountain governance. For this purpose, the results of the survey conducted by the MRI in various regions of the world, especially the Caucasus and the Alps, will be used. Many of the basic concepts and terms proposed by the researchers of the Alps have become universal and spread all over the world. The use of alpine terminology and approaches to the study of natural processes is deeply rooted in the Caucasus. However, very little has been done in the context of converging positions on the study of examples of mountain governance. In the context of modern challenges, there is an acute problem of developing and applying of comprehensive integrated policy approaches.

Introduction

Mountain ecosystems-analogues are ecosystems that are disaggregated in space, similar in structure and external features. Similarity can be manifested both in individual components, for example, vegetation or climate, and in the features of the horizontal and vertical structure of landscapes. A combination of similar ecosystems forms regional analog systems.
Examples of analogous ecosystems (EA) are high mountain landscapes: glaciers and nival systems, alpine wastelands, alpine deserts, etc. At lower altitudes, there are also EA that are similar in terms of geomorphology, climate, vegetation, and soil (for example, intermountain arid basins).
Analogous ecosystems have similar dynamics and respond equally to external challenges. In the context of studying the impact of global changes on mountain ecosystems, this feature is of great value for monitoring and preventing negative processes.
This presentation will discuss the issue of governance in EA. The work is based on a survey conducted by the MRI working group on mountain governance.
At this stage of the study, questions will be raised about the classification of EA, the classification of the main governance problems, the occurrence of problems in certain ecosystem-analogues. A special place will be given to regional EA. Such regional systems analogues as the Alps and the Caucasus will be analyzed in more detail.

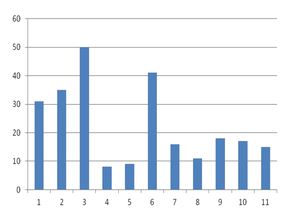
Methodology

Governance is the process by which rules, norms, traditions and strategies interact to guide behavior, and how these are formed, applied, interpreted, and revised (adapted from M. McGinnis 2011).
Overarching Objective: Produce an assessment of challenges to, and advances toward, effective governance of mountain social-ecological systems around the world for social, economic, and environmental sustainability.
(1) identify common problems, risks and challenges that undermine or impede effective governance for sustainability of mountain social-ecological systems, and
(2) identify and analyze factors/contexts and principles that appear to be associated with governance successes for fostering sustainability of mountain systems, and how "successful" cases have overcome or are addressing challenges.
The developed questionnaire contained several blocks of questions devoted to political structural conditions, political, economic and social-environmental challenges for governance, as well as local characteristics of mountain governance.
In total, 80 questionnaires from 40 countries were completed.



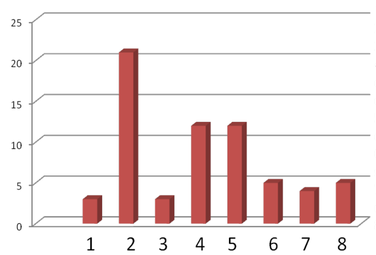
Distribution of the survey in the mountain regions of the world

Results



Biomes mentioned in research sites

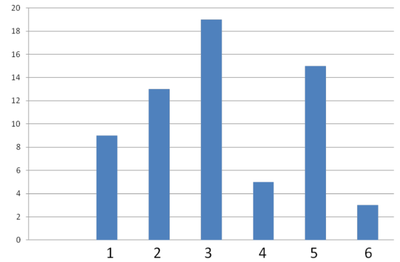
1. Snow, ice, scarce vegetation or upper alpine patches of mats
2. Alpine mats, lower alpine shrubs
3. Subalpine meadows, lower coniferous forests
4. Alto-tropical (páramos, etc)
5. Alto-oro-desertic (high mountain deserts, mountain tundra)
6. Montane mixed coniferous and deciduous forests
7. Montane Mediterranean mesophyllous and sclerophyllous forests
8. Montane laural evergreen forests
9. Montane tropical forests
10. Low mountain winter-deciduous forests
11. Mountain steppes (continental)



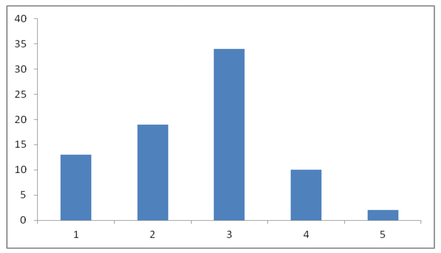
1- general (systemic) problems;
2 - top-down approach, centralization etc.;
3 - unequal access to resources;
4 - weak power, poor governance (small capacity to solve pressing problems, often - corruption);
5 - ineffective management, an acute conflict of environmental and economic interests;
6 – balancing economical interests with sustainability of natural resources;
7 - demographic problems (emigration, resettlement, etc.);
8 - lack of participation.

Most important political challenges

Is anything being done in the field of governance as a response to the most important political challenges:
1 – yes; 2 - partly (in certain realms); 3 - the problem is recognized, but the process of resolving the problem is slow; 4 - may be; 5 – not; 6 – yes, but the situation is worsening



How is the system of governance working overall to support environmental sustainability in the research site:
1 Very poorly – little interest and severe problems; 2 Poorly – some interest and minimal effort; 3 Mixed – some failures and some successes; 4 Fairly well – many steps forward; 5 Very well – broadly effective

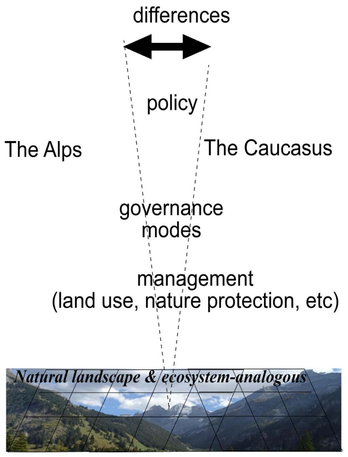


Experience comparing the Alps and the Caucasus

The Alps (space of the Alpine Convention) and the Caucasus (space of the ecological region)

	The Alps	The Caucasus
most important political challenges	ineffective management, an acute conflict of environmental and economic interests; need to improve the development models, balancing economical interests with sustainability of natural resources *"Balancing economical interests with sustainability of natural resources"* *"Absence of workplaces other than agro-pastoral and tourism-based in the context of high earnings of other types of (non-local) workplaces; it create tensions in expectations; there is also a typical pressure of tourism in the summertime to the infrastructure (an lifestyle of local people)"*	top-down approach, centralization (> 80% cases) *"Local authorities are powerless"* *"Nepotism"* *"Judicial and electoral systems need to be reformed"*
anything being done	yes (50%) *"Yes, there are ongoing activities, some of them project based, to keep own values as valuable for local people but also for the broad public. Most of them are learning activities (materials, trails, local museum and a saying "The landscape is not here to be changed but to change/ impact You". Another issue is high standards (most) people have (e.g. studies on Univer. degree for their children or achieving EU award for "best Alpine tourism destination")"*	The problem is recognized, but the process of resolving the problem is slow (75%) partly (in certain realms) *At all levels of power, something is being done, but very slowly and inconsistently*
How is the system of governance working overall to support environmental sustainability in the research site?	Mixed (50%), fairly well and well	Mixed (60%), some and little interest

Conclusion



Natural landscape & ecosystem-analogous.
Similar environmental conditions help transfer knowledge during the research and understanding of natural processes. We can easily operate with similar natural terms (basically the terminology was created in an alpine school), although there are difficulties in the general classification.

Political landscape
The situation is different with the political landscape, with which governance is closely linked. There are significant difficulties in using concepts due to the wide variety of governance situations.