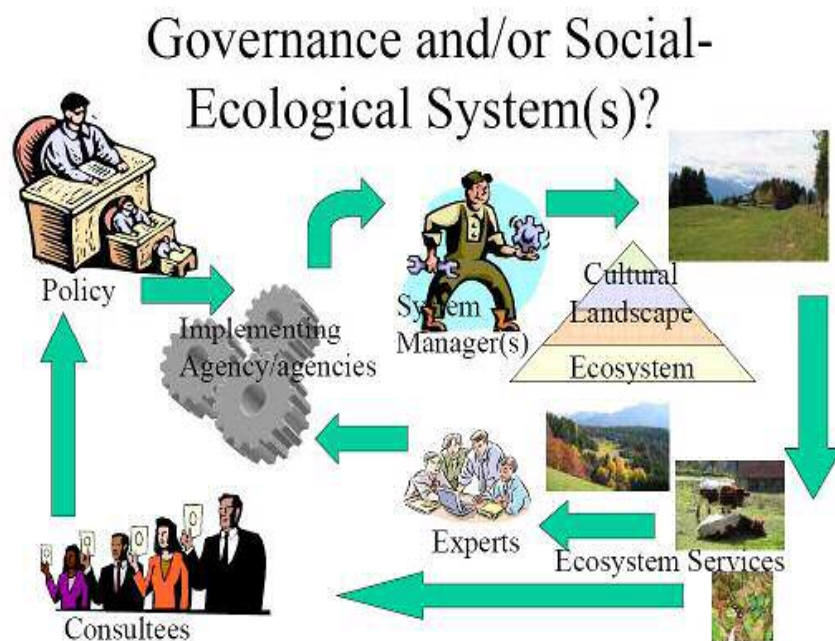


Briefing Note to accompany presentation on *Resilience and social ecological systems in upland cultural landscapes, People, landscapes and nature Conservation*. Studies in Alpine Communities in a time of change. Methods to identify resilient outcomes of high social, economic and ecological value. Fondazione Edmund Mach, San Michele all' Adige, Trento July 10, 2009.



The above diagram may help conceptual debate on the relationship between adaptive governance and identification of resilient systems.

Workshop participants do not need to agree with this diagram. It oversimplifies but participants can identify new arrows and similarly new categories can be added or existing ones subtracted or relabeled.

Using the above diagram it is possible to identify at least four different possible SESs.

1. From the perspective of the conservationist, an SES is represented by the farmer (system manager) and the cultural ecosystem service of biodiversity (salamander) that is delivered by his management of the ecosystem.

Resilience thinking looks at this relationship as an entity with system outputs. We can identify past shocks and what gave system resilience; or we can identify lack of resilience to current economic shocks and identify interventions to maintain the system. Alternatively we could replace by a different SES.

2. The policy maker might view the implementing agency as part of the SES. The agency (with or without the farmer), would be part of a system that delivered cultural landscape and biodiversity services. Resilience thinking would identify the system as important rather than a specific biodiversity output. Thus a further evolution of the desired system might include agriculture (cows) representing pluriactivity by the farmers and delivery of local produce as an additional ecosystem service of the SES.

3. An alternative SES could include the farmer (system manager) and the agricultural outputs (as ecosystem services) but the system objective could be the retention of the cultural character of the indigenous land-managing population for purely social objectives. The farming community would have a strong sense of place and see their management as part of their cultural identity within a cultural landscape of maintained mountain pastures. This particular SES can readily be tested by Resilience Assessment techniques.

4. A larger scale SES could be the whole diagram. All of the ecosystem services might deliver the Unesco definition of an organically evolved continuing landscape. The "Outstanding Universal Value" (OUV) attribute would depend upon recognition by a world constituency that would need to be connected to the "expert" constituency in order to be able to feed into the local SES in a way that enabled both adaptation and resilience rather than loss of stability. Human well-being in terms of health and cultural values would be part of the ecosystem services delivered to a wider than local population.

GLOSSARY

The primary source are definitions used in the Resilience Alliance website.
www.Resalliance.org Some additional comments help place the context of upland cultural landscapes.

Adaptive Cycles and Adaptive Management The **adaptive cycle** is a general model of system dynamics that links together system organization, resilience, and dynamics. It adds two extra phases to the ecological model of growth and conservation. These are release (collapse) and re-organisation. The model can be applied to ecosystems and to Social Ecological Systems. Adaptive cycles can be nested in a hierarchy across time and space. Slower components of the nested system or **Panarchy** may add stability to the system.
<http://www.resalliance.org/570.php>

Adaptive management seeks to aggressively use management intervention as a tool to strategically probe the functioning of an ecosystem.

<http://www.resalliance.org/600.php>

Active adaptive management whereby management actions are designed as experiments encourages learning and novelty, thus increasing resilience in social-ecological systems.

<http://www.resalliance.org/576.php>

Cultural Landscapes

Three categories of cultural landscape are recognised by the World Heritage Convention. The Operational Guidelines (UNESCO 2008) recognise an organically evolved landscape as one sub-category defined as a “continuing landscape”.... “which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time”

As organisers of this Workshop we consider that this description might well apply to the adaptive management of an upland ecosystem through a social-ecological system comprising the co-evolution of an upland ecosystem and its forest and agricultural managers

Millennium Ecosystem Assessment

Initiated in 2001,(by the United Nations) the objective of the MA was to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being.

<http://www.millenniumassessment.org/en/About.aspx#1>

See also

<http://www.millenniumassessment.org/documents/document.360.aspx.ppt>

Resilience

Ecosystem **resilience** is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future.

<http://www.resalliance.org/576.php>

Social-ecological system (SES)

A **social ecological system** an integrated system of ecosystems and human society with reciprocal feedback and interdependence. The concept emphasizes the ‘humans-in-nature’ perspective.

http://wiki.resalliance.org/index.php/Image:Social_ecological_system.jpg

Panarchy

A nested system of social-ecological systems.(SES). The term panarchy was invented to distinguish it

from traditional hierarchies. It recognises the adaptive cycle as an engine of new combinations and

the multiple connections between phases of the different SES.

See <http://www.resalliance.org/3871.php>

Threshold

A breakpoint between two regimes of a system (Walker, B. and J. A. Meyers. 2004).

Retrieved from <http://wiki.resalliance.org/index.php/Glossary>"

Transformation

A change that results in a fundamentally new system.

<http://wiki.resalliance.org/index.php/Glossary>"