Integrating consideration of ecosystem resilience into vulnerability and impact assessments

Practical considerations for the BMU-funded UNEP/UNDP/IUCN Joint Programme on Ecosystem-Based Adaptation in Mountain Ecosystems

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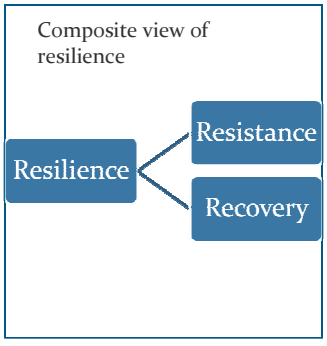
Ecosystem resilience
(what is it and why it is important to adaptation)

1) Ecosystem services can help people adapt to climate change.
2) Ecosystems are affected by a number of pressures, including climate change, decreasing their capacity to deliver services.

Ecosystem resilience = the ability of a system to maintain basic structural and functional services over time despite external pressures.



Ecosystem resilience
(what is it and why it is important to adaptation)

Improving ecosystem resilience by focusing on the structural and functional features that underpin the ecosystem services required, will help people adapt and decrease vulnerability to climate change.

Example of features:

- Water retention capacity
- Vegetation structure that reduces erosion
- Maintaining a reservoir of pollinators and biological pest control agents.

Paramos, Peru
(Photo ©Craig Downer)

Mount Elgon, Uganda
(Photo ©Philip Bubb)

Flower fields near Jomson, Nepal
(Photo Rens Pothuizen)

Adaptation strategies need to address ecosystem resilience

- **Cancun decision**

'invites Parties to enhance action on adaptation …by undertaking, inter alia, the following ….Building resilience of socio-economic and **ecological** systems, including through economic diversification and sustainable management of natural resources'. (emphasis added)

- **Ecosystem resilience in adaptation strategies**

Few adaptation strategies set out concrete actions to maintain or enhance ecosystem resilience.

- **Vulnerability and Impact Assessments**

One obstacle is the limited availability of methodological guidance and good practice examples for including an analysis of ecosystem resilience in the Vulnerability and Impact Assessments that form the basis of adaptation planning.

Vulnerability and Resilience

Steps to include in VIA:
1.Identify those ecosystem services (ES) whose continued and enhance supply will be of importance for reaching goals of adaptation.

2.Assess the current and future capacity of ecosystems to deliver these ES, in the light of climate projections.

3.Identify areas where climate change may exacerbate a situation in which the demand for ES exceeds their availability.

4.Propose adaptation measures to address identified problems including by increasing ecosystem resilience.

Challenges for incorporation of ecosystem resilience in VIA and solutions

Challenges

1) Data are nearly always limited.
2) Understanding of ecosystem processes, function, impact of climate change and long-term resilience is imperfect.

Solutions