The role of ecosystems in the Sendai Framework Monitor

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Ecosystem-based Approaches in the SFDRR

Environment mentioned in:
• Preamble
• Expected Outcome & Goal
• Guiding principles
• Priority for actions (3/4)
• International cooperation

But:
• No direct indicator related to environment or ecosystems

Ecosystem-based Disaster Risk Reduction

**Nature-based Solutions** are (...) actions to protect, sustainably manage, and restore natural or modified ecosystems, that address **societal challenges** effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.


**Eco-DRR** is the sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim of achieving sustainable and resilient development.


**Green Infrastructure** is a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation, and management of wet weather impacts that provides many community benefits.

Source: UNISDR (2017): 54970_techguidancefdigitalhr.pdf (unisdr.org)
Monitoring disaster-related losses of ecosystems in the SFM

**B-5: Disrupted/destroyed**

- B5a: Hectares of crops affected
  
- B5b: Number of livestock lost

**C-2: Direct agricultural loss attributed to disasters**

- Crops; Livestock; Forestry; Aquaculture; Fisheries

**C-5: Direct economic loss resulting from critical infrastructure**

**D-4: Number of other destroyed or damaged critical infrastructure**

**Disaster-related losses of ecosystems**

- Arable land; Crops
- Livestock
- Crops; Livestock; Forestry; Aquaculture; Fisheries
- Coral reefs; Mangrove forests
- Coral reefs, Mangrove forests; Protected areas
The importance of considering ecosystem and their services

Provisioning services
- Food
- Raw materials
- Fresh water
- Medicinal resources

Regulating services
- Local climate and air quality
- Carbon sequestration and storage
- Moderation of extreme events
- Erosion prevention/Maintenance of soil fertility
- Waste-water treatment
- Pollination
- Biological control

Cultural services
- Recreation and mental and physical health
- Aesthetic appreciation and inspiration for culture, art and design
- Spiritual experience and sense of place

Habitat/Supporting services
- Habitat for species
- Maintenance of genetic diversity

Critical infrastructure / Green Infrastructure

Opportunities for considering ecosystems and ESS losses in the SFM

Recommendations

1) The reporting of livelihoods lost due to disasters should go beyond crop and livestock and consider other relevant ecosystems and ESS which provide a basis for livelihoods. (Target B)

2) Most ecosystems should be considered as critical infrastructure, which can be well justified by the role ecosystems and their services play for DRR. Green infrastructure needs a more clear and applicable definition in the SFM and complemented with blue infrastructure. (Target D)

3) The majority of ESS can be considered as basic services that are needed for society to function, such as fresh water supply, waste water treatment or services that are relevant for human health and well-being. Against this background, ESS could be integrated into indicator D-8 (disrupted services) and reported in reference to ecosystem losses under green (and blue) infrastructure (monitored by indicator D-4). (Target D)

THANK YOU FOR YOUR ATTENTION

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