



"Nature-based Solutions: opportunities and challenges"

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Ecosystem Management Programme



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Defining our work

1. Ecosystem restoration approaches







2. Issue-specific ecosystem-related









3. Infrastructure-related approaches





4. Ecosystem-based management



5. Ecosystem protection approaches







Societal challenges and SDGs

















































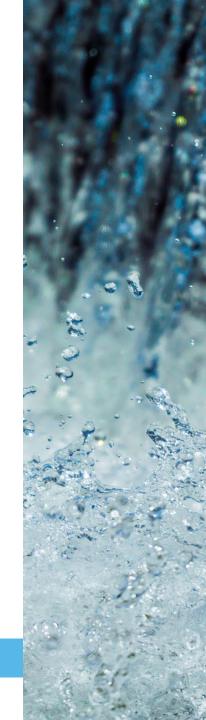


Nature-based Solutions are...

Ecosystem Management

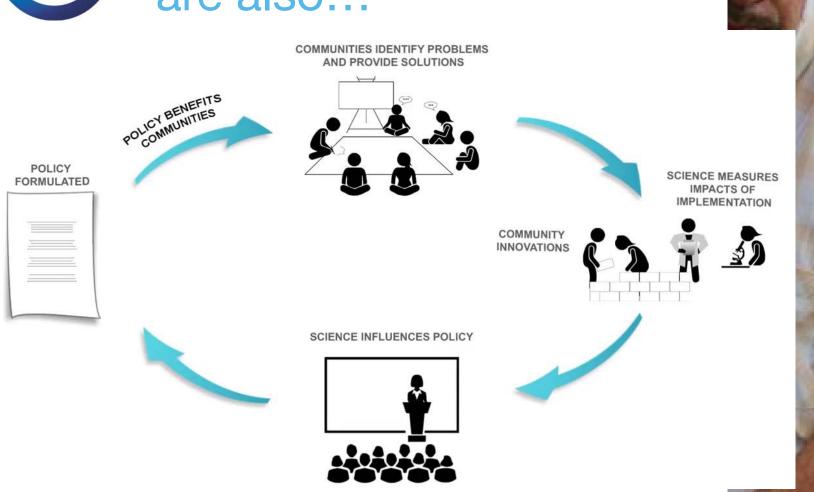
Climate Adaptation Disaster Risk Reduction

Sustainable development





Nature-based Solutions are also...





Nature-based Solutions are also...

Hybrid approaches, utilizing a combination of natural and grey infrastructure



Natural infrastructure

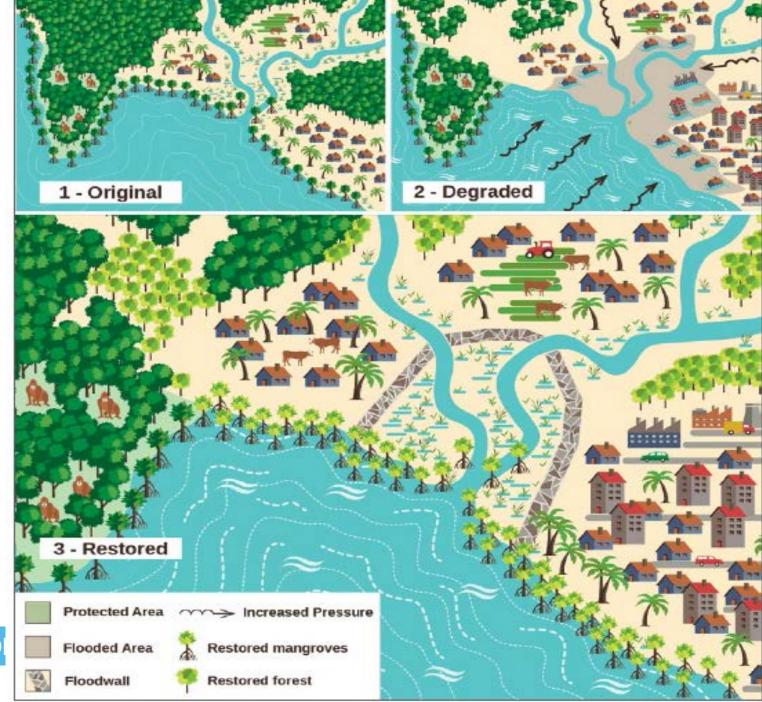


Grey infrastructure



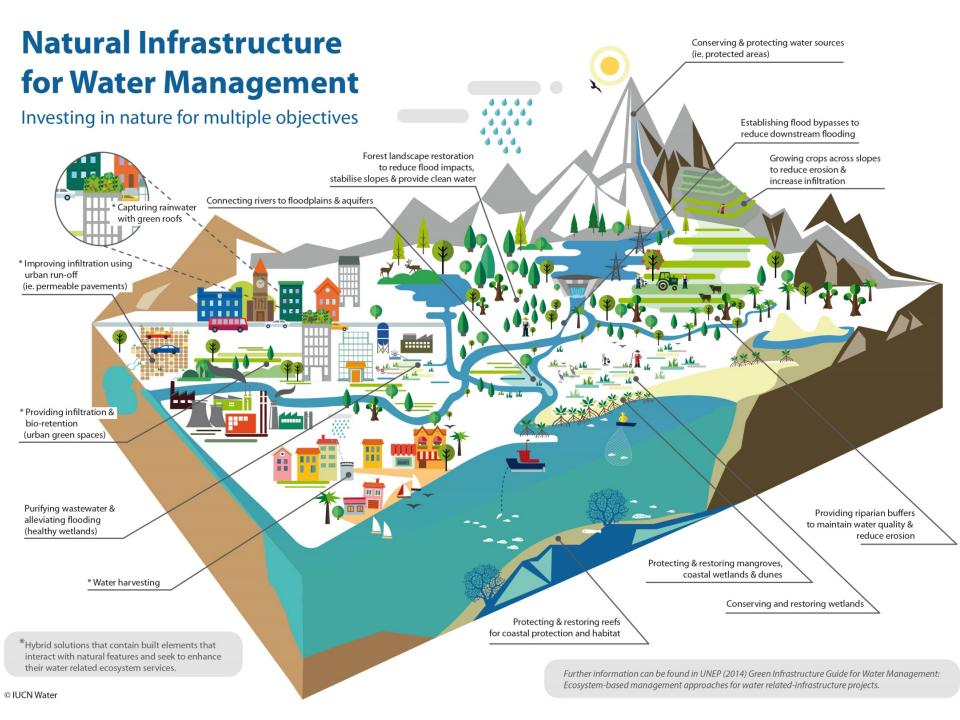






INTERNATIO

Nature-based Solutions from local to regional scale



Combining our understanding of natural systems with the ingenuity of built infrastructure allows us to maximise the benefits of both to ensure our economies prosper



The role of dams is to capture and store water when there is excess for use when there is too little. Dams regulate flows, decrease floods, help to stabilize extreme flows and increase flows



...............

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FLOW REGULATION



Flows in rivers are naturally regulated. The speed of runoff is determined by catchment characteristics

SOIL AND SLOPE STABILITY



The greater slope stability the lower the erosion and the lower the amount of sediment washed downstream. Soil and slope stability is largely a function of catchment characteristics and management gractices.

GROUNDWATER RECHARGE



Groundwater is a natural reservoir of water that supplies rivers and streams during dry periods. The amount of rainfall that recharges groundwater is a function of catchment characteristics and management practices

RIVER HABITAT



Rivers and riparian zones provide habitat for different migratory and non-migratory species (e.g. fish, insects, amphibians, reptiles, mammats, birds and plants)

ENERGY PRODUCTION

of economic growth

and hydropower remains a major

renewable energy option

The water that flows out of a

catchment depends on

both climatic variables (e.g rainfall,

temperature etc.) and catchment

characteristics le.g. topography, soils,

geology, land cover and land usel

DRINKING WATER SUPPLY



Sufficient clean water is a basic human need for everyday life and health. Dams and other built infrastructure can ensure supply at times when natural river flows would

IRRIGATION



Built infrastructure delivers water to fields through irrigation systems espential for growing crops. Blobally 20% of anable land is irrigated producing 40% of global crop yields

RESERVOIR FISHERIES



If managed carefully reservoirs can support productive fisheries

FLOOD CONTROL & PROTECTION



Downstream flooding can cause otherable lose of the as well as clamage to built infrastructure, crops and livestock. Dams can mitigate these losses by reducing flood peaks. In doing so they limit downstream flooding, reducing flood recession farming and other ecosystem services and habitat functions. Nature's functions and natural solutions can help countries build climate resilience to support actions identified in their national climate plans



R FISHERIES FLOODPLAIN GRAZING

FLOOD RECESSION AGRICULTURE

FLOODPLAIN FISHERIES

ESTUARINE FISHERIES

COASTAL SEDIMENT SUPPLY



Some fish migrate upstream to breed and spawn. By blocking migration routes dams may prevent fish spawning and so can undermine captum fisheries



Livestock grazing on the floodplain and delta areas are reliant on seasonal flooding to sustain pasture



Farmers depend both on floodwater to irrigate their crops, and on nutrients in flood water



Floodplain habitats support large fisher is by mobilizing nutrients and creating aquatic habitat. Flooding is the most important and biologically productive feature of many river ecosystems.



Estuary and near-shore coastal fisheries are dependent on nutrients washed into the sea from rivers. These nutrients effectively fertilize the sea thereby providing food for fish



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Towards a Global Standards for Naturebased Solutions



A standard is needed...

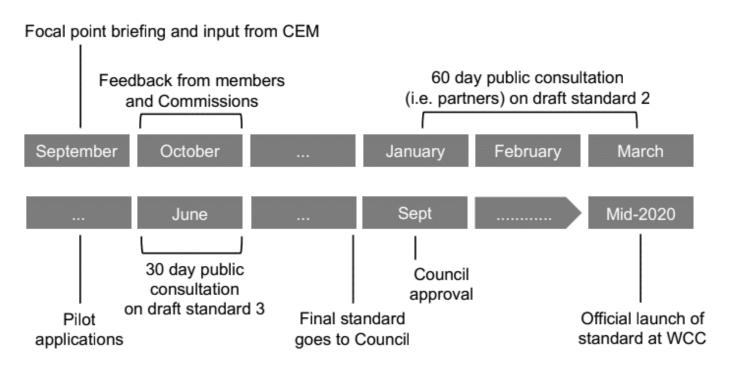
Not just to ensure quality, an NbS standard is needed to:

- 1. Safeguard nature from overexploitation
- 2. Engage stakeholders
- 3. Build common language and understanding
- 4. Increase demand
- 5. Incentivize positive sustainable change





How to engage





INTERNATIONAL UNION FOR CONSERVATION OF NATURE



Current seven criteria

- 1. Nature and biodiversity
- 2. Transparency and inclusion
- Adaptive management, governance & monitoring
- 4. Trade-offs
- 5. Land/seascape scale
- 6. Synergies
- 7. Mainstreaming

Example full criterion:

Criterion 7: NbS are incorporated into policies and regulations





How to engage

- Promote and take part in IUCN public consultation (Jan-March & June 2019)
- Offer a pilot case study (past or current interventions)
- Email <u>nbsstandard@iucn.org</u> with questions and feedback





Questions for you

 Are you doing something that might be considered an NbS?

 Is there a project of yours that might benefit from a hybrid approach?

