



Ecosystem based Disaster Risk Reduction

Approaches, Tools, and Networks

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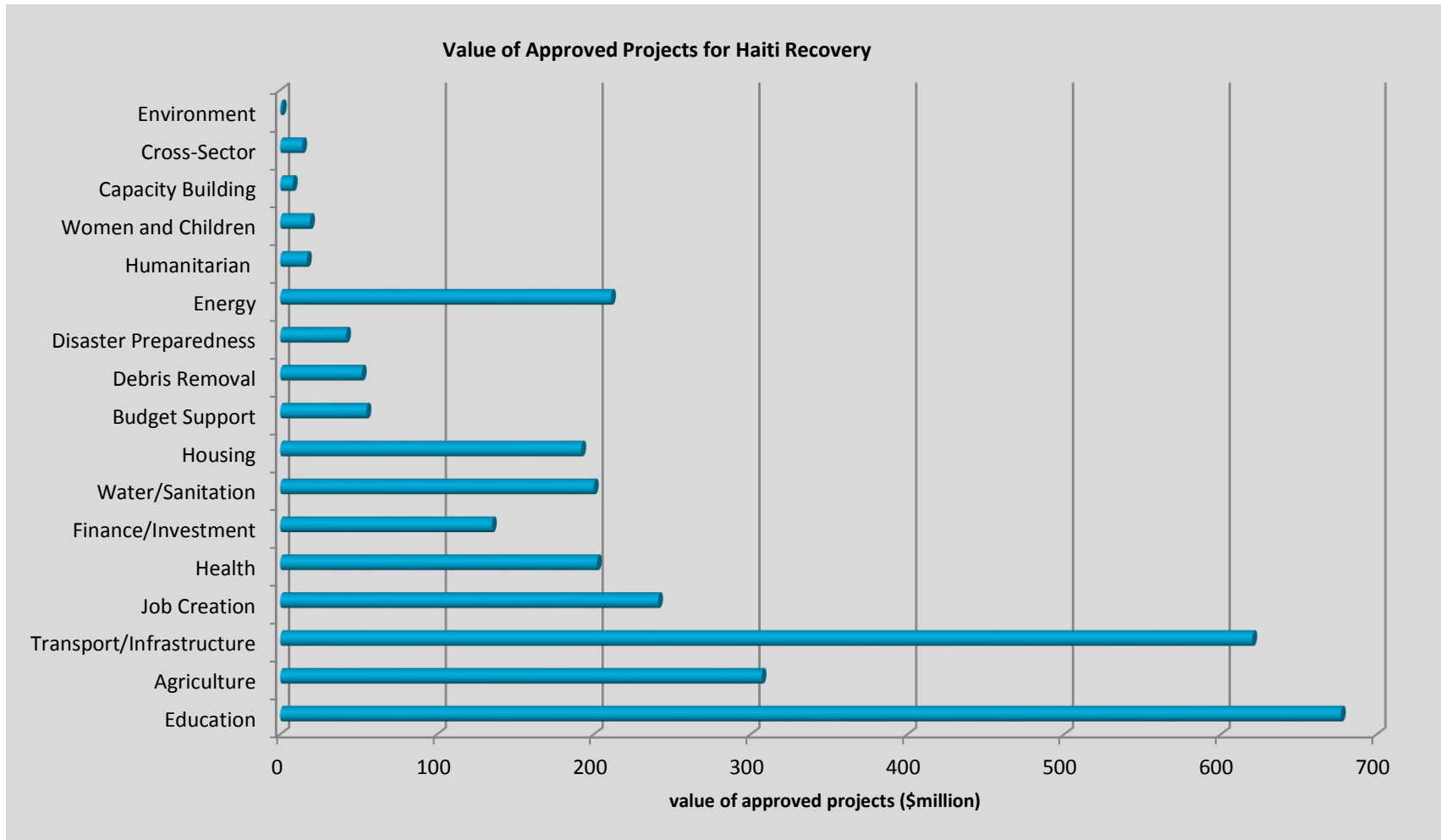


Defining Ecosystem Based Disaster Risk Reduction

**“Sustainable management, conservation and restoration of ecosystems to provide services that reduce disaster risk by mitigating hazards and by increasing livelihood resilience.”
(PEDRR, 2013)**



Story of Haiti



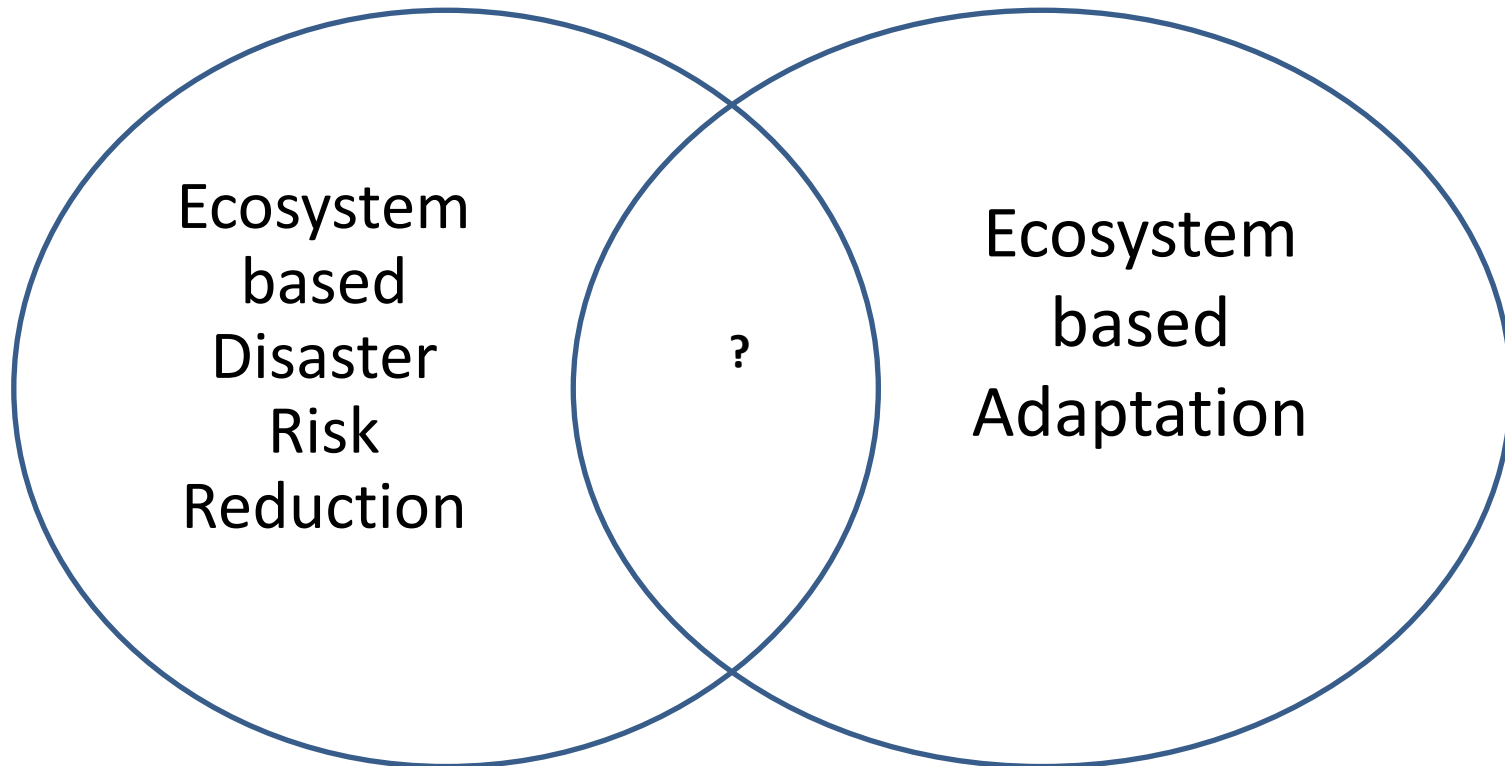


Disasters and Climate Change

- Disasters are increasing in magnitude and frequency
- Weather variability brings about new/sudden challenges
- Pre-disaster conditions determine extent of impact and these conditions are affected by climate change effects



Maximising Impact, Today and Tomorrow





Why Integrated Approaches for DRR and CCA?

DRR

continues to be reactive

preparedness continues to focus on preparing for the looming disaster NOT on reducing risks, including underlying risks

Response and recovery do NOT focus on building back better

Slow onset hazards are often overlooked/under-resourced

CCA

proactively focuses on future

CCA focuses on reducing longer term underlying risks to cope with future changes

Principles of climate resilient development and planning can facilitate building back better

Provides an opportunity to reduce the risks of slow onset hazards



Why Integrated Approaches for DRR and CCA?

DRR

Focuses on hazard management

DRR provides a concrete entry point, despite uncertainties surrounding CC

These mechanisms exist in DRR, much to learn from

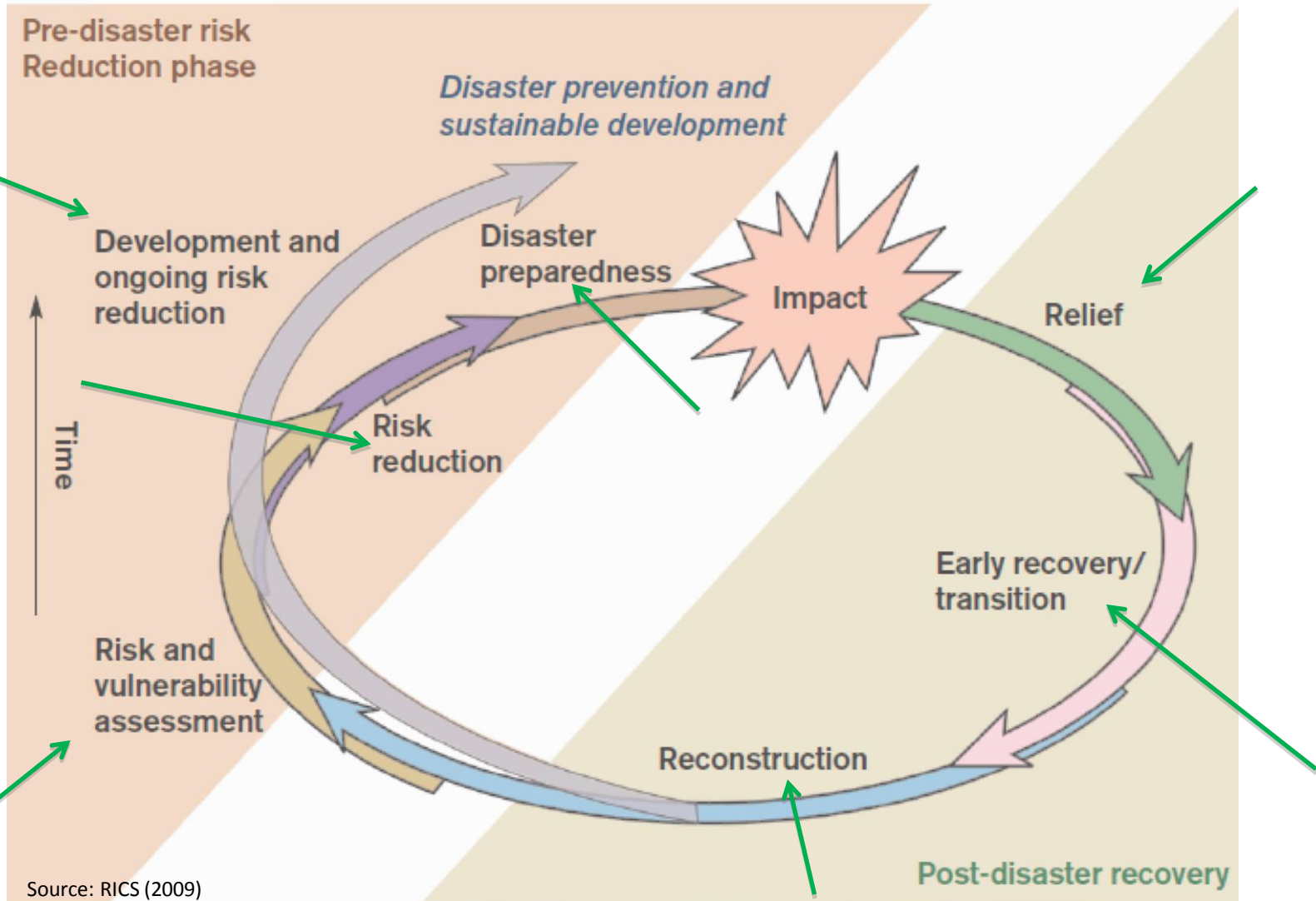
CCA

Does not take into account immediate and short term hazards

May find it challenging to convince key stakeholders to invest in CCA

Establishing local to global policy, practice and funding mechanisms

Entry points for Ecosystem based DRR





IUCN Tools and Approaches for Eco-DRR

DRR cycle phase	The role of ecosystems	Tools employed by ecosystem managers that can contribute to DRR
Risk & Vulnerability assessment	<p>Risk & Vulnerability assessment methods can:</p> <ul style="list-style-type: none">• help identify people’s exposure to potential natural hazards;• identify the root causes of the hazard and whether they are related to Environmental Management;• Consider environmental dimensions or drivers of vulnerability: Extent, quality and/or usage of natural resources and ecosystems;• Assess risk of ecosystem collapse.• Quantify the role of ecosystems for mitigation.	<p>Qualitative (Participatory process):</p> <ul style="list-style-type: none">• CREATE;• CRiSTAL;• CARE’s Community Vulnerability Capacity Assessments (CVCA)• UNDP Vulnerability Assessment Guidance; <p>Quantitative:</p> <ul style="list-style-type: none">• IUCN Redlist of Ecosystems;• UNEP RiVAMP - quantifying the role of ecosystems for mitigating impacts



Climate Resilience Evaluation for Adaptation Through Empowerment (CREATE)

- Starting point for Eco-DRR initiatives
- Social vulnerability assessment process, qualitative
- Integrates common VCA methods (CARE, UNDP, CEDRA) with adaptive capacity assessments
- Facilitates solution finding by communities according to the adaptive capacities
- Prioritises *local innovation* – technological, knowledge, traditional practice to respond to risks and CC impacts

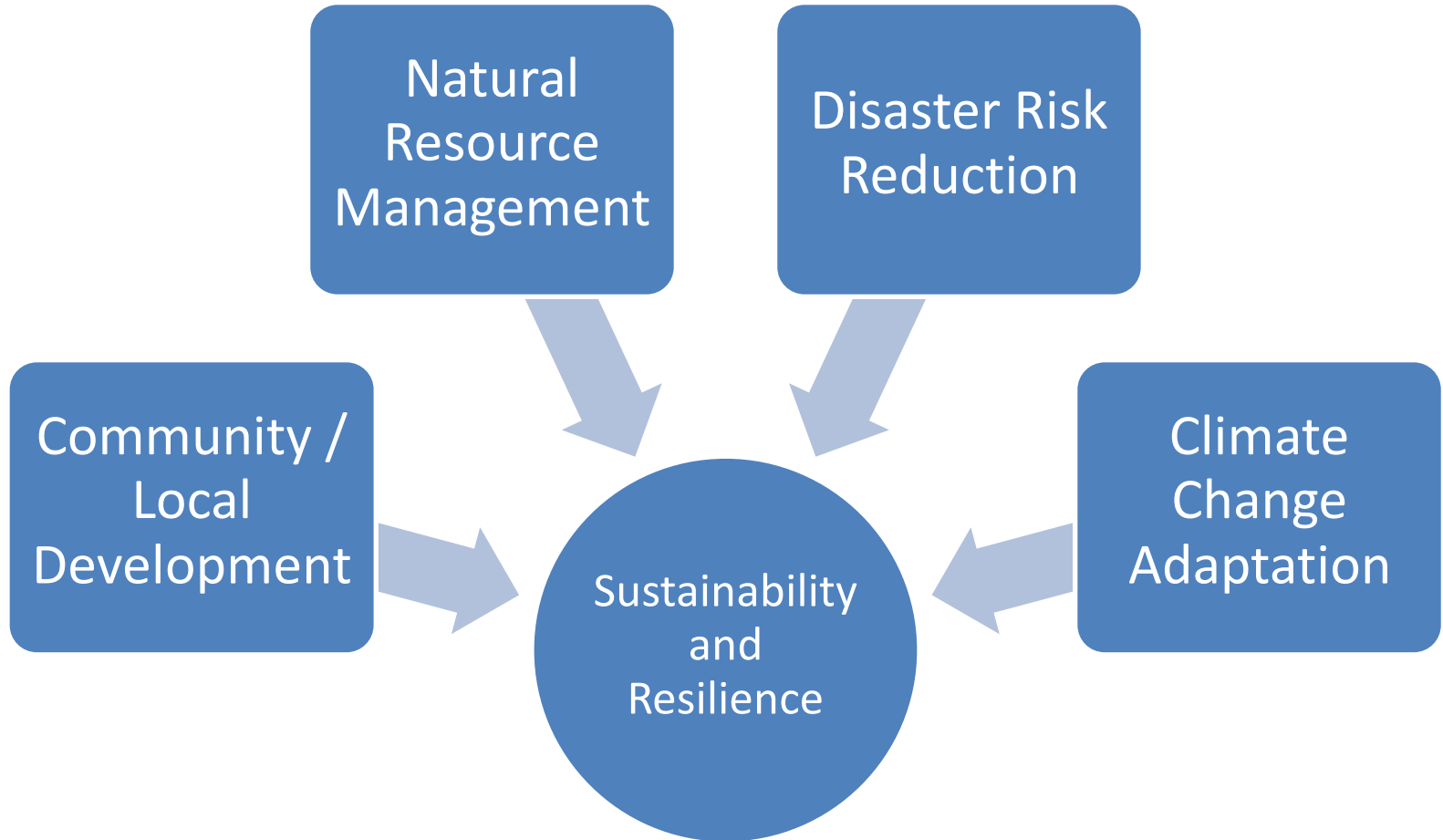


Stakeholder groups

community	<ul style="list-style-type: none">• equal representation of men and women• representative number of elderly for focused group on elderly (historic mapping of climatic changes)• representation of youth/young community leaders (potential)
government	<ul style="list-style-type: none">• Local extension officers who work with the community in the long term• Teachers from local school, healthcare professionals
Non-Government	<ul style="list-style-type: none">• Local NGO with long term presence and work in the community• Religious/respected leaders of faith • Existing women's club, youth group, farmer association, etc., - formal or informally recognised
Private sector	<ul style="list-style-type: none">• Local small holder businesses – tourism, livelihoods, etc.,• National or multi-national companies working on infrastructure development, mining, fisheries, etc.,• Community based cooperative businesses

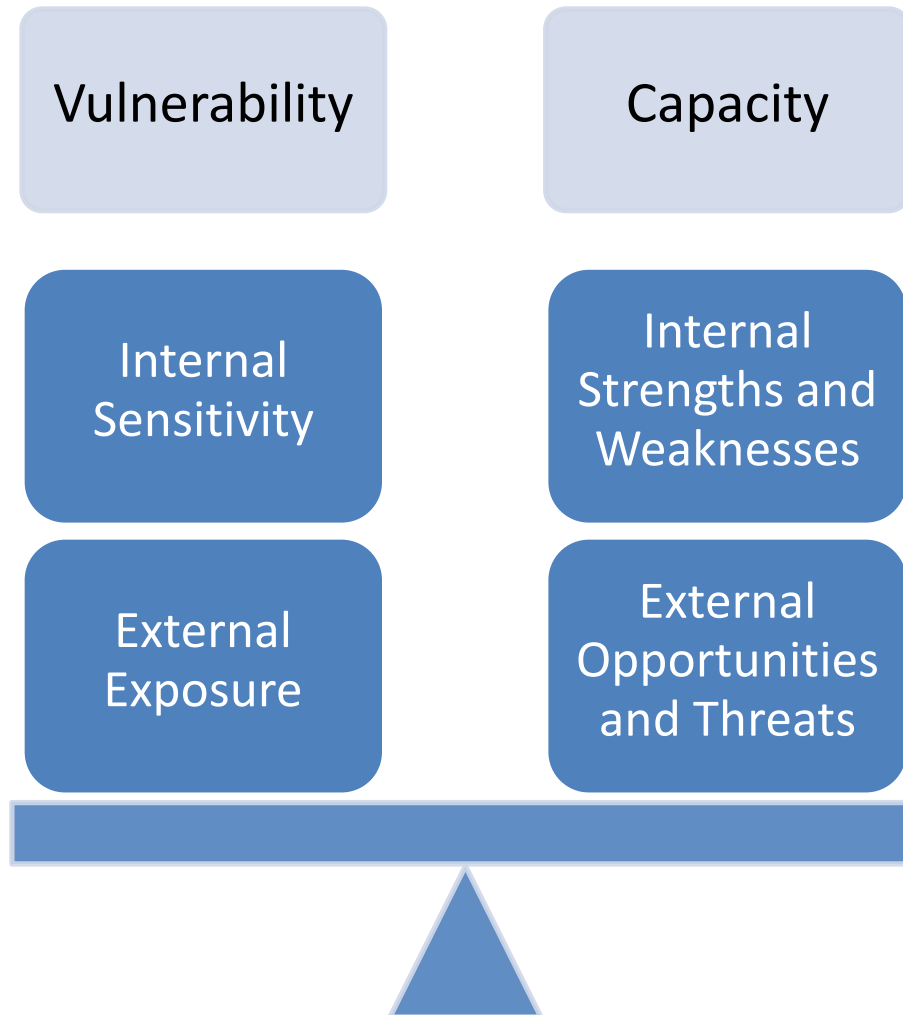


Sustainability and Resilience





Vulnerability and Capacity





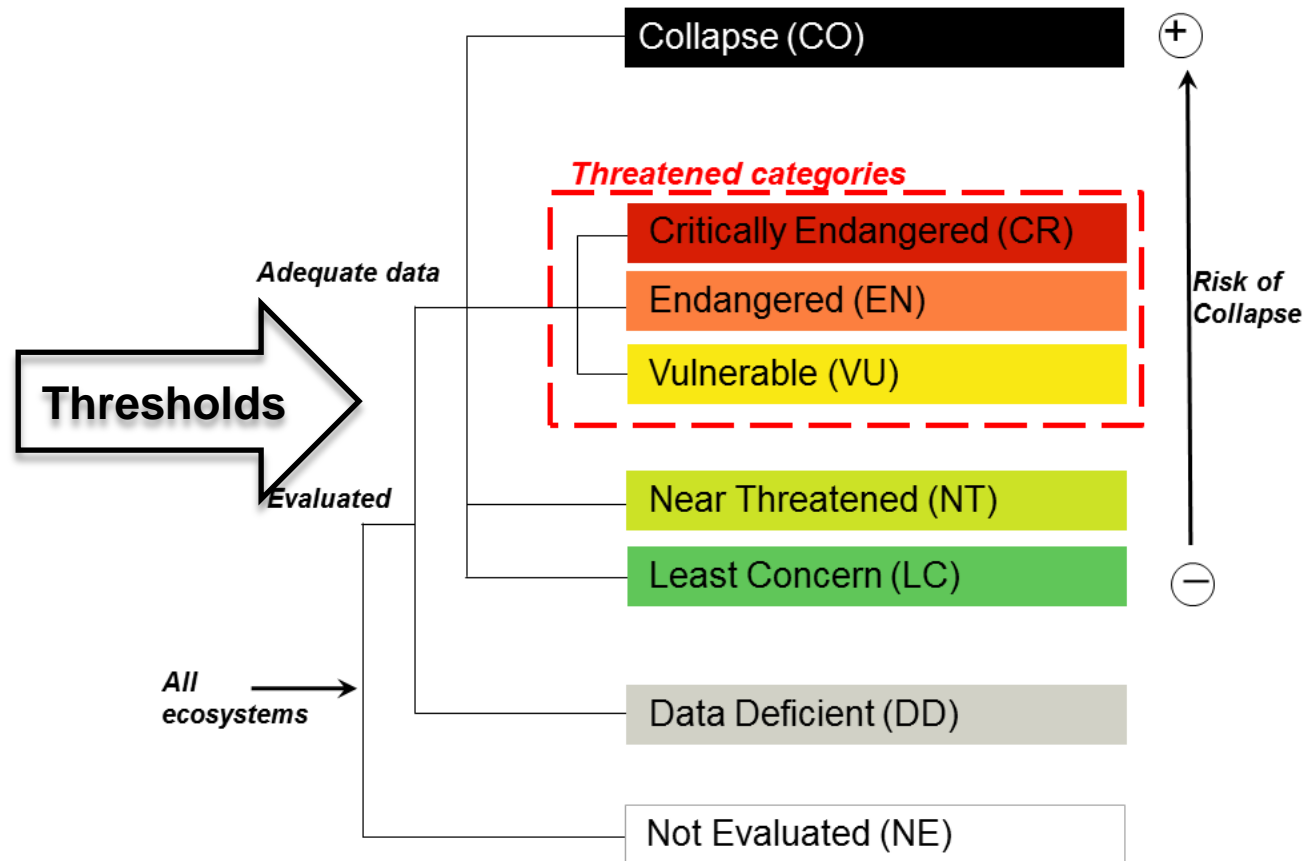
IUCN Redlist of Ecosystems

- **Need for an integrated risk assessment tool to:**
 - **Complement information about risks to species**
 - **Strengthen conservation messages & action**
 - **Show that ecosystem loss & degradation can precede species loss (e.g. *extinction debt*)**
- **Addresses ecological processes (implications for ecosystem services to humans)**
- **Addresses dependencies & interactions among species & ecosystems**
- **Tool to promote conservation & land/water action**

Criteria

- A. Declining distribution
- B. Restricted distribution
- C. Degradation of abiotic environment
- D. Altered biotic processes & interactions
- E. Quantitative risk analysis

Categories





“Risk Assessment” Potential for Application, Use & Integration

1. Climate change adaptation
2. Disaster Risk Reduction
3. Impacts of land use change (e.g. conversion, degradation) on e.g. food security, sustainable resource management at different scales
4. Invasive species management
5. Integrated conservation data for decision-making (RLTS, PAs, KBAs)
6. Tool to engage with finance & planning – monitoring interventions (repeat RLE – Climate change, Aichi, SDGs, PA Management) & development planning
7. Systematic assessment of ecosystem/social interface → more comprehensive picture of drivers/dynamics



Tools and Approaches for Eco-DRR

Disaster Risk Reduction and preparedness

- Vegetation for stabilizing slopes;
 - Wetlands & floodplains to control floods;
 - Mosaic landscape for fire management;
 - Vegetation management for drought resilience;
 - Mangroves, saltmarshes and sand dunes as buffers from i.e. storm surges;
 - Provide climate change mitigation.
- Integrated Coastal Zone Management;
 - **Integrated Water Resource Management (IWRM);**
 - Integrated Fire Management;
 - **Protected Area Management;**
 - Community-based Natural Resource Management



Integrated Water Resource Management for DRR

Integrated Water Resource Management –

A process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems¹

Disaster Risk Reduction (HFA) –

The substantial reduction of disaster losses in lives and in the social, economic and environmental assets of communities and countries²



Integrated Water Resource Management for DRR

Pillars of IWRM		Strategic Goals of HFA			
Enabling Environment	Institutional Framework	Management Instruments	Integration of disaster risk into sustainable development policies and planning	Development and strengthening of institutions, mechanisms, and capacities to build resilience to hazards	Incorporation of risk reduction approaches into implementation of emergency preparedness, response, and recovery programs

Utilizing Integrated Water Resource Management Approaches to Support Disaster Risk Reduction

James Dalton, Radhika Murti, Alvin Chandra (2013)



Integrated Water Resource Management for DRR





Protected Area Management for DRR

- Designation of green areas that may be seen as development prospects
- Integration of DRR into current PA management system
- Extending existing PAs to cover highly vulnerable areas

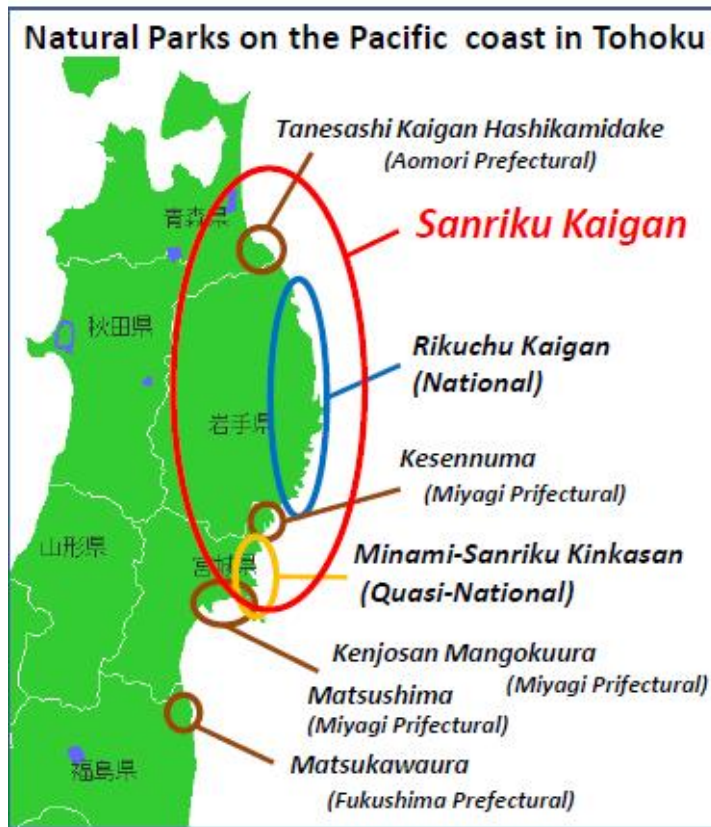


Protected Area Management for DRR

Haiti – First country to designate a Marine Protected Area for Disaster Risk Reduction, recognising its multiple benefits such as biodiversity recovery and livelihood security (2014)

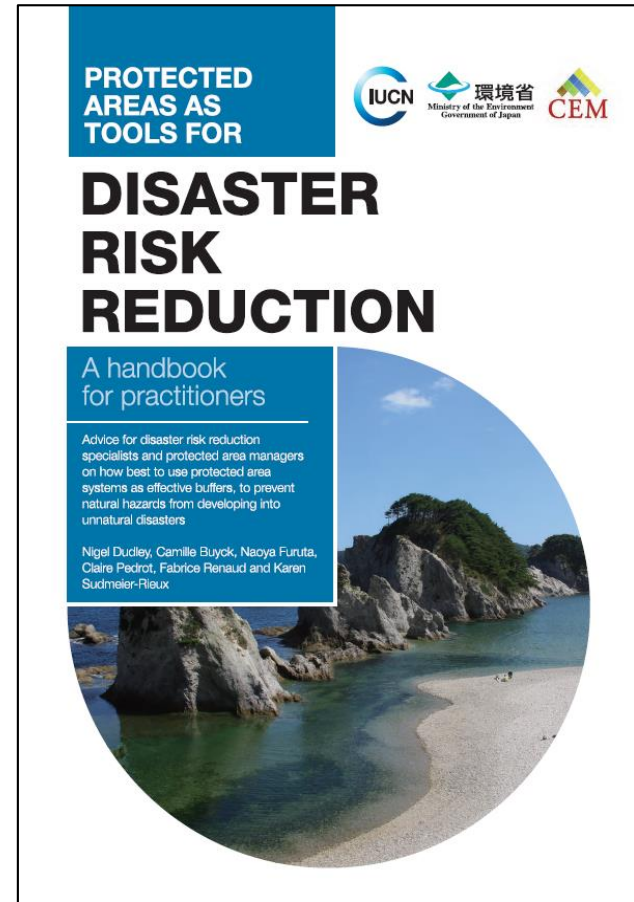
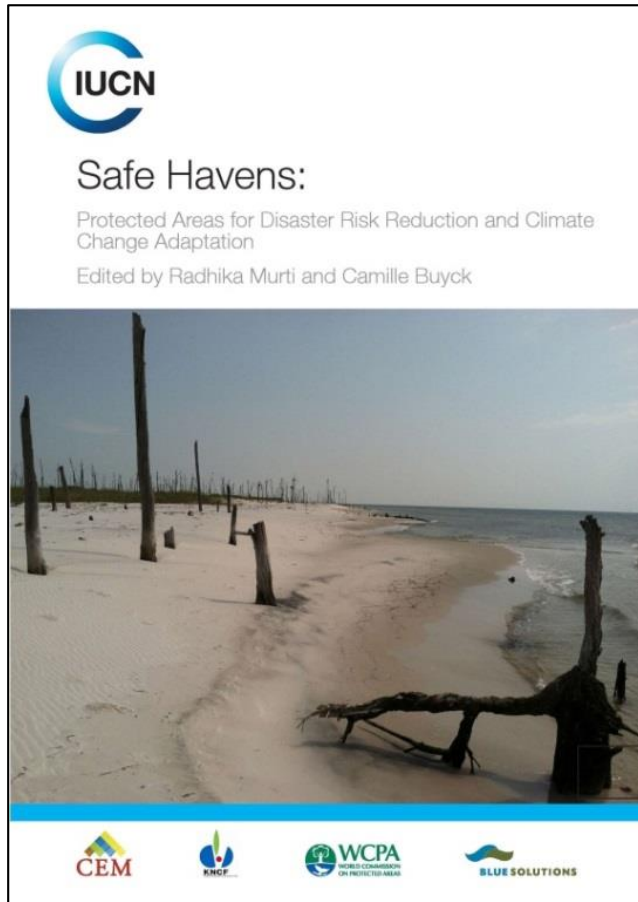


Japan - Sanriku Reconstruction National Park





Protected Area Management for DRR





Keeping in Touch

- Build a network of champions, people willing and committed to change business as usual
- collaborations, joint trainings, implementation opportunities, joint voices at key events
- Learning together





Keeping in Touch

- Group mailing list for this workshop
- PEDRR – Meso/Central America, Caribbean
- Global PEDRR network – Facebook, Twitter

Weekly News Alert

Issue 169 – Month July 18 – 22, 2016

Newsletter on ecosystems-based risk reduction and climate change adaptation





We MUST Reduce Our Risks!

