



Mangroves for the Future
INVESTING IN COASTAL ECOSYSTEMS

DISASTER RISK REDUCTION

CONCEPTS AND MEASURES

Session 3

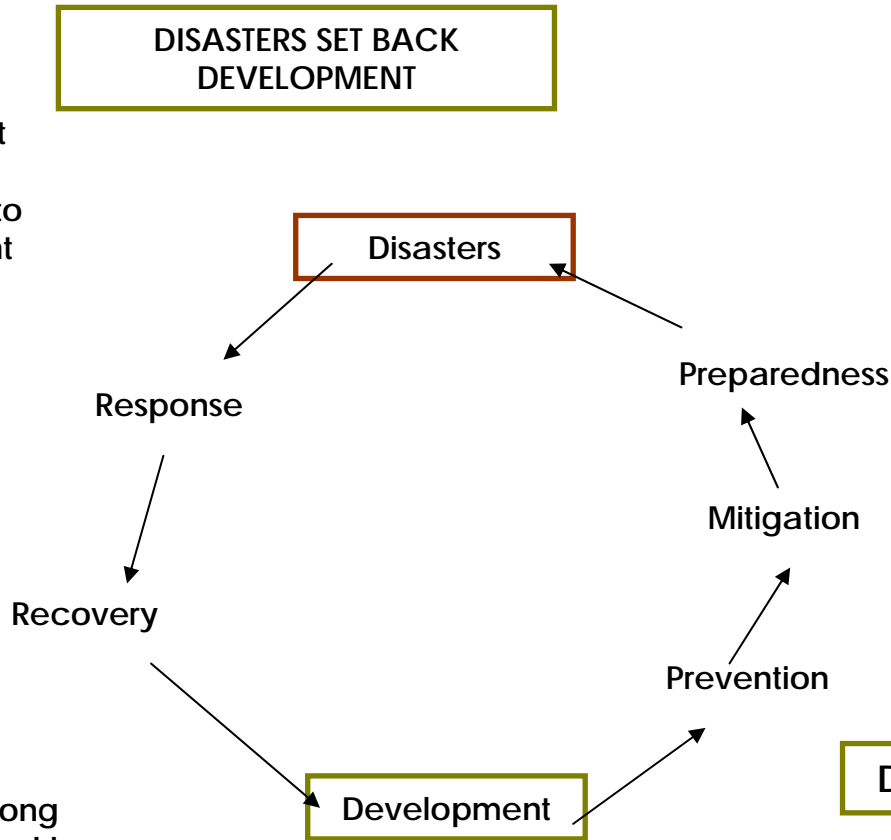
Training Module on Climate Change considerations in the coastal zone and Disaster Risk Reduction

MFF Regional Training Course
Semarang, Indonesia
27-31 October, 2008



DISASTER RISK REDUCTION

“In Vietnam it is estimated that a further 4-5 per cent of the population could be pushed into poverty in the event of a disaster”
(Source: ADB)



THUS DISASTERS ARE UNRESOLVED PROBLEM OF DEVELOPMENT AND THERE IS A NEED TO INTEGRATE MEASURES INTO DEVELOPMENT WHICH WOULD REDUCE RISK OF DISASTERS

DISASTER RISK REDUCTION... IT PAYS

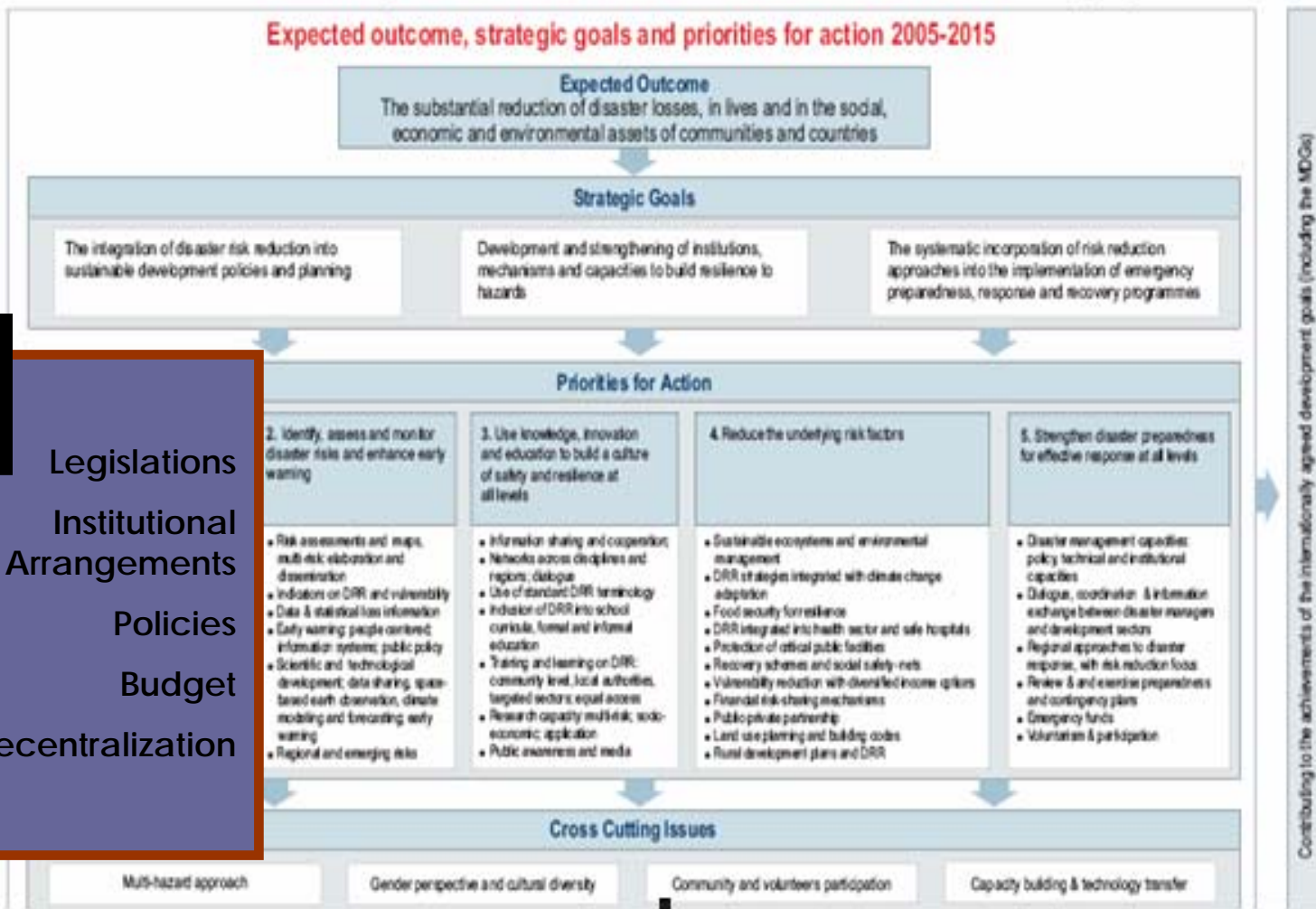
“Flooding in Mekong Delta, is often caused by reduced drainage due to expansion of agricultural activities into wetland areas that previously served an important drainage function”.

“Planning and protection of 12,000 hectares of mangroves in Vietnam has cost around US \$ 1.1 million, but reduced the cost of dyke maintenance by US \$ 7.3 million a year. Also helped save lives, protect livelihoods and generate livelihood opportunities”

(Source: IFRC)

MEASURES for Disaster Risk Reduction

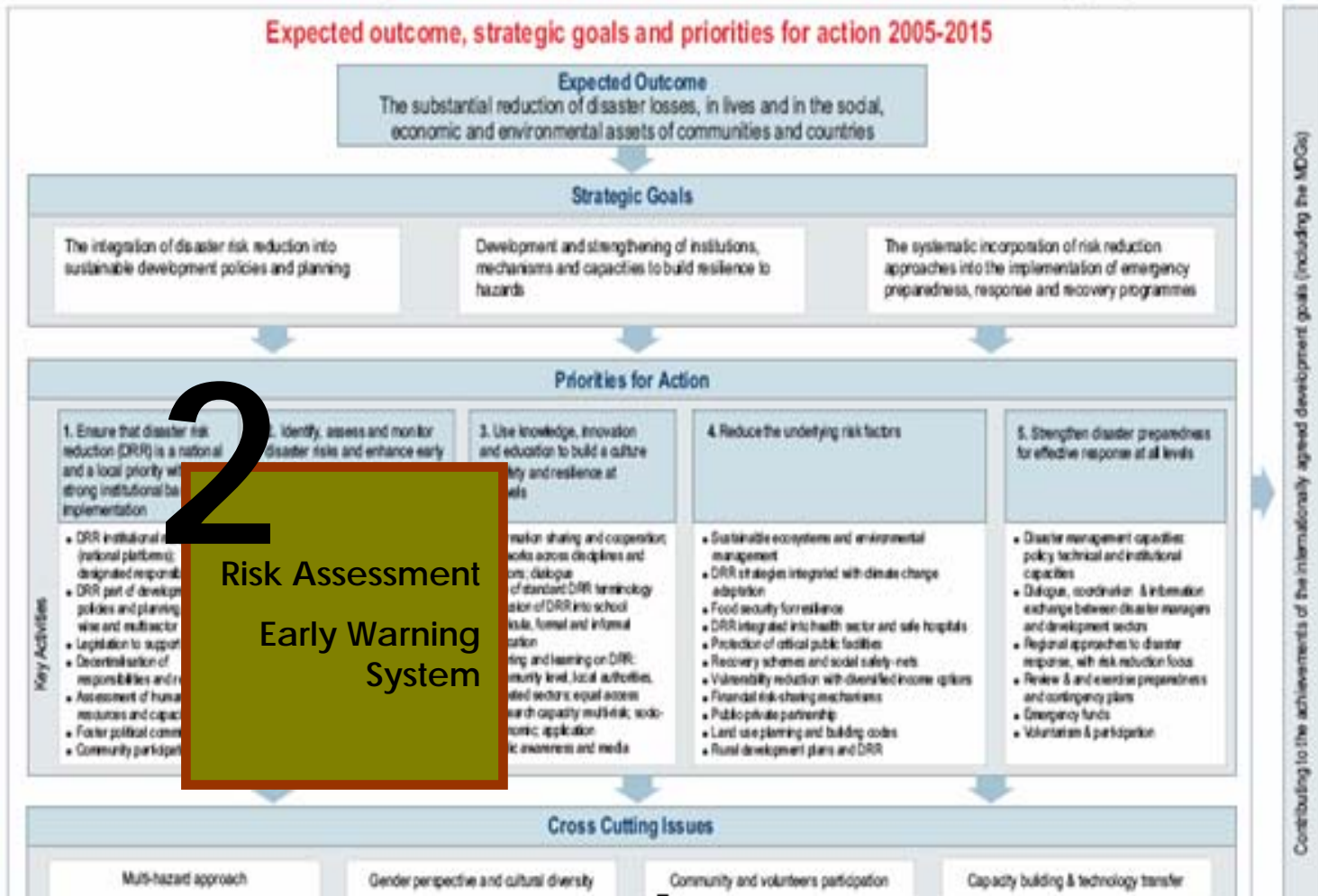
Ensure that DRR is a national and a local priority with a strong institutional basis for implementation; HFA Priority for Action 1



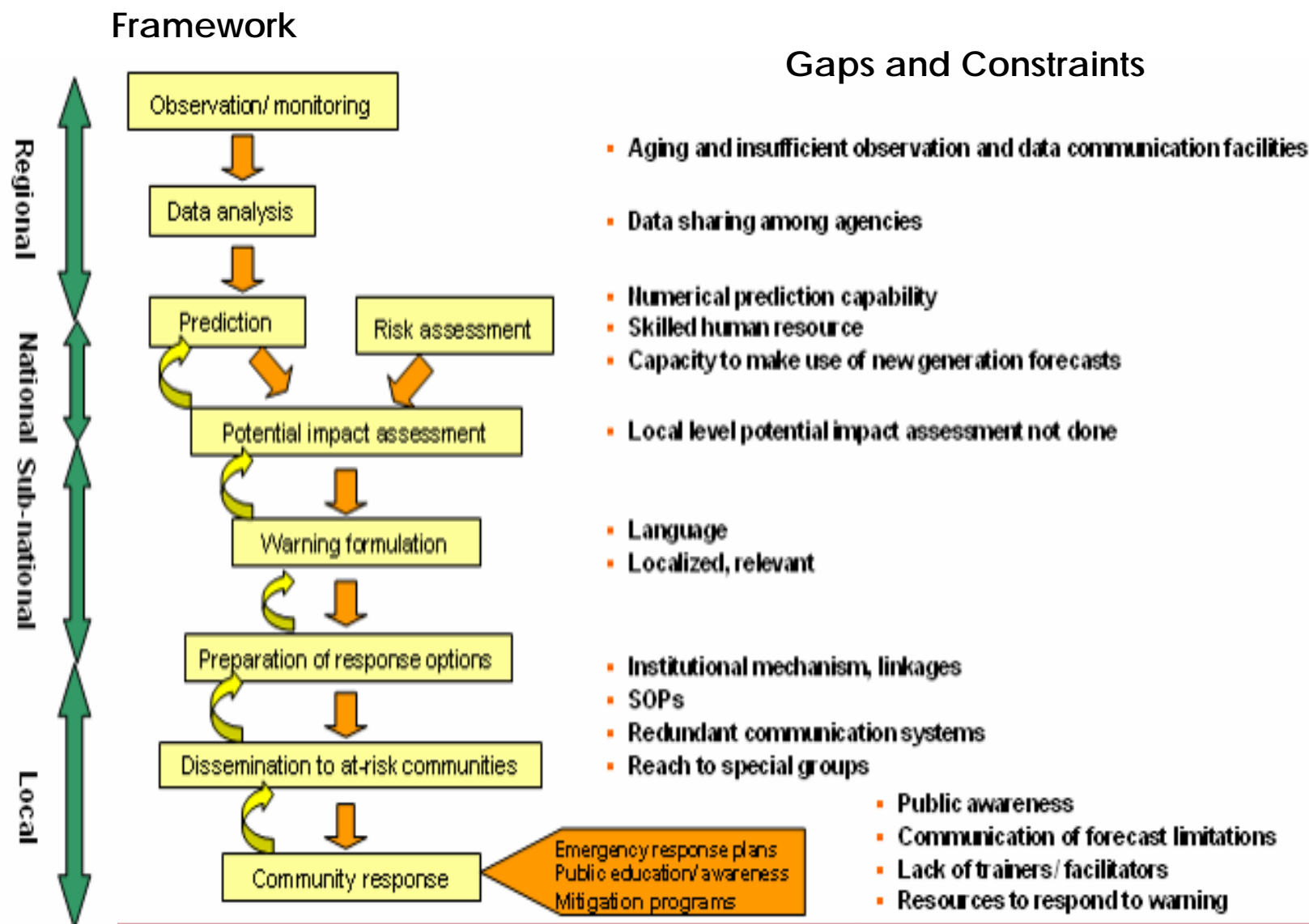
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Legislations
Institutional Arrangements
Policies
Budget
Decentralization

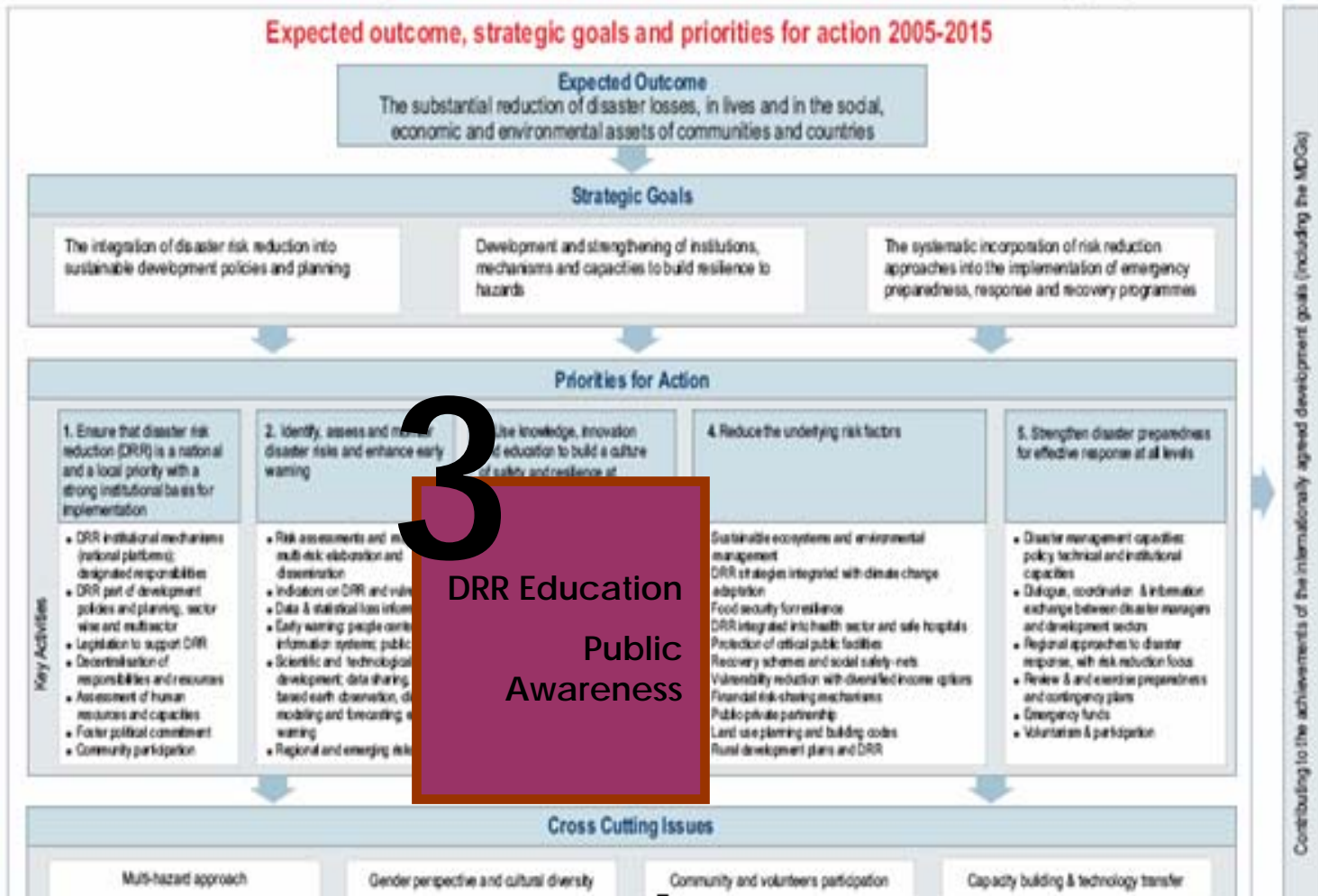
Identify, assess and monitor disaster risk and enhance early warning: HFA Priority for Action 2



End to End Early Warning Systems



Use knowledge, innovation and education to build a culture of safety and resilience of all levels; HFA Priority for Action 3



Public Awareness for DRR

- Need for **Information on disasters** to be available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)
- **School curricula**, education material and relevant trainings to include disaster risk reduction and recovery concepts and practices.
- **Research methods** and tools for multi-risk assessments and cost benefit analysis.
- Need for **Countrywide public awareness strategy** to stimulate a culture of disaster resilience, with outreach to urban and rural communities

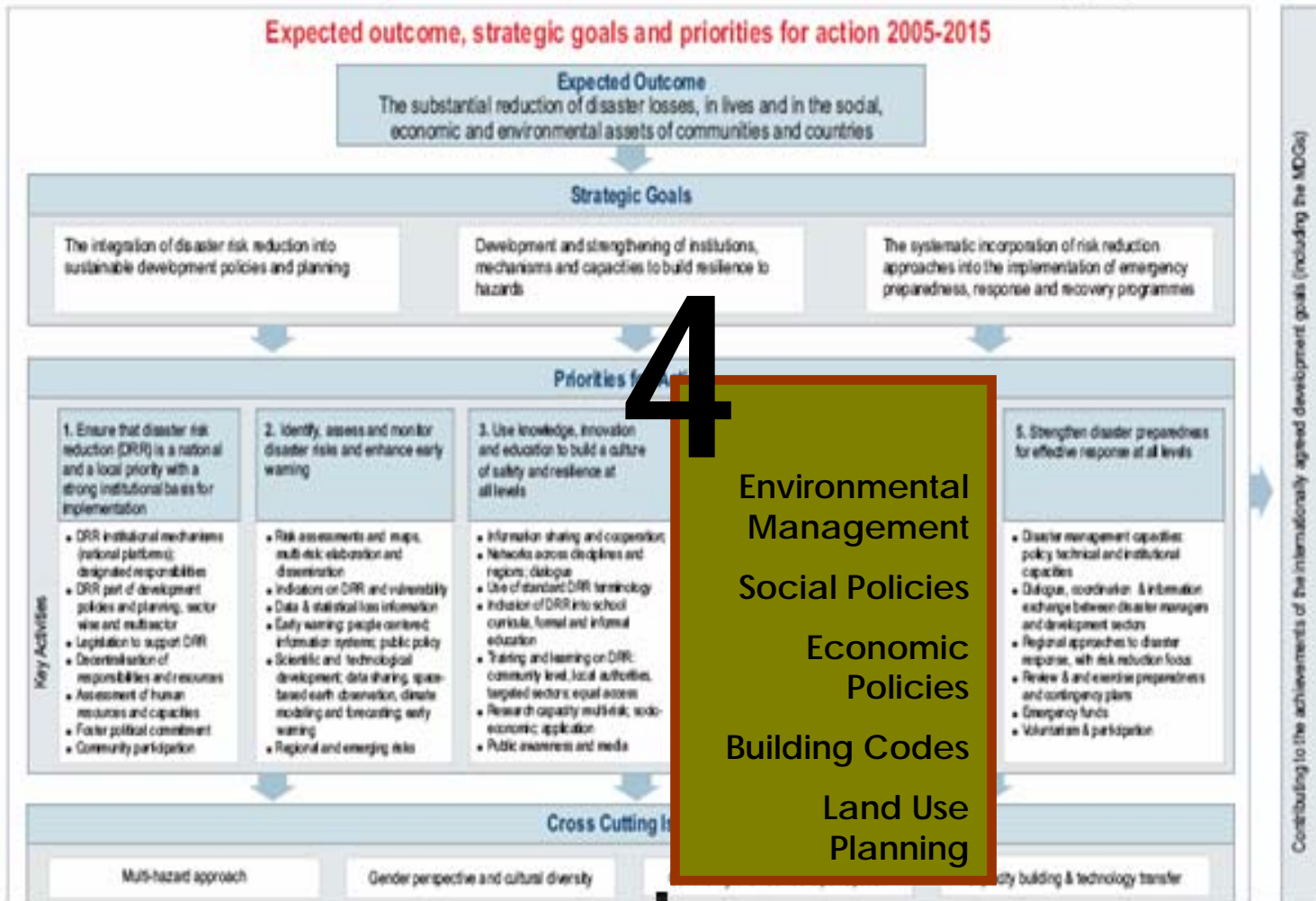


Example: Public Awareness on Earthquake Safety, Nepal



Example: Earthquake Safety in School Curriculum, Indonesia

Reduce the underlying risk factors; HFA Priority for Action 4



Example; Jamuna Char Integrated Development Project, Bangladesh

- Objective To counter the threat of floods and river erosion
- Char – Landmasses formed and destroyed by floods and change in course of river, but very fertile soil, so people move to farm despite high vulnerability
- Promotion of planting reeds known as CATKINS- this collects sediments swept down by the river, thus adding to the land and protect riverbanks
- CATKIN stems also used for fuel, roofing, to make fence, leaves act as food for domestic animals
- Improve soil and restore land for other crop cultivation



Example; Earthquake Risk Reduction in Education Sector, Indonesia

Creating Earthquake Preparedness in Schools, Bengkulu, Indonesia

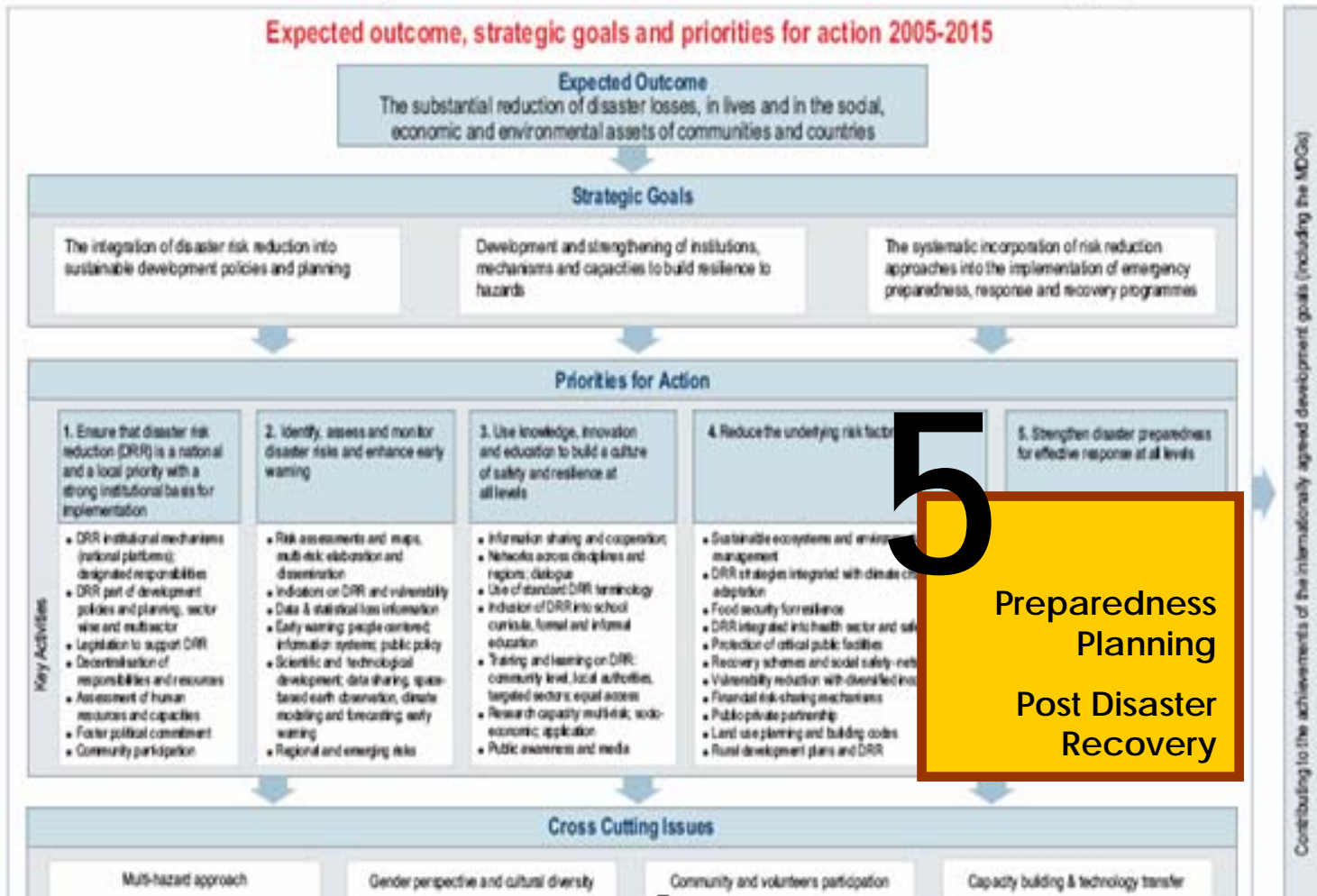
- Technical guidance to **retrofit school buildings in a cost-effective manner**.
- Design and implementation of earthquake resistant school building construction and retrofitting for post-earthquake reconstruction programs
- **Training of engineers and local government officials** on earthquake resistant school buildings
- **Training of local contractors** and craftsmen on construction of earthquake resistant buildings
- Implementation of earthquake safety drills in classrooms.

Creating Earthquake Preparedness in Schools, Bandung, Indonesia

- Basic intensity **zoning mapping and risk assessment**
- **Campaign on earthquake awareness and preparedness** for school children
- **Training for school teachers** on earthquake preparedness programming for school children (TOT)
- Dissemination of **information on earthquake preparedness** for school children and adults in the form of leaflets, simple manuals, and posters



HFA Priority for Action 5: Strengthen disaster preparedness for effective response at all levels



Example; Bangladesh Cyclone Preparedness Programme

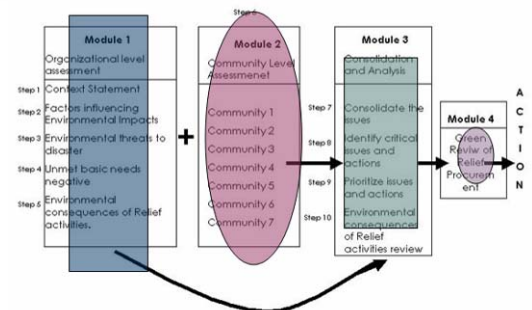
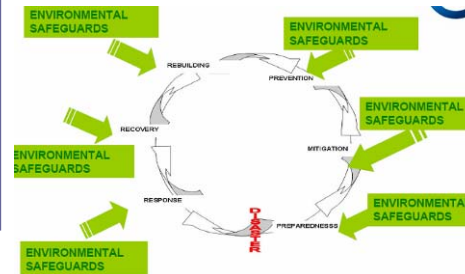
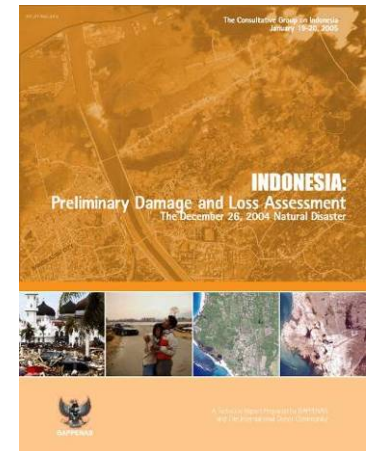
- Initiative of the **Government of Bangladesh and Bangladesh Red Crescent Society** after 1970 cyclone
- Issues **warnings, buildings and operating shelters** assisting with evacuation, **search and rescue, first aid, relief and rehabilitation,** and **building up community preparedness capacity**
- **Backbone of the program is a cadre of volunteers,** men and women. They are equipped with radios to monitor weather bulletins, megaphones and hand operated sirens, first aid kits, rescue equipments and protective clothing.
- In the period between cyclones, **volunteers are trained by permanent Red Crescent Staff.** Also organise regular rehearsals and demonstrations in villages
- The village volunteer groups are linked to each other and to Red Crescent offices at field and higher levels through a network of radio stations.



DRR in Post Disaster Recovery

Example: Sustainable wood supplies for reconstruction in Aceh after 2004 Tsunami; Innovative approaches for Recovery

- Tsunami Reconstruction demanded timber; 4-8 million cubic metres of logs;
- Would result in logging between 125,000 and 250,000 hectares of forest;
- Legal and sustainably harvested logs from within Indonesia were insufficient to meet this timber demand;
- Would have resulted in natural areas close to the tsunami impacted zone vulnerable;
- Gunung Leuser Ecosystem- major critical habitat for Sumatran Orangutans, tigers, elephants, rhinoceros, already under pressure from illegal logging would worsen;
- Have to adopt innovative approaches for recovery as proposed by WWF Indonesia and Greenomics such as 'in kind' contribution of sustainably sourced timber by donor governments as part of their aid program.

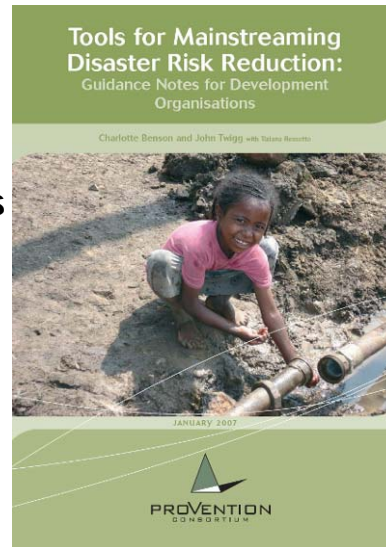


TOOLS for Disaster Risk Reduction

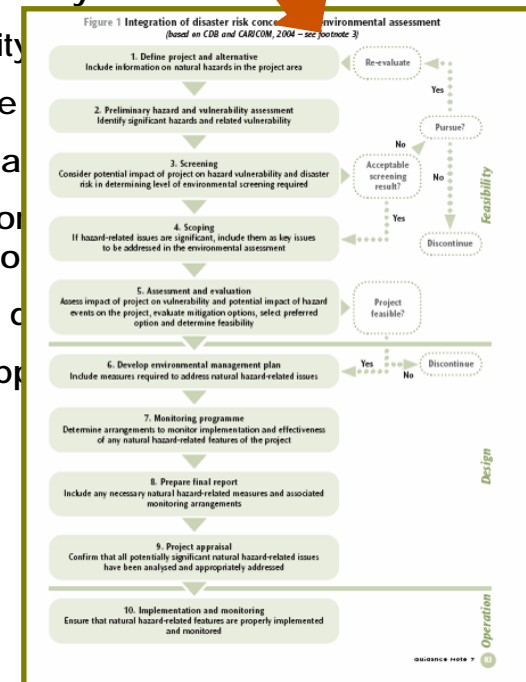
Example; Tools for Mainstreaming Disaster Risk Reduction

Guidance Notes Principles

- Short, practical briefs supplementing existing guidelines
- Focus - **where and how to take hazard-related concerns** into account in each of the tools covered
- Primary audience - **development organisations**
- May need adjusting to dovetail individual organisations' procedures.
- Also of relevance to the **mainstreaming of adaptation to climate change into development.**

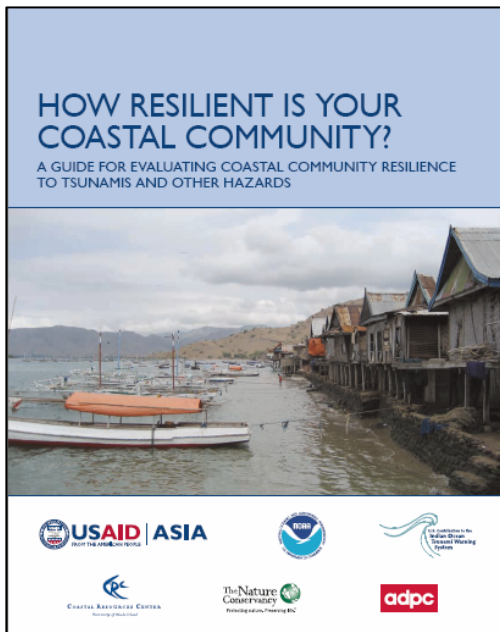


1. Introduction
2. Collecting and using information on natural hazards
3. Poverty reduction strategies
4. Country programming
5. Project cycle management
6. Logical and results based frameworks
7. **Environmental assessment**
8. Economic analysis
9. Vulnerability
10. Sustainable
11. Social impact
12. Construction site selection
13. Evaluating
14. Budget supp



For more DRR related Tools look at www.proventionconsortium.org

Example; Guide for Evaluating Coastal Community Resilience to Tsunami and other Hazards



Guide Intended to be used for:

- Serve as a **framework to highlight strengths and identify weaknesses and gaps in resilience** that can be addressed by multi stakeholder partnership.
- To **complement other planning tools** and approaches.
- To serve as a **rapid assessment approach** conducted as a collaborative and participatory undertaking to enhance resilience at local and national levels.
- Provide **input to the design of single sector development projects** that must be integrated whenever possible, with other ongoing development projects in an area.
- Assist in **coordination among field programs that have similar and possibly overlapping objectives.**



Value of CCR Approach described in this Guide

- Provides a **framework to integrate the goals of community development, coastal management and disaster management**
- Promote a proactive approach to both chronic and episodic hazards rather than a reactive focus on response to disaster events
- Utilizes a broad assessment of community capacity and vulnerability to tsunami and other coastal hazards
- **Merges goals of environment sustainability and humanitarian assistance**

APPROACHES for Disaster Risk Reduction

Tools



Purpose

- Serve as Benchmarks for the sector
- Guidelines for Project Design & Planning
- Indicators for Project Evaluation & Impact Assessment
- Basis for Advocacy & Policy formulation
- Materials for staff orientation/training



Document 1 Guidance Notes on CBDRR for Flood and Drought

Chapter 1- Disaster and Vulnerability in Cambodia, lessons from community based disaster risk reduction (CBDRR) approaches, w.r.t. floods and drought

Chapter 2- **Critical Guidelines** for Community Based Disaster Risk Reduction: Principles, Processes and Desired Outcomes

Chapter 3- **Menu** of community based preparedness and mitigation **interventions** in CBDRR for floods and drought

Chapter 4 - **Integrating Gender** sensitivity in DRR initiatives

Chapter 5- **Addressing special needs**; utilizing special capacities of all vulnerable groups

Chapter 6- Strengthening and expanding National Forecasting system for flood and drought and effective dissemination of early warning

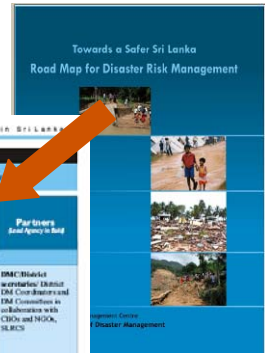
Chapter 7 - **Mainstreaming CBDRR** and Promoting community resilience in **Community development**

Chapter 8- **Aligning CBDRR work with National Policies** and Strategies for Development and Disaster Reduction



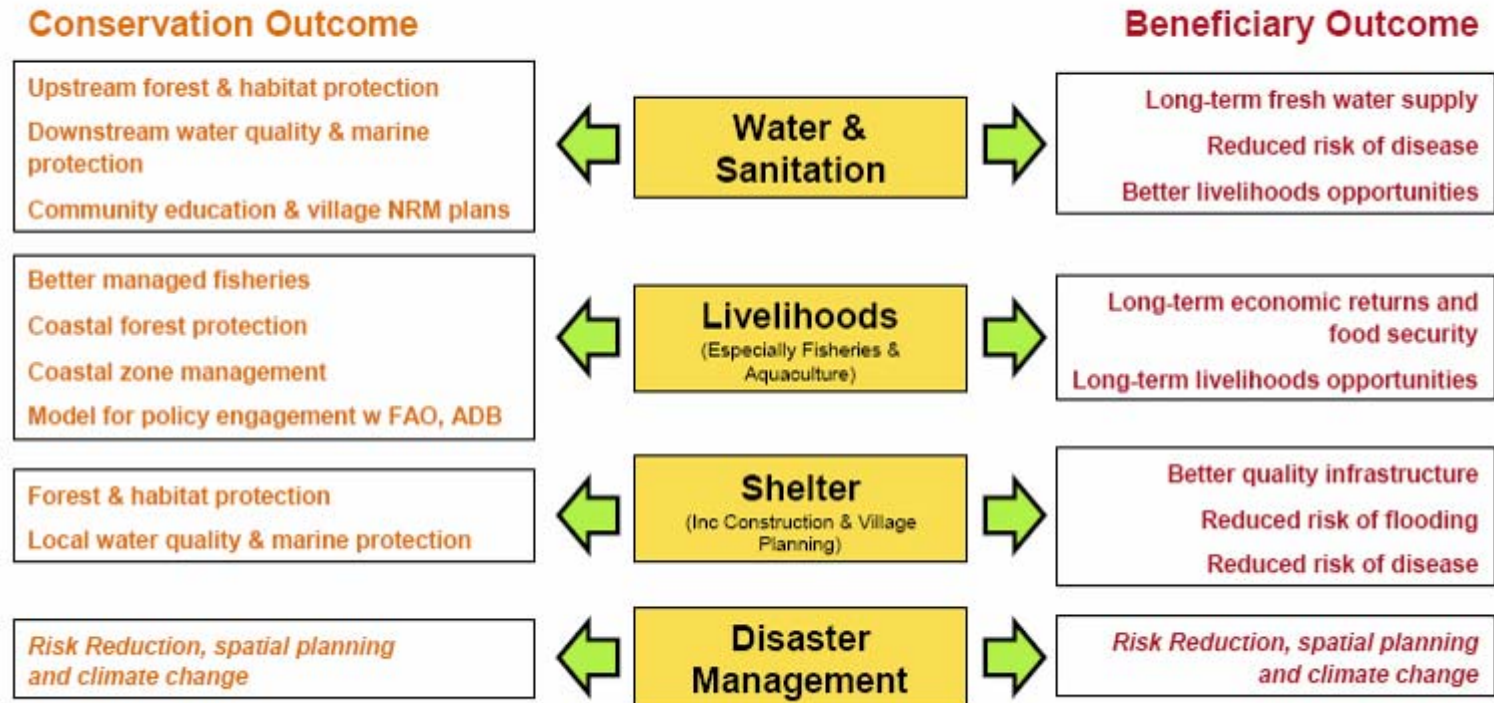
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Road Map



Outcomes	Outputs/Activities	Budget Time frame (Start/End) (\$/€/Laksh)	Partners (Lead/Agency in field)
Component 1: Community Based DRR			
To reduce risk and disaster impacts through participatory approaches at the community level			
1. Promoting CBDRR Vulnerability			
Increased participation of vulnerable and marginalized communities in risk reduction interventions	Output: 1. Promoting community disaster response volunteers and establishing community teams for community-based disaster risk reduction interventions in 100 villages in all district communities. 2. Registration of volunteers and maintenance of database. 3. Volunteer skills, training and motivation.	45.0 (USD) (For 1000 GN)	DMC/Ministry Secretaries/ District DM Coordinators and DM Committees in collaboration with CBAs and NCCA, SERCS
Community DRR teams established in 48 of 100 communities. Volunteering database established and maintained for use in emergency use only.	Activities: - Community DRR teams constituted in each village community to undertake village level activities of FW, preparedness, response and mitigation. Identification and selection of volunteers to serve during disaster events (SAR parties, first aid responders, camp-maintenance, etc.) - Developing Volunteer Facilities/Community building and training for volunteers, Central parks, skills and resources. Link with SERCS. - Establishing revolving fund at community level. - Establishment of database of volunteers at national level, in each district and Census/Midyear survey and local government level. - Provide Ministry/ Cash for better recognition. - Introduce an incentive scheme (reward system) to encourage volunteers.	5.00 (US) (For 500 GN) 1000 (US) (For 1000 GN) 30.00 (L) (For 3000 USD)	
2. Establishing Resource Centres			
Increased access to information on community-based	Output: 1. Establishing CBDRM resource centers in each district.	5.0 (USD)	DMC/ District Secretaries in collaboration with

Partnerships and Network, WWF and American Red Cross



Volunteers in Early Warning Flood Systems in Cambodia

- Since 2003, the Cambodian Red Cross (CRC) started implementation of the **Early Warning Floods System project**.
 - In the project the Red Cross volunteers had a **two-tier role**:
 - Record water levels on village flood markers twice a day. When they rise to warning level it is reported through the Red Cross network to the **Mekong River Commission** which in turn, provided the villages with a **forecast of the next day's water level**. Information is posted on a **daily billboard**. After each wet season, the volunteers also **revise flood maps**, including the **location of safe areas**, so people knew where to evacuate to if necessary.
 - Work with villagers to **raise awareness and train communities** to install and maintain flood markers, billboards and families to establish safe areas for livestock and firewood.
 - The project fed into the **overall monitoring and management** of potentially dangerous waterways in the region. It enabled the **Mekong River Commission and Department of Hydrology and Rural Water Supply (DHRW)** to build a good overview of the situation and provide **better forecasts and warning**.

