



Module 5:  
**POST-DISASTER REHABILITATION AND RECOVERY**

DRAFT



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# Module 5: Post-Disaster Rehabilitation and Recovery

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## I. Brief Description

Post-disaster rehabilitation and recovery encompass support strategies that are geared towards the restoration of human-centered services and infrastructure, as well as the restoration of the physical and ecological integrity of the affected ecosystem. Proper assessments of damage and the determination of appropriate rehabilitation and recovery measures are the best ways to mitigate the effects of climate change-related disasters and enable communities to be better prepared to deal with future climate change-related events.

## II. Objectives

At the end of this module, the participants are expected to:

1. Understand that disaster management should allow for improvement in order to increase the resilience of human and ecological systems.
2. Learn various concepts and guidelines in post-disaster recovery and identify dangerous assumptions that can hamper and dampen rehabilitation efforts.
3. Specify and prioritize appropriate rehabilitation and recovery strategies for various disaster scenarios that will enable human and biological communities to recover and increase their resilience to future climatic change events.

**III. Learning Methodology:** group activity/discussion, lectures, cases

**IV. Materials needed:** DLP, laser pointer, easel sheets, pens

**V. Duration:** 4 hours 25 minutes

## **VI. Content**

### **A. Group Activity (Time Allotment: 1 hour)**

1. Objective: To identify and prioritize specific aspects of disaster-hit communities that need rescue, relief and rehabilitation
2. Materials: large sheets of paper for the table (see below), marking pens
3. Procedure
  - a. Participants will be asked to form discussion groups, preferably according to geographical areas to allow sharing of insights on a shared experience of a climate change-related event. A facilitator and a documenter will be assigned to each group (or chosen from among the members).
  - b. Each group will be asked to identify climate change-related events that they have previously identified during the Vulnerability Assessment session (Module 3) as a discussion point.
  - c. Members should identify various human and ecological aspects that have been affected by the specific disaster.
  - d. After identifying these aspects, they should also assign a priority number/value for each item on the list in terms of rehabilitation and recovery. Specific steps for rehabilitation can also be discussed.
  - e. A sample table is provided below that participants can use as a discussion guide. However, the participants are also free to develop their own way of drawing up their disaster and priority lists. Participants are also encouraged to take into account the various resources they identified in Module 4 when drawing up their tables.

Event	Effect	System Affected	Sectors	Elements	Priority
typhoon	flooding	human	services	electricity	5
				irrigation	3
			infrastructure	road system	4
				buildings/homes	2
	livelihood	farming	1		
	landslide	ecological	landscape	soil	6
			ecosystem	vegetation	7

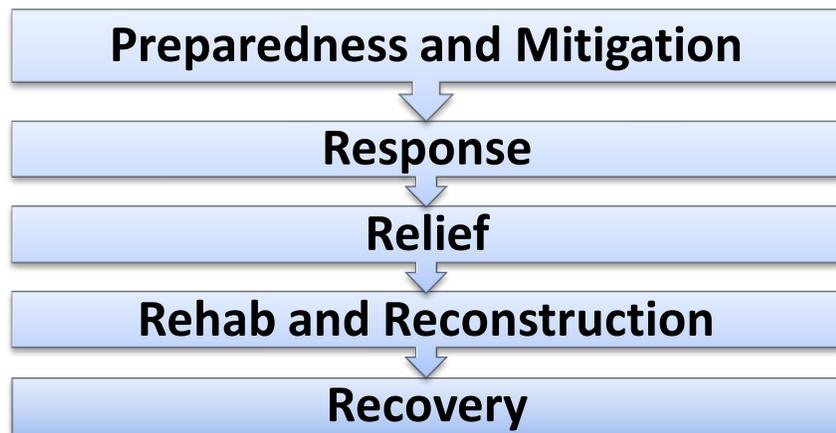
- f. A group member will then be asked to report highlights of their discussion to the entire workshop participants. It is important for each member to briefly discuss the priority numbers they assigned for each element.
- g. The session trainer will end the activity with a synthesis of the reports and transition to the introduction of the topic.
  - i. Draw common criteria from all groups regarding the manner by which they assigned priority numbers.
  - ii. Cite case studies where ecological restoration was among the top priorities (e.g., Banda Aceh, Indonesia after the 1994 tsunami).
  - iii. Highlight the importance of the coordination of efforts in post-disaster activities (i.e., prioritization of efforts vs haphazard relief and recovery)

## B. Lecture

### 1. Session 1: Introduction (Time Allotment: 0.5 hours)

#### a. The Disaster Management Cycle

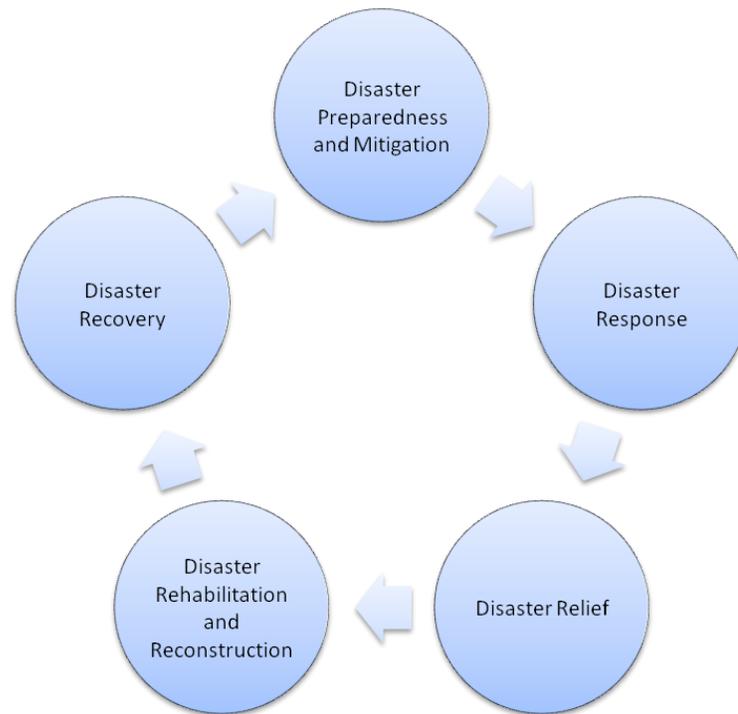
The traditional view of disaster management (Fig. 1) is linear and composed of a phased sequence of actions that does not incorporate the concept of fortifying resilience.



**Figure 1.** Traditional view of disaster management (drawn from Dhameja 2005)

This training, however, highlights the disaster management cycle view (Fig. 2) and stresses the importance of understanding the interrelationships among the five major components of this cycle in order to better appreciate and apply all the principles covered in this training course. The disaster management cycle can be divided into two phases, namely, (1) the pre-disaster risk reduction phase (i.e., Disaster Preparedness and Mitigation) that has been covered by the previous training modules, and (2) the post-disaster recovery phase (i.e., Disaster Response to Disaster Recovery). The cycle allows each step to provide feedback to other steps. Moreover, this view of disaster management provides a built-in learning and improvement aspect at

each step as it provides opportunity for improvement at each cycle. This is the key in increasing resilience in both human and ecological systems.



**Figure 2.** The disaster management cycle (drawn from Dhameja 2005)

b. Nature and Scope of the Disaster

In prioritizing areas for recovery and rehabilitation, several aspects need to be carefully assessed:

i. Nature of disaster

1. Planning for recovery and rehabilitation should relate to the specific damage that results from a disaster.
2. Persons in charge should be able to prioritize inputs and resources in order to assist the rapid recovery of the affected population or ecosystem

ii. Scale of damage

1. A reliable assessment of damage is critical in understanding the type of inputs needed for recovery and rehabilitation

2. One way to quickly assess damage is to determine the ratio of what is lost or damaged to what has survived.
- iii. Location of event
    1. Programs for restoration are context-specific. Sectors that are vulnerable to the same type of disaster vary from one area to another.
    2. A typhoon affecting different locations (e.g., coastal, lowland and upland communities) can have very different effects (e.g., storm surges, flooding, landslides)
  - iv. Sectors affected: sectors that need rehabilitation and reconstruction should relate to the disaster type and the elements that are at risk
  - v. Losses: tangible (direct) losses vs intangible (incosequential) losses
  - vi. Resulting needs: reliable information should be gathered from affected sectors or communities
  - vii. Available resources
    1. Needs should be balanced with available resources (refer to Module 4)
    2. This aspect will require a strong community leadership who should be able to source out funds, materials, equipment and tools, energy and power, land, human resources, adequate and relevant information, administrative structures and organizations
  - viii. Political commitment
  - ix. Actors involved in recovery, rehabilitation and reconstruction: Wise leaders should seek to mobilize a wide range of actors (e.g., public, private and voluntary sectors)

## **2. Session 2: Stages in post-disaster recovery phase (Time Allotment: 1 hour)**

### **a. Immediate: Response and Relief**

Immediate rescue and relief responses implemented during the initial weeks after the disaster to alleviate human suffering. This is generally undertaken by the local government together with various government and non-government organization. In the Philippines, there is already a mechanism in place for relief operations with participating agencies and sectors.

An immediate response to any disaster is critical in maximizing the number of people, property and resources that could be saved. Where it is appropriate, rescue and relief could be dispatched to achieve this end. After all threats to life and property have been addressed, an informed approach to the drafting of any program for restoration will now be critical in any post-disaster situation. Detailed, comprehensive and accurate assessments of the damage, as well as an understanding of the felt needs of the affected community, can help identify critical areas that need to be prioritized for funding and immediate action.

### **1. Damage Assessments**

Assessments in terms of the extent and monetary value of damages can be carried out with the help of local government offices (e.g., municipal engineering office, municipal agricultural office, etc.), field surveys and interviews.

- a. Effects on Basic Services: electricity, water supply (potable water and irrigation water), sanitation
- b. Infrastructure: buildings, hospital/clinics, homes, road systems
- c. Livelihood: crops, sources of food/products
- d. Landscape: soil stability, extent of coastline and land erosion
- e. Ecological Communities: vegetation, terrestrial and aquatic life, forest cover

## **2. Components**

- a. Rescue of affected people
- b. Distribution of basic supplies such as food, water, clothing, shelter, medical care and minimum household utility goods
- c. Repair and restoration of roads, electricity and communication networks
- d. Salvaging damage to agriculture, distribution of seeds and fertilizer, etc.

### **b. Short term: Recovery and Rehabilitation**

#### **1. 'Build Back Better' Principle**

Recovery and rehabilitation is carried out weeks and months after the disaster. It involves the restoration of basic services (e.g., communications, commuter transportation, electricity for homes), infrastructure (e.g., roads and bridges, schools), and livelihood. The goal of this phase is not only to restore what existed previously but also to set communities on a better and safer development path and to facilitate **resilient** recovery.

#### **2. Community-Based Needs Assessments**

In order to come up with a proper and acceptable program for recovery and rehabilitation, it is also important to understand the felt needs of affected communities. Consulting affected populations through interviews prior to any recovery program ensures public acceptance and support of any planned endeavour. A needs assessment helps prioritize particular areas that need the most immediate action for rehabilitation.

- a. Infrastructure and Services
- b. Community Livelihood
- c. Priorities for Habitat Restoration

### **c. Long Term: Reconstruction and Development**

Measures to rehabilitate human communities and natural ecosystems are critical in post-disaster situations in order to support human lives and sustain the delivery of ecosystem goods and services such as food, fuel and protection from natural events. A key concept here is **climate-resilient recovery (CRR)** where communities are not only provided with assistance to recover from climatic change events but are also equipped to deal with future disasters better. Reconstruction is a much longer-term activity that will involve permanent rebuilding, improved infrastructure, and recovery with enhanced preparation for the next climate change-related event. It should aim to build a better standard than what existed before ('build back better' principle) and be guided by the ecosystem approach to recovery and rehabilitation.

#### **1. Climate-Resilient Livelihood**

#### **2. Climate-Resilient Infrastructure**

#### **3. Ecological Restoration**

Ecological restoration encompasses intentional human interventions that are aimed to assist the recovery of ecosystems and habitats after disturbance or damage. Recovery is reckoned to have been achieved when the system contains sufficient living (e.g., microbial, animal and plant life) and non-living (e.g., soil, water, air) components that will allow development without further intervention or subsidy (SER 2004). Restoration can promote the preservation of the biodiversity of the ecosystem, conservation of endemic and indigenous species, and the sustainable management of the ecosystem.

#### **4. Incorporation of Indigenous Ideas and Practices**

Traditional and local conceptions (or misconceptions?), technology and practices may either hamper or enhance disaster management efforts. Regardless of their effects, it is important that they should be taken into consideration and respected at all times. And, if beneficial, these might even be useful to be developed further and then integrate in pre- and

post-disaster planning (e.g., traditional stonewalling technique to minimize soil erosion and increase slope integrity).

### **3. Session 3: Case Studies, Application and Additional Considerations (Time Allotment: 1 hour)**

#### **A. Case Studies**

#### **B. Assumptions, Dilemmas and Guiding Principles**

##### 1. Dangerous assumptions

- i. Political support will be maintained throughout the period needed for recovery.
- ii. There will be continuity of funding support throughout.
- iii. There will be synchronization of perceptions, expectations and capacities of the parties involved in rehabilitation and reconstruction processes.
- iv. There will be adequate levels of competency to undertake the required rehabilitation and reconstruction tasks.
- v. Recovery is confined to physical reconstruction and it must precede economic and social recovery.
- vi. Rapid reconstruction is possible without any sacrifice in quality or safety.
- vii. There will be high levels of acceptance and obedience to the codes and controls that the government imposes.
- viii. Effective reconstruction is an isolated process from normal (pre-disaster) planning and building.

##### 2. Dilemmas and alternatives

- i. Rapid damage survey versus accurate technical surveys
- ii. Repairs versus rebuilding
- iii. Safety standards versus rapid reconstruction
- iv. Relocation versus reconstruction on the same site
- v. Participation versus rapid response

- vi. Special organization versus existing organization
- vii. Public versus private investment
- viii. Physical reconstruction versus economic rehabilitation

### 3. Guiding principles

- i. The planning of recovery needs to be broad in scope and fully integrated.
- ii. A balance has to be achieved between the conflicting yet vital processes of reform and conservatism
- iii. Reconstruction should not be delayed to await political, administrative or economic reform.
- iv. Economic recovery should be regarded as a prerequisite for rapid physical recovery.
- v. Reconstruction offers unique opportunities to introduce a range of measures to reduce future risks to persons and property.
- vi. The relocation of entire communities is usually not effective and is rarely feasible.
- vii. Recovery actions can be regarded as a therapeutic process to assist individuals and their communities to rebuild their lives and livelihoods.
- viii. The basis of effective recovery is the availability and maintenance of an adequate flow of cash and credit throughout the entire process of recovery.
- ix. Successful reconstruction is closely linked to the resolution of land ownership problems
- x. To aid recovery it is preferable to maximize the use of local resources.
- xi. Physical recovery is dependent on the development of effective local institutions as well as training and leadership at all levels and in all sectors.
- xii. Political commitment is vital to ensure effective recovery.

**C. Activity: Application (Time Allotment: 0.5 hours)**

A. Objectives:

- a. To be able to contextualize and localize rehabilitation and recovery situations
- b. To identify gaps in knowledge, skills, infrastructure and resources that are needed for rehabilitation and recovery

B. Materials: Guide questions printed on sheets

- a. Of the dangerous assumptions discussed, which in your own experience are the most likely to threaten your recovery/reconstruction plan?
- b. We have listed several operational dilemmas and alternatives which are common in the planning for rehabilitation. Which of these are most important to resolve in your own community? Do you have ideas on how best to address them?

C. Procedure:

- a. Participants will be asked to form small discussion groups (~5 members maximum).
- b. Each participant will be given time to answer each of the questions which will be shared with the group.
- c. At the end of the activity, participants with the most interesting experiences and insights (deemed by group members) will be invited to share these in front.

**D. Synthesis - to be facilitated by session trainer (Time Allotment: 10 mins)**

**E. Evaluation (Time Allotment: 15 mins)**

## VII. FOR FURTHER READING

- Dhameja, A. 2005. Disaster Rehabilitation: Towards a New Perspective. 29pp. Download from <http://ebookbrowse.com/dmh-c026-disaster-rehabilitation-alka-dhameja-pdf-d418933431>
- Edwards, A.J., Gomez, E.D. 2007. Reef Restoration Concepts and Guidelines: Making sensible management choices in the face of uncertainty. Coral Reef Targeted Research & Capacity Building for Management Programme: St Lucia, Australia. iv + 38 pp. Download from [www.gefcoral.org](http://www.gefcoral.org)
- International Recovery Platform. 2010. Guidance Note on Recovery: Climate Change. 109pp. Download from [www.unisdr.org/we/inform/publications/16769](http://www.unisdr.org/we/inform/publications/16769)
- Society for Ecological Restoration International Science & Policy Working Group. 2004. The SER International Primer on Ecological Restoration. [www.ser.org](http://www.ser.org) & Tucson: Society for Ecological Restoration International. Download from [www.ser.org](http://www.ser.org)