



**Asia-Pacific
Economic Cooperation**

Disaster Recovery Checklist

**Incorporating Disaster Risk Reduction
Measures into the Process**

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Executive Summary

In recent years, catastrophic disasters have brought extensive destructions and losses to people and communities in the Asia-Pacific Region. The Disaster Recovery Checklist is prepared to address challenges in disaster recovery and preparedness.

The checklist intends to help people, communities and institutions understand issues of disaster recovery, taking multi-sector approach to deal with the challenges and incorporating disaster risk reduction (DRR) measures into the recovery process. The checklist will serve as a reference document for actions and as a learning material for capacity building in relation to disaster recovery.

Three principles has been recommended, which are “build back better”, “plan before doing” and “people based recovery”. The principles are embedded in six sections of the checklist. Key messages of the checklist are summarized as follows:

1. Disaster Recovery Planning and Implementation

- Efforts will be made to secure basic living of the affected people in the recovery process, such as food, drinking water and shelters.
- Disaster recovery operations will be planned before implementation. DRR measures will be incorporated in the process. The planning will be based on reassessment of losses, needs, resources, capabilities, disaster risks, etc.
- Identification and prioritizing the needs are the basis to determine the recovery objectives and to allocate and mobilize resources for the recovery projects.
- Innovated policies and technologies, including DRR measures, are to be introduced to tap potentials for build back better.
- Institutional arrangements will be made to lead, coordinate, implement and monitor the recovery operations and to make the process smooth and efficient.

2. Infrastructure and Public Service Reconstruction

- Infrastructures and public utilities will be restored and reconstructed in first hand to support people’s basic living and the recovery process.
- Recovery of education and health systems is the top priority to protect children and vulnerable people, which releases stress and pressures of the recovery.
- DRR measures will be incorporated into the reconstruction of public services, in which hard part and soft part should be upgraded hand in hand.
- Disaster management system is part of public services. It backs the recovery by reporting disaster issues and by enforcing DRR actions.

3. Economic and Business Rehabilitation

- Economic and business recovery provides opportunity for adjustment of development patterns.

- It is time to phase out production capacity of high costs but low benefits to local economy and business, and in the meantime better ones can be introduced.
- Efforts will be called to seek balance between immediate needs and long-term development so as to best use the recovery resources.
- Agriculture production and food supply will be rehabilitated soon after disasters to ensure people to have food and means of living.
- Factories and companies have dual functions (1) to recover production and business, and (2) to support the affected people in building resilience and in stabilizing the local market and society.
- Cultural related business plays unique role in social mobilization for the recovery and in awareness increase for DRR.

4. Social and Community Rebuilding

- The community recovery will be planned in a holistic way and based on local disaster risk status. DRR Measures will be included in the plan.
- Facilities and services of the affected communities will be restored and improved, and community integrity and local traditions will be reserved.
- Resident house retrofitting and reconstruction will be part of the community recovery programme, and DRR measures will be taken into the process.
- People out of job will be assisted for re-employment or self-employment so that the affected families will regain income source to secure livelihoods.
- Improvements of social securities will be defined and developed for building community resilience.

5. Environment and Eco-System Restoration

- Measures will be taken to conserve and sustainably utilize land, water and vegetation. Human activities will be identified to see if they had contributed to eco-system degradation and intensified natural hazards.
- Pollution control and treatment facilities will be rebuilt or newly installed where possible to protect the environment and eco-systems.
- The recovery projects to be planned and implemented should be environment friendly and in support of eco-system protection.

6. People Based Recovery (PBR)

- PBR has three interrelated parts: people's participation in the recovery, people empowered through the recovery, and people benefited from the recovery.
- PBR encourages people to actively participate in the recovery planning and implementation. It also facilitates people to improve their life, build resilience and increase their DRR awareness.
- Different needs of people in disaster recovery will be noted, and their strengths will be maximized to achieve the recovery objectives.

- Special efforts are required to care and empower the vulnerable people within communities and institutions throughout the recovery process.

PART ONE :

Introduction of the Checklist

a. Why We Need a Disaster Recovery Checklist

The Asia-Pacific Region:

The Asia-Pacific Region lies on the east and west sides of the largest ocean, the Pacific Ocean, in the world. The region has been considered one of the most vulnerable areas where devastating disasters, such as earthquakes, floods, tropical storms (also called as hurricane, cyclone or typhoon) and tsunamis, cause severe damage and loss to the region each year.

The Asia and Pacific Economic Cooperation (APEC) accounts for approximately 40% of the world's population, 54% of the world GDP and 44% of the world trade.

The APEC region is very prone to severe disasters. Several catastrophes have occurred over the region in the past ten years, including Hurricane Katrina in the United States in 2005, the Sichuan Earthquake in China in 2008, the 2008 Cyclone Nargis in Myanmar, the Australia's Wildfires in 2009, the Chilean Earthquake in 2010 and the Great East Japan Earthquake in 2011. Not to mention the Indian Ocean Tsunami in late 2004, which killed more than 200,000 lives. These disasters caused extreme human casualties and property destructions and set back local economic development for years if not for decades.

It should be noted that some of these catastrophes occurred in the so-called "economic better-off-countries", but it used to be known that poor countries are disaster prone. To reduce disaster risks and impacts on social and economic development is the common task for the APEC Economies.

Dimension of disaster recovery:

Disaster based on the definition of UNISDR is of a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Catastrophic disasters bring even greater disruptions to societies and communities. Governments, institutions and people in disaster affected areas have to respond immediately to the humanitarian needs, and then to the tough challenges from disaster rehabilitation and reconstruction.

Post-disaster recovery process is an important phase in disaster management. Compared with demands for immediate response to save lives and protect lifelines, and later to relief operations, disaster recovery requires even stronger efforts to balance hundreds of needs from various sectors and to coordinate actions of government departments and social groups. Administrations at different levels have to attend enormous calls for assistance while their means might be limited to meet all requests. Further more, resources may have been exhausted for disaster response and relief.

Disaster recovery has different definitions in terms of timing and scope of tasks. Though early recovery, transitional period and long-term recovery are frequently used, disaster recovery stated in this checklist is in its general term. The timing for a disaster recovery process may last for 2 - 3 years, depending on extent of the damage and losses and the recovery resources that have been made available.

According to the UNISDR Terminology on Disaster Risk Reduction (2009),

disaster recovery means the restoration and improvement where appropriate, of facilities, livelihoods and living conditions of disaster affected communities, including efforts to reduce disaster risk factors. In routine expressions, rehabilitation and reconstruction are broadly spoken for disaster recovery.

In this checklist, “disaster recovery” has the meaning for both rehabilitation and reconstruction. Other words, such as restoration, rebuilding or revitalization, are also frequently used in relation to disaster recovery.

Disaster with major economic and social losses requires a recovery programme. It depends on the extent of disaster destruction to communities and societies, and whether coping mechanisms and instruments exist for governments to initial disaster recovery operations. To do some preparation beforehand will enable timely and appropriately start of the recovery programmes. This is one of the expectations of the checklist.

Disaster recovery starts at disaster preparedness stage. Disaster recovery has a phase feature, like response or relief. But preparation can start early. A disaster recovery framework/plan or a coordination mechanism can be developed in advance, and followed by related training prior to disaster occurrence. If so, it will greatly alleviate the pressing burdens over government officials and community leaders when the recovery process arrives. Pre-disaster recovery planning can be one of the most important actions in disaster preparedness.

Disaster brings with extensive destructions, but it provides opportunities for development. In disaster recovery, social and economic development can be adjusted and reformed to better serve the needs of people, and make people less vulnerable to disasters. In understanding this, it is important for governments of disaster affected areas to seize the opportunity to revitalize people to reduce disaster risks and to build better and safer communities and business through disaster recovery operations.

Actions for disaster recovery:

According to **Hyogo Framework for Action 2005-2015** (HFA) approved by the World Conference on Disaster Reduction in 2005, efforts are called to incorporate disaster risk reduction measures into post-disaster recovery and rehabilitation processes and use opportunities during the recovery phase to develop capacities that reduce disaster risk in the long-term, including through the sharing of expertise, knowledge and lessons learned. [ii-h of Para.19, HFA].

In responding to the regional calamities and in implementing Hyogo Framework for Action, APEC Emergency Management CEOs’ Forum was held in Lima,

Capital of Peru in August 2008. The forum adopted the **Strategy for Disaster Risk Reduction and Emergency Preparedness and Response in the Asia Pacific Region: 2009-2015** (The APEC Lima Strategy).

The APEC Lima Strategy plans to achieve three core objectives. Objective Three states to identify practical mechanisms, instruments and communication products for implementation at a community level in member Economies. Targeted to strengthen important local level networks and structures, these products should include measures that seek to enhance business and community resilience, embed more comprehensive disaster planning priorities in local government policy development and tools to build capacity and remove gaps in local preparedness. The document also identified Strategic Lines to develop joint disaster preparedness actions and to support recovery processes in disaster affected Economies through long-term development approach". [2 and 4, the APEC Lima Strategy].

Preparation of this disaster recovery checklist is one of the actions to implement HFA and the APEC Lima Strategy in coping with challenges of disaster recoveries and in developing respective capabilities, including mechanisms, instruments and communication products. This checklist will assist local governments, business forms and communities to address issues of disaster recovery in preparedness or in rehabilitation and reconstruction process.

b. What Is This Checklist About

Rationales to prepare this checklist:

The Disaster Recovery Checklist is developed to assist officials, professionals and people who are facing with disaster recovery issues. The document will help them understand better subjects and issues related to disaster recovery and identify tasks, policies and strategies to address challenges in disaster recovery.

In facing with the critical disaster challenges to the region, the checklist can be used as a reference document to complement those existing mechanisms, policies and instruments to achieve goals of disaster recovery. It will assist activities of incorporation of disaster risk reduction measures into the recovery programmes or of capacity building in disaster preparedness.

Pressing time and strong desire to return to "the normal" in disaster emergencies is common, when the affected people can hardly spare resources to cope with the tough recovery pressures. The checklist in hand will make them better prepared to take the right recovery strategies.

Disaster preparedness specified by HFA states that there is a need for proactive measures, bearing in mind that the phases of relief, rehabilitation and reconstruction following a disaster are windows of opportunity for the rebuilding of livelihoods and for the planning and reconstruction of physical and socio-economic structures, in a way that will build community resilience and reduce vulnerability to future disaster risks. [j of Para. 13, HFA]. The checklist is prepared to help build community and business resilience in the region.

Features of the checklist:

1. **Focusing on disaster risk reduction** – Since the beginning of the century, global efforts are moving toward concrete actions to reduce disaster risks in response to disasters and in development process. One major feature of this checklist is to incorporate disaster risk reduction measures into disaster recovery projects.
2. **Highlighting capacity building** – This checklist has identified capacity building needs in post-disaster recovery to stress disaster risk reduction (DRR). Lessons from the past experiences show disaster recovery is not so much about construction of houses and facilities in their original structure or shape, but about how to rebuild them better and safer against future disasters. To build capacities, people need a) to understand nature of post-disaster recovery, b) to access to knowledge and information of DRR, and c) to improve the planning and implementation skills.
3. **Taking multi-sector approach to deal with multi-risks** – The checklist is to address multi-risks mainly related to natural disasters. It is understood today that most of disasters happened are contributed by mixed risks in combination with vulnerabilities of the human society. In this regard, disaster recovery requires a multi-sector approach: efforts are to be mobilized from varies sectors, and actions are to be taken by different institutions in a coordinated manner. Multi-sector approach works more effectively to address multi-risks led disasters.

Objectives of the checklist:

1. **To help understand issues of disaster recovery** – The checklist is to help government officials, disaster management professionals and business personnel better understand critical issues in disaster recovery process and have an overall picture about the subject. The document is of use to a broad range of people in the APEC region for them to gain basic understanding disaster recovery.

2. **To serve as a reference document in disaster recovery** – The checklist will serve to institutions and people to undertake tasks during the recovery process. These tasks may range from developing the recovery plans, design of policies and instruments to support implementation of disaster recovery projects, identifying needs in capacity building for communities, etc. In doing these works, the checklist can be referred to for searching directions and actions in post-disaster recovery.
3. **To assist disaster preparedness** – Disaster preparedness is a process to get communities or government institutions prepared in dealing with disasters. Evidences show communities well prepared against potential disasters will have less destruction and losses than those not prepared. The checklist will empower people and communities before and after disasters. Some activities of disaster recovery can start in disaster preparedness stage, such as building capabilities, developing mechanisms, etc.

Principles to guide disaster recovery:

Disaster risk reduction (DRR) is one of the key strategies for planning and implementing the recovery programmes. Specifically it requests that respective DRR measures are incorporated into disaster recovery projects. The checklist considers three principles are important to embed the DRR strategy in disaster recovery process:

1. **Build Back Better** – In disaster recovery, buildings, facilities and systems are to be rebuilt better and safer against disaster risks than they were before. The principle also seeks balance between inputs and risk control efficiency.
2. **Plan Before Doing** – Disaster recovery actions and programmes should be planned in a comprehensive way before implementation, in which disaster risks will be identified for reduction.
3. **People-Based Recovery** – Disaster recovery actions are planned and implemented to serve the basic interests of disaster affected people. This is to be achieved through people's participation in the process as well as capacity building and DRR activities for people's empowerment to eventually benefit the affected people.

c. Who Are the Users

The checklist is developed for the APEC region to serve to institutions and

individuals of the APEC Economies in disaster recovery. It is specifically for three groups of people:

1. **Government officials** have the premier duty to protect people's lives and properties against disasters. Administrators and officials in all sectors have responsibilities for disaster recovery.
2. **Professionals linked to disaster matters** will be the core users, who work in institutions of disaster management, research, education, early warning, etc. These institutions may affiliate with government administration, public services, trade and business companies, academic and research institutes, NGOs or international agencies.
3. **Business personnel** play a critical role in disaster recovery. On one hand business has supporting functions of societies or communities in disaster recovery and in routines, and on the other hand business managers have to protect their staff and properties against disaster risks. They may even have to restore their business or rebuild their facilities.

The checklist is not structured to categorize the recovery issues and subjects for different types of users, neither have some actions been specifically divided between planners and managers. This makes the contents concise. In fact, the document desires users to know the whole subject and to take multi-sector approach in disaster recovery planning and implementation.

d. **How to Use the Checklist (Where and When)**

A diversified region:

The checklist is to serve to members of the APEC Economies where disaster risks and coping capabilities are not alike. Obviously, the users may have quite different backgrounds and locations. As stated earlier, the region covers a vast territory with so diversified geographic conditions, economic structures and culture histories. The checklist has to be used according to the specific local conditions related to disaster risks, vulnerabilities, capabilities and the extent of destruction following major disasters.

Disasters are the common challenge to most of the APEC Economies, no matter they are from disaster prone areas with weak economic power or from fast social and economic development places where disaster risks may still develop and be out of control. In addition, increased trade and investment among the APEC member economies require that the DRR actions will not only benefit disaster

affected people, but also to protect the spreading business activities in the Asia-Pacific Region.

Time concerns:

Disaster recovery process usually starts when disaster relief operation is well on track, but some of the recovery activities can be carried out in linkage with disaster reduction and disaster preparedness activities. Though disaster recovery planning and implementation starts after a disaster occurs, DRR efforts and related capacity building activities for disaster recovery has no time boundary.

Applying the checklist:

The checklist is part of the APEC initiatives to support institutions and people in their engagement in reducing disaster risks and building resilience, or in process of disaster recovery planning and implementation.

The checklist does not intend to provide immediate answers and tailor-made solutions to specific challenges or problems emerged in disaster recovery. The points and suggestions listed by the document are constructive and helpful for reference and learning. Applying the checklist will take into consideration of specific disaster risks, disaster damage and loss, and social and cultural background, as well as capabilities of the affected areas.

Structure of the checklist:

The whole document is in two parts:

- PART ONE is about the rationales to prepare this checklist. It gives an introduction about the checklist and how to use the document.
- PART TWO is the checklist, which has six sections, each deals with an important recovery field.

One may go directly to PART TWO or even to a section. Reading through the document would be desirable to know the whole process of disaster recovery. Lists are attached for documents and books referred to by the checklist and for persons who contributed to the checklist preparation.

Six sections have formed the checklist. Each section has several sub-sections to list basic issues and subjects of disaster recovery, which are grouped to identify their positions and linkages with other sections and sub-sections. It should be noted that the last section contains crosscutting issues, which directly concern with people, the ultimate beneficiaries of disaster recovery.

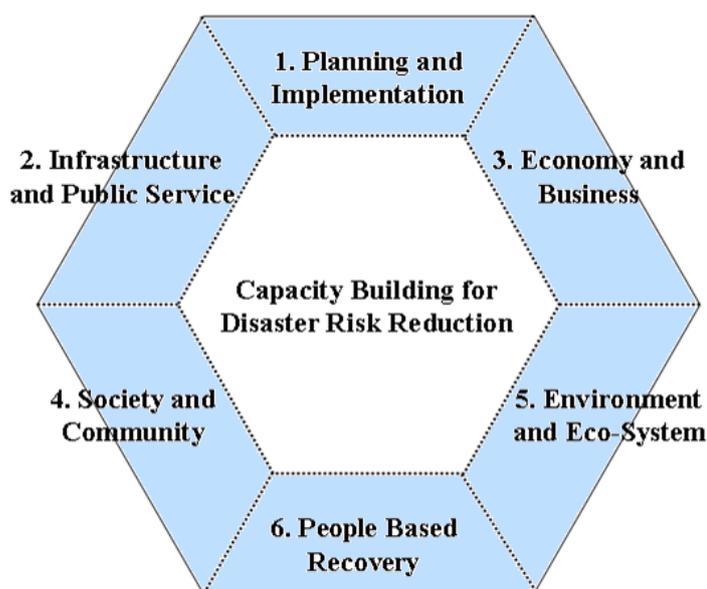
Issues and subjects listed under each sub-section may be of practices, lessons, learning points, policies, advices or reminders. It is to note that they are not applicable to all situations or conditions.

A list of capacity building needs (CBN) for incorporation of DRR measures into the recovery process is suggested at the end of each section, which will help users identify actions for capacity building against disasters.

Several pieces of studies (extracts) done by specialists or agencies have been included in relevant sections for further reference and learning. It is to note that a handbook for disaster recovery practitioners is being prepared by ADPC. When published, readers can refer to both documents in relation to disaster recovery.

A diagram is presented below for an overview of the checklist structure:

Figure 1: Diagram of the Checklist Structure



From Disaster Response to RECOVERY to Sustainable Development



Section 1: Disaster Recovery Planning and Implementation – The section introduces issues and possible actions to address disaster recovery challenges. These issues start with reassessment of disaster situation, including risks, in order to identify needs and resources for the recovery projects. Objectives of the recovery will be determined, policies will be designed, and institutional arrangement will be made.

Section 2: Infrastructure and Public Service Reconstruction – These are the

basic elements of societies and communities. Rehabilitation and reconstruction actions will be first taken to restore lifelines and public service functions, which are the basis to ensure the livelihoods and to recover local economy. Principles of “Build Back Better” and “Plan Before Doing” will be applied to guide repair and reconstruction of the destroyed infrastructure and public utilities.

Section 3: Economic and Business Rehabilitation – The economic and business recovery drives short-term and long-term recovery and development of regions and communities in disaster affected areas. Disaster recovery should keep balance between disaster recovery projects and on-going projects started before happening of a disaster. Economic adjustments may be taken in the recovery to achieve sustainable development.

Section 4: Social and Community Rebuilding – This section is about issues related to social and community recovery after disasters. The affected families and people are the targets to be benefited from restored and improved social and community services and functions. Rebuilding resident houses and community facilities are the most challenging tasks to be addressed here.

Section 5: Environment and Eco-System Restoration – Environment and eco-system can also be severely damaged in disasters. Issues and subjects about their restoration are grouped in this section. Environment and eco-system restoration in a broad sense is about how to ensure sustainable development to benefit people in long-term. Natural resources conservation and use, eco-system degradation and the related disaster risks being intensified, and environment protection are the key issues covered by this section.

Section 6: People-Based Recovery – Crosscutting issues and subjects directly related with disaster affected people are listed in this section. They are also interrelated with other sections. The key message from this section is that the checklist intends to promote the principle of “People-Based Recovery”. The section defines different needs and capabilities of people, and ways to strengthen their resilience during the recovery process.

It is repeated that use of the checklist will be based on local conditions and specific disasters. Issues and actions listed in the six sections are from disaster management perspectives. The checklist is complimentary to knowledge and practice of professionals from other fields in disaster recovery.

PART TWO :

The Checklist

The following issues and subjects have been identified for reference to assist institutions and individuals in post-disaster recovery.

1. Disaster Recovery Planning and Implementation

1.1 Secured basic living for people in disaster recovery

- Relief plan will be consolidated to meet basic needs of disaster affected people for food, drinking water, warm clothing, shelters, etc. and to support disaster recovery operations.
- Disaster relief objectives are set to support disaster survivors to be gradually self-reliance in their livelihoods in disaster recovery.
- Temporary solutions should be worked out to shelter homeless people

until their houses repaired or reconstructed in better and safer quality.

- Restoration and provision of basic facilities should be part of disaster recovery plan, such as electricity and water supply. It would be desirable to connect the facilities to shelter camps, and people there will have access to sanitation services, including medical care and public toilets.
- Wherever possible, tents and shelters with relatively durable quality will be set up if house retrofitting and reconstruction will take longer time.
- Measures are to be taken to safeguard security and safety of disaster survivors living in shelter camps against outlaws, robbery, theft or fires.
- Measures to care different groups of people will be taken in the recovery process, such as special needs and traditions of the minority people.
- Relief aid to trade for community recovery activities may be introduced to release financial constraints, and to encourage people's active participation in rebuilding their homeland.
- Actions will be taken to monitor and reduce risks that may lead to secondary disasters during the recovery process to protect lives and disaster recovery operations.

1.2 Reassessment of losses and capabilities for disaster recovery

- Planning of the recovery programmes will be made based on reassessment of disaster situation of the affected areas. Without sound planning, the recovery needs may not be correctly identified and the valuable resources could not be efficiently utilized.
- The reassessment will cover disaster damage and loss to lives, properties, livelihoods, infrastructures, public services, economy, business, trade, environment and other sectors.
- The reassessment will define severity of areas and regions that have been hit by disasters so that the recovery assistance could be prioritized to address the most needed.
- Number of casualties, extent of destructions to infrastructures and economic loss would be the main indicators of disaster damage and loss.
- Disaster loss reassessment will be made to each household, particularly about houses and livelihoods, the most valuable asset and survival conditions for disaster affected people to be recovered.
- In-depth review will be made for disaster risks through reassessment of vulnerabilities and hazards, as well as degree of the exposure.
- In addition to the destruction, the recovery planning and disaster risk reduction (DRR) measures to be taken will largely depend on scope and intensity of disaster risks in the areas as well as the coping capabilities.
- Financial and material resources will be analyzed to clarify shortfalls for resources mobilization for post-disaster recovery.
- Managerial and technical capabilities will be reviewed to identify capacity building needs for training programme planning and for importing most

needed expertise.

- As part of disaster preparedness activities, a disaster recovery framework or similar documents might have been prepared, which can be reviewed, detailed or revised according to the extent of damage and loss. Then, it can be turned into a full disaster recovery plan. This would be the first thing to do in disaster recovery planning.

1.3 Identification of needs, challenges and objectives

- Reassessment results will assist planners and decision-makers to review and define disaster recovery needs and to set up the recovery objectives.
- Reviews of disaster recovery needs will be carried out, and the selected needs will be prioritized in line with the reconfirmed disaster damage and losses of the affected areas.
- Disaster rehabilitation and reconstruction will face tough challenges even if it is a simple build back. To build a better and safer community will require officials and people to make greater and wiser efforts.
- To determine recovery objectives will require government officials to balance resource allocations between disaster recovery projects and long-term development programmes. They will justify people's expectation about the recovery outcomes and specify timing to achieve them.
- Principles are to be adopted to guide disaster recovery planning and implementation and related actions and projects. The checklist suggests three principles: a) **Build Back Better**, b) **Plan Before Doing**, and c) **People-Based Recovery**. These principles aim to maximize the recovery efforts for building better and safer societies and communities.

1.4 Resource mobilization for disaster recovery projects

- Resources shortfall is a common problem for post-disaster recovery, particularly the funding shortage. Resources mobilizations are required in most cases for funds from internal and external channels.
- Resources are to be defined and quantified to support specific regions, sectors and projects. Extent of needs, destruction and economic loss are the major considerations for resource mobilization.
- Measures for internal resource mobilization may include saving or adjustment of current fiscal arrangement. Cutting budget or delaying fund disbursement may be a solution. Charity and public donation campaigns for cash or material are the popular ways for resource mobilization.
- Mobilized funds and materials are to be allocated to the affected areas as soon as possible according to agreements reached in advance, and the allocation and distribution will be fair and transparent.
- Specialists and volunteers services are human resources for disaster recovery operations, which should be included as part of resources mobilization schemes. These people are greatly appreciated to join the

recovery operations.

- Local governments and communities may provide support to make their services deliverable.
- Assistance provided by external institutions is usually in form of projects. Efforts will be made to ensure sustainability of these projects to benefit the affected people when the recovery is over. This requires that a) local people are trained to be able to manage the projects; and b) local finance is able to cover operation fees of the projects.
- Exit mechanism for external aid may include registration and transfer of assets, maintenance plan, completion of unfinished projects after closure of the recovery operations, etc.
- International assistance contributes to success of disaster recovery, not only because of the material or cash aid, but also the technical know-how, good cases, lessons and experiences. In this regard, areas and regions undergone disaster recovery can also be the contributors.

Study 1: Standby Recovery Financing Facility (SRFF)

The SRFF is a financing mechanism to support disaster preparedness and accelerated disaster recovery in high risk countries, particularly low-income countries.

SRFF's core principle is to ensure that risk reduction is integrated into the disaster recovery phase, when there is the greatest opportunity to "Build Back Better." SRFF's comparative advantages are that it is administered by the World Bank and managed by a partnership between the Bank, UN, major donors, and recipient countries.

The SRFF includes two financing mechanisms: Track III-A, B and C, the "Technical Assistance (TA) Fund", and Track III-D, also known as "Callable Fund" for speedy access to financial resources for disaster recovery.

Source: <Global Facility for Disaster Reduction and Recovery – Handbook on the Standby Recovery Financing Facility>
UNISDR and the World Bank, March 2008

- Many UN agencies have mandates to assist countries in disaster recovery process in addition to humanitarian relief aid. International assistance in this field is coordinated by UN Resident Coordinator or his/her designated staff member.
- Despite external assistance, it should be noted that government

authorities of disaster affected areas have the primary responsibility for planning and implementation of its own disaster recovery programmes and for taking measures to reduce disaster risks in the process to achieve the recovery objectives.

1.5 Introducing innovated policies and technologies

- Post-disaster recovery has to attend extensive rehabilitation and reconstruction needs while the resources are far short. Existing policies may not be sufficient to cope with the challenges. Innovated policies will have to be designed and introduced.
- Innovated policies are to tap potentials to ease the financial constraints and to find out solutions to problems and difficulties that existing policies/resources may not be able to deal with.
- To introduce innovated policies, barriers for cooperation and coordination among different sectors and areas need to be removed to allow easier flow of resources to the most needed areas and to maximize the efficiency use of resources for the recovery.
- Policy renovation to be considered may include human resources policies to attract skilled persons, land use policies to help farmers to access to farmland or related means of production, bank policies to assist homeless families to get low or interest-free loans to rebuild houses, employment policies to encourage people to look for jobs or to be self-employed, etc.
- It is to note that such policies are of situation-driven and tailor-made for the recovery. These policies will be reviewed whether to continue or to terminate when the recovery process is over.
- New technologies will be applied in disaster recovery wherever possible to phase out old technologies. Simple recovery of those destroyed buildings, facilities and production lines with the same technologies is not recommended.
- Selection of new technologies will take into consideration if they are of disaster risk reduction, environment friendly, protection of people's health and safety, relatively low cost, using local resources, promotion of local re-employment, etc.
- To introduce innovated policies and new technologies will make sure if they are supportive to the overall disaster recovery programme of the region and confirmative to the principle of "Build Back Better".

Study 2: The Planning Process for Early Recovery

Planning must give early priority, where needed, to increasing government capacity for aid coordination, policy-making and programme delivery. This may involve deployment of experts to work in government ministries, and identifying which coordination functions performed by the UN can be transferred to government/ national authorities as part of the national ownership and capacity-building process. These functions may continue to be financed, staffed and advised by the UN for an interim period.

The strategic planning exercise should address the 'tyranny of rush', whereby societies affected by a major crisis tend to seek rapid and visible solutions to restore normality, often at the cost of more sustainable and durable solutions that address the causes of the crisis. This rush can work against opportunities for change, risk reduction/conflict prevention, and sustainable development. Effective sequencing of activities is an important success factor in countries where institutional capacities are low and priorities are numerous and competing.

Planning must be strategic, field-driven and guided by a common understanding and analysis of the underlying causes of the crisis. It should build on the accumulated experiences of humanitarian actors, identify the results expected under different contingencies, establish mechanisms to determine progress, and be flexible enough to enable a quick response to changing situations. Cross-cutting issues such as gender, human rights, environment, HIV/AIDS, disaster risk reduction and conflict prevention should be part of early recovery assessment and planning and allocated sufficient resources and capacities during the implementation phase.

Source: <Guidance note on Early Recovery>
UNDP Cluster Working Group on Early Recovery, April 2008

1.6 Institutional arrangement for the recovery

- Success of disaster recovery operations relies on good institutional arrangement. In managing disaster recovery issues, either there is already a mandated institution to lead the process, or a new institutional arrangement has to be established to supervise, coordinate and implement disaster rehabilitation and reconstruction operations.
- Institutional arrangement for disaster recovery operations will clarify roles and responsibilities of the leading, participating and supporting

institutions in the recovery process.

- Disaster recovery process will be involved in by most of government and social institutions of the affected areas. International agencies may also join. Their roles and functions in the recovery are to be defined.
- Legislation will also be reviewed to check whether existing laws and regulations are sufficient to support disaster recovery planning and implementation, otherwise new provisions may have to be added.
- Political dimension of countries and regions varies and needs to be considered in overall planning of post-disaster recovery in order to mobilize strong political support.
- Implementation, coordination, monitoring, evaluation and reporting mechanisms must be set up within the recovery institutional arrangement to ensure the recovery process is progressing well on track.
- Quality supervision mechanisms will be in place to inspect if the recovery projects are implemented in observation of the designs and regulations, and to check if DRR measures are incorporated into the process.
- Audit system will be introduced to discover misconduct or misuse of the recovery funds in the operations for follow-up correction or discipline.
- Procedures will be formed and observed for application, review and approval of the rehabilitation and reconstruction projects to ensure that aid is provided to the right sectors and areas, and the decision-making procedures are followed.

Table 1: CBN – Disaster Recovery Planning and Implementation

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Studies of disaster relief and shelter camp management skills to ensure basic living and safety of disaster survivors during disaster recovery process.
2	Capability improvement for government officials on planning and implementation of post-disaster recovery programmes.
3	Learning methods of post-disaster reassessment about data collection of disaster damage and loss, change of disaster risks, prioritizing recovery needs and identifying recovery challenges, and studying cases of DRR measures for disaster rehabilitation and reconstruction.
4	Introducing to institutions and individuals about estimation of their economic losses in disasters, both for household belongings and means of production, and about how to report to respective institutes for aid or for compensation in line with the recovery planning.
5	Learning of innovated policies to address disaster recovery challenges and extensive recovery needs in terms of resources constraints, balancing among relief needs, recovery demands and on-going development projects, etc.
6	Introducing new technologies for possible application in local reconstruction

	projects aiming at reducing disaster risks and Build Back Better.
7	Learning skills of resource mobilization from both internal and external sources and the management of the resources in order to fund disaster recovery programmes.
8	Further studies by government officials about the DRR concept and the principles recommended by the checklist for application in disaster rehabilitation and reconstruction activities.
9	Organizing public events for raising awareness for community leaders and residents about challenges of disaster recovery and strengths and opportunities for Build Back Better, as well as about importance of disaster risk reduction in the recovery for building the resilience.

2. Infrastructure and Public Service Reconstruction

2.1 Urban and rural public utilities

- Pipe-water, electricity, telecommunication, fuel supplies and public transportation are public utilities supporting people's daily life in urban and rural areas. They form one of the most important parts of disaster recovery programmes. Recovery of these utilities is urgent and essential.

Study 3: Recommendations against Flood Risks after Hurricane Katrina

Flood Hazard - Recommendations Specific to Critical and Essential Facilities		
Parameters		Recommendations
Critical/Essential Facilities		
Public Shelters	1	Do not open shelters located in potential storm-surge inundation zones until after the hurricane has moved inland sufficiently to allow safe travel.
New Critical and Essential Facilities (reconstruction of existing facilities)	2	At a minimum, elevate or protect new facilities in flood hazard areas to the 500-year (0.2% annual exceedance) flood level, or based on ASCE 24-05, whichever is higher. This is a current requirement per 44 CFR Section 9.11 for reconstructing existing facilities. Areas below this elevation can be used for vehicle and equipment storage, but plans should be made to relocate vehicles and equipment in the event of a severe storm. Floodproofing of vehicle and equipment storage areas may be an alternate approach for facilities located outside the V Zone and Coastal A Zone.
Existing Critical and Essential Facilities	3	For facilities located within a SFHA, develop emergency operation plans that allow building occupants and operations to be relocated to sites outside SFHA before onset of storm. Do not occupy vulnerable facilities during an event.
Existing Critical and Essential Facilities	4	Evacuate emergency supplies and equipment to the extent possible if an existing facility is to be evacuated before hurricane landfall.
Existing Critical and Essential Facilities	5	Evaluate vulnerability of existing facilities in light of recent damage to similar facilities; strengthen and floodproof structures where feasible.

Source: <Hurricane Katrina in the Gulf Coast – Mitigation Assessment Team Report>
FEMA, July 2007

- Recovery of these utilities may be in forms of repair, retrofitting or rebuilding to first restore functions of, and then to improve the utilities.
- Land and water resources are basis for recovery of infrastructures and public services. Land clearance and water supply restoration should be started soon after the emergency threats are over.
- Public utility recovery will consider temporary solutions to meet immediate needs of disaster affected people during the transitional period from relief to recovery.
- Actions will be taken to incorporate DRR measures into the recovery process so that these utilities will be sustained against future disasters.
- Public utility recovery will also take into account of long-term social and economic development goals while satisfying the immediate needs. Disaster recovery thinks of both.
- Repair and reconstruction of public utilities will have to consider existing disaster risks and available financial capabilities in terms of achieving objectives specified in the recovery plans.
- Difference of public utilities exists between urban and rural areas, and standards of their recovery and reconstruction may vary. However, improvements to better serve people and incorporation of DRR measures into the recovery will be made wherever possible.

2.2 Education systems

- Children are future of our society. Children's education in disaster affected areas is a top concern to governments and their parents, who are engaged in disaster recovery activities. Education is also connected with long-term social and economic development.
- Education system recovery is one of the priorities in disaster recovery. Education facilities, such as schools and nurseries shall be restored to care and to provide education to children soonest. Training centers for adults will also be included in the recovery of education system.
- Classrooms and affiliated facilities of schools, such as teacher offices, labs, dining rooms, toilets, will be reconstructed according to local disaster risks and building codes.
- Before completion of these buildings, temporary arrangements for the schooling shall be made, so that children will not miss learning. This also enables the parents to perform their working duties in the recovery.
- School building standards against disaster risks may be raised higher than those of other buildings for children's safety. Also take into account that these buildings may be turned into temporary shelters during emergency time.
- Recovery of education systems will improve both hardware and software to maximize the benefits for children. Training of teachers and managerial

staff of the affected schools will be arranged simultaneously with the school recovery projects. In addition, the curriculums may be upgraded in line with the improved school facilities.

- Elementary learning about disaster reduction and preparedness will be adopted into textbooks and school curriculums. Drills to respond to disasters will be conducted regularly in and out of schools. Children sometime are “teachers” to their parents.
- Efforts will be required from families and communities for protection of children in close cooperation with school authorities. This is particular important for children’s psychological recovery from disasters and for their safety in and out of schools.

Study 4: Building Back a Better Education System

Education systems had been severely damaged in earthquake happened on 8 October 2005 in Pakistan. UNESCO provided assistance to improve learning of all children, youth and adults. Programme activities are fit to the local needs and capacity building for long-term recovery. UNESCO’s work includes:

- Assessment of damage to the education system
- Basic support to tent schools
- Provision of materials and equipment to schools and institutions
- Training needs assessment of teachers and education officials
- Development of training materials for trauma support to teachers, education managers and supervisors
- Training, coaching and on the job mentoring of education officials involved in recovery and reconstruction

Source: <UNESCO’s Earthquake Response Programme>
UNESCO, Islamabad, 2006

2.3 Health systems

- Health systems will include hospitals, ambulance service, physical check facilities, disease control centers, pharmacies and medicine supplies. They are essential to provide health services to people.
- Hospitals and ambulance services play a key role in rescue and save lives and in treatment of the wounded and sick people in disasters. The buildings and facilities of health systems if severely damaged in disasters will be retrofitted or reconstructed guided by DRR strategies.
- During disaster recovery process, doctors and nurses often perform dual functions to attend daily patients and to cure the wounded and sick people in hospitals or shelters.

- In addition, the medical staff will frequently visit disaster affected areas for disinfection activities and for surveillance and prevention of contagious diseases.
- Reconstruction of health systems will largely focus on damaged buildings. However, managerial and technical capabilities of the staff should also be improved so that the rebuilt hospitals and health institutes are well maintained and can provide better services.
- Medical teams dispatched during the emergency period are to spare time to assist health institutes and staff of disaster affected areas to improve their skills and knowledge prior to their departure from the areas.
- Government funds for medical treatment and epidemic prevention in emergencies may also be expanded to cover needs of people in the recovery process.

2.4 Public services

- Public services handle issues and matters happened in social and economic activities, such as marriage registration, legal cases, certificate issuance, business creation, market management, social orders and public security, etc.
- Restoration of public services is the government responsibility.
- It should be noted that issues, matters and even disputes following a severe disaster may likely increase in numbers for public services to deal with. Delay in restoration of these services may set negative impact on disaster recovery process.
- Better public services are expected to achieve through disaster recovery and capacity improvement to meet needs of various people and institutions, and the society as a whole.
- Governments sometime may reconstruct these buildings or facilities later than schools, hospitals and public utilities, but they may not delay resuming functions of these services.

2.5 Disaster management system

- Agencies related with disaster reduction and preparedness will join missions to re-assess disaster damage and loss in full collaboration with other institutions led by government administrations.
- Intensive data and information collections and studies of the occurred disasters will be carried out to draw lessons for immediate use in disaster response and recovery planning, and for DRR actions.
- One important area of these reassessments is about risk changes after disasters in terms of their spatial distribution now and possible occurrence in future, and of their state of intensity and activity.
- Occurrence of a disaster may release new disaster risks (leading to secondary disasters): original hills may become unstable after heavy rains

or earthquakes, poison and hazardous materials may be released from industrial facilities, reservoirs and river embankments may be cracked for possible collapse, etc. Rehabilitation and reconstruction will not neglect change of the risks.

- Another important area for the missions is to review various documents, plans, tools and mechanisms related to disaster preparedness, response, relief, recovery and reduction. It is to see if any updates are required in relation to the newly happened disasters.
- The professionals will attend consultations and provide advices to government departments of the affected areas for disaster recovery planning, in which DRR measures will be introduced.
- Buildings of the agencies will be reconstructed if destroyed, and instruments damaged should be repaired or replaced to regain disaster monitoring and early warning functions soonest.
- Improvement will be made to upgrade the system's professional services in disaster reduction, recovery, preparedness, relief and response.
- Disaster management system may be adjusted to better respond to disaster threats and assist sustainable development. Mandate of disaster recovery should be assigned to respective agencies if not done before.
- Reviews will be conducted for on-going disaster reduction projects. Revisions will be made if needed by learning from discoveries of the newly happened disasters.

Table 2: CBN – Infrastructure and Public Service Reconstruction

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Training of key government officials on disaster management and disaster risk reduction in linkage with sustainable development, and summarizing experiences and lessons of response actions to cope with to the newly occurred disasters.
2	Training of staff working in the public sector for deep understanding DRR concept and strategies and for improvement of their services to support disaster recovery.
3	Learning of elementary knowledge of disaster reduction and preparedness, and organizing drills for children, teachers and school managerial staff to respond to disasters with follow-up summary.
4	Health staff to improve capabilities in dealing with challenges from the recovery operations of the health sector: taking care of the wounded and sick people as result of disasters, monitoring, checking and guidance of hygiene of shelter camps and sanitation facilities, control of epidemic diseases, rebuilding destroyed hospitals and facilities, etc.

5	Organizing tailor-made workshops targeting on designers, technicians and quality supervision staff who involved in retrofitting and reconstruction of schools and hospitals, as well as of other public services; and learning DRR concept and measures related to disaster recovery.
6	Improvement of professional capabilities of medical and educational staff, especially doctors and nurses and primary and middle school teachers, in various ways during disaster recovery process through distance learning on the Internet, exchange of staff with the institutes of non disaster affected areas, on-job-training, etc.
7	Sharing experiences in managing temporary schools among managerial staff on subjects of children safety, irregular learning and mental stress alleviation during disaster recovery process.
8	Continued studies for professionals from disaster management institutes on monitoring disaster risks, especially on their activation of developing into disasters, and their impact on social and economic development, and possible results if DRR measures have been taken.
9	Information exchange on application DRR strategies in disaster recovery process for government officials from different sectors and from disaster management agencies in the affected areas.

3. Economic and Business Rehabilitation

3.1 Economic development adjustment

- It is no doubt that disaster is an evil event. It brings huge casualties to human beings as well as causes great damage to public and individual properties and huge loss to the economy. Disaster rehabilitation and reconstruction require tremendous efforts.
- Disasters also provide opportunities for social and economic development, in which governments and institutes may wish to revitalize their economy through adjustment of development pattern and structure. Prior to disasters, this would be impossible due to high costs, but slow returns.
- Since the economy has been destructed badly by disasters, in which out-of-date machines and poor processing facilities have been severely damaged. Governments, banks and enterprises have to decide whether to put investments and efforts in rebuilding old production lines or new and better ones.
- Economic adjustment in disaster recovery is to decide whether it is time to reduce or even phase out badly damaged production capacities of low efficient, low profit, and little benefit to people.
- In some cases, economic structures prior to disasters might have some weakness, such as high consumption of resources and energy, or severe environment pollution and greenhouse gas emission. In the recovery planning, adjustment and improvement will be timely introduced.
- Economic revitalization and adjustment shall consider basic interests of the original staff. Proper arrangements should be made for people who may lose jobs in the process.
- Despite consideration of investment efficiency and benefits from economic adjustment, the recovery projects will control and reduce disaster risks threatening safety of workers, residents and environment.

3.2 Agriculture production and food supply

- Agriculture rehabilitation will cover both production and support services. Agriculture production relates to food production, animal husbandry, poultry-raising, fruit tree growing, fishery, forestry, etc. They are very vulnerable to meteorological disasters, such as droughts, floods and tropical storms.
- Agriculture support services are of technical and business typed systems linked to irrigation, fertilization, pest control, seedling, animal disease control, food storage and supply, marketing and trade, and related training and consultation.
- Food supply system will be restored soon after disasters to ensure minimum nutrition standard of disaster survivors in the recovery process and to avoid famine.

- Destroyed farmland and irrigation systems will require huge labor input for restoration before the next planting season. Short-term crops may be introduced to help disaster survivors gain some food or cash in addition to the government relief aid before the next harvest.
- Food production and farmland conservation may be the most important issues to ensure food supply. Officials in charge should give full attention to it in fund allocation and land use planning in overall recovery programme. Land shortage is as critical as fund shortage in post-disaster recovery in many areas.
- Land re-allocation to farmers in disaster affected areas may be required if disasters have destroyed farmland or even changed landscape. The land re-allocation shall take into account of disaster risks, original land rights/ entitlements, and proportions of land distribution for food production and for house reconstruction.
- In agriculture recovery, adjustment is recommended for the production patterns. DRR measures can be incorporated into the adjustment: farmland can be reshaped to access closely to water sources; farming on steep mountain slopes may be stopped as it is vulnerable to floods and soil erosion; new crops or cultivation methods more friendly to the local climate will be introduced, and so on.
- Agriculture support services will be improved in the recovery to assist farmers to increase their yields and incomes, and to build their resilience in responding to threats of disaster risks.

3.3 Industries and factories

- Again consideration will be given first to adjustment of the existing industries in the planning prior to the rebuilding and to incorporate DRR measures into the recovery of factories to make them better and safer.
- Factories vulnerable to disasters, for example if they are built on geologically unsafe sites and also have been heavily damaged, may either upgrade building standard or be rebuilt elsewhere in the recovery.
- Destroyed factories and mines causing heavy pollution to local residents and environment may be shut or removed, though they could be profitable after the recovery. Reducing production capacity is a compromise.
- Some industries, though economically sound, could be listed in the long-term development plans if they require long time and huge investment to reconstruct.
- Industrial recovery requires large investment. Prioritizing is important for decision-makers to consider that tight funds will be first spent on projects that require less input, short time for reconstruction, and have substantial contribution to local economic revitalization.
- New technologies to be introduced will consider their contribution to DRR, local affordability and economic sustainability.

- Factories contributing to local re-employment in the recovery will be supported in the first place, particularly the small and medium sized enterprises. Special funds should be provided to assist them to resume production and to make improvements accordingly.
- Restoration of energy production and supply is fundamental. The rationale behind this is that it powers the whole recovery process by providing fuel both for economic activities and for people's daily use.

3.4 Business and commerce

- Business and commerce have supporting and catalytic roles in facilitating local economic and social activities and make the latter prosperous and convenient to people's life. Shops, banks, markets, trade and insurance companies, job centers, shipping, and many others belong to this sector.
- Companies and firms have great potential to contribute to local employment, supply of daily necessities and provision of services to daily economic activities. Their recovery will rely on to some extent whether the companies have prepared Business Continuity Plans (BCP).
- Further on this is that business and commerce recovery activities have big impact on local living cost for disaster affected people, which is critical for a smooth process of the local recovery.
- Business and commerce recovery largely depends on recovery of the real economy and community routine activities. And recovery of the latter will boom business and commerce in turn.
- Business and commercial companies will take steps to support incorporation of DRR measures into the rehabilitation and reconstruction of agriculture, industry and public services.
- Awareness and knowledge of the staff in business and commerce sector about DRR determine how they will promote DRR in the recovery.

Study 5: Business Recovery and Reconstruction

Some businesses are obviously less vulnerable to disaster and more capable of recovering than others. Businesses play vital community roles, but research to date has not documented the effects of business closures on family and community recovery. Obviously, the longer businesses are closed, the greater the economic strain on employees' families and the greater the impact on local government revenues.

Source: <Disasters by Design – A Reassessment of Natural Hazards in the United States> 7. Preparedness, Response, and Recovery
Dennis S. Mileti, 1999

3.5 Culture related business

- Culture is associated with people's beliefs, morals and behaviors, which impacts the formation of social relationship.
- Culture related business has roles of serving public interests and of supporting local economic prosperous. Culture related business may include tourism, recreation, advertisement, sports, and also museums, libraries, community leisure centers, and historical sites and buildings.
- Rebuilding culture related business will fully respect native cultures and traditions, including structure design, building material use, mansion skills and construction process. This is also in line with building local resilience against future disasters.
- Recovery of culture related business will contribute to revitalization of disaster affected people to rebuild their communities. It encourages people's active participation in the reconstruction process.
- Culture related business may organize charitable or commercial events to assist the reconstruction by fund raising and by DRR awareness increase for the local people.
- The severely damaged buildings and facilities of the business will be retrofitted, repaired or rebuilt against local disaster risks, and DRR measures will be incorporated into the process.

Table 3: CBN – Economic and Business Rehabilitation

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Review of vulnerabilities of existing economic structures to disaster risks, and acquirement of information and knowledge by government officials and professional staff in major economic and business sectors about DRR concept and strategies for application in disaster recovery process.
2	Deep understanding importance of agriculture production and food supply in disaster recovery, and learning alternative solutions for damaged crops in transitional period from relief to recovery.
3	Studies of review methods of damage and loss of industrial sector to plan disaster recovery projects in relation to long-term economic development, and studies of possible adjustment and actions for incorporation of DRR measures in order for "Build Back Better".
4	Improvement of management capability to boom local market and commercial activities and to stabilize price and supply of daily necessities to secure livelihoods of people in disaster recovery process; and learning related experiences and lessons about this subject.
5	Brainstorm sessions for planners and managers on economic benefits and costs in formulation and application of renovated policies and technologies in the reconstruction projects in line with incorporation of DRR measures.

6	Learning of lessons and experiences of other countries and regions about adjustment of economy and business in their recovery programmes in building the resilience and pursuing for sustainable development.
7	Discussions by officials in charge of sectoral recovery programmes on DRR concept and strategies and the recommended principles in relation to plan the local recovery programmes.
8	Studies by professionals in cultural related business on how they can help promote people's participation and empowerment in building better and safer communities in disaster recovery process.

4. Social and Community Rebuilding

4.1 Social and community revitalization

- Social and community revitalization refers to status, when the emergency period is about over, disaster affected people, families and communities begin to recover.
- During the period, people will be out of intensive emergency response activities, gradually put aside deep painfulness over loss of lives and properties, and start to actively participate in rebuilding their homeland.
- To achieve social and community revitalization, died people will be buried, severely affected families will be consoled, lost persons will be reconfirmed, evacuated people will return home, etc.
- In addition to financial and material assistance, government officials will visit the affected areas and families, express sympathy and facilitate people to communicate with the missing family members for reunion.
- Meetings, gatherings or ceremonies will be organized for local residents and communities to commemorate the beloved and to revitalize the survivors to participate in disaster recovery. These activities are helpful to mobilize forces for recovery of social network and communities.
- Government officials and community leaders have resumed duties, and local administration services began to attend requests. Working staff have returned to posts and participated in various recovery activities.
- Public facilities, such as schools and hospitals, have resumed functions despite irregular hours and services. Also the local markets and business began to revive.
- Both social care and medical care will be made available to disaster survivors. This is part of the actions in emergencies, but would continue in the recovery process.
- Medical studies show that disasters also hurt people's mental health, which is transmitting among people. Psychological aid may be offered to people who has mental stress or developed symptoms of trauma.

4.2 Rebuilding rural and urban communities

- Local governments and community leaders will take the main responsibility and lead the process of rebuilding facilities and services of rural and urban communities with full participation of the local people.
- The community rebuilding planning should be based on reassessment of local disaster risks. Measures to reduce the identified disaster risks will be incorporated into the recovery projects.
- Environment support capacity for disaster affected areas will be reviewed as part of the reassessment missions in order to have an oversight if the areas can still accommodate the communities, people and production activities through disaster recovery, or if resettlement is required.

- Reconstruction programmes of villages and urban communities will be designed as a holistic system to include basic public services, such as schools, clinics, market, etc. Basic public utilities of electricity, water and fuel supplies will be recovered or newly built in the process if possible.
- Sanitation and environment protection facilities, such as toilets, garbage collection and treatment and sewage treatment systems will be set up or rebuilt wherever possible to benefit the affected communities.
- Disaster management mechanism is part of community services. Its performance will be reviewed to check if it worked well in responding to disasters and if any improvements need to be made, e.g., route for evacuation, site for temporary shelters, relief material storage, etc.
- It is a serious matter for resettlement of disaster affected communities to another region to avoid disaster risks. It might be the last choice when existing DRR measures can not protect the residents and if the reconstruction and the DRR costs at original sites are too high.
- The resettlement plan will be discussed and agreed by majority of the local residents and with full support from the governments. Resettlements to new areas will try to keep integrity of the original communities.
- In rebuilding communities, native cultures and local traditions will be respected and protected, especially in reconstruction of historical, ethnic and religious buildings. Poor disaster recovery operations usually disregard culture diversities and heritages.

4.3 Resident house retrofitting and reconstruction

- In rebuilding urban and rural resident houses, DRR will be fully taken into consideration in terms of site selection, house design, and selection of building materials and companies. House rebuilding should be in consistence with the overall community recovery plan.
- Residents of rural and urban communities are organized to remove rubbles and debris and to clear grounds for the reconstruction. Building materials from ruins of destroyed houses will be collected if they can be recycled for use.
- Community layouts and house design blueprints will be prepared by professionals in close consultations with the community residents. Their views, understanding and support to the design are essential to the success of the house retrofitting and reconstruction.
- In rural areas, land re-allocation programmes for resident houses and for agriculture production will be planned simultaneously, and discussed and agreed by majority of the villagers.
- Assistance for resident house retrofitting and reconstruction will be determined beforehand during design of the houses. Cost sharing programmes will explicitly define proportions of funds shared by governments, donations by third parties and by house owners.

- Government favorite policies on this subject will be stated clearly in the programmes, such as land use, subside for building materials, favorite loan interest and time of pay back, etc.
- Reviews are to be conducted for existing building codes during the post-disaster reassessment. Revisions to the existing building codes will be made accordingly against local disaster risks.
- Traditional construction techniques proofed durable in disasters will be applied in the house rebuilding. And new technologies and building materials will be introduced in house retrofitting and reconstruction to make the houses better and safer while the cost is affordable.
- Resettlement of scattered households into compact communities may be considered if original sites are no longer suitable for inhabitation and production, and the residents are happy to live closer.

Study 6: Safer Homes for All Families in Wenchuan Earthquake

Because of the severity of the earthquake in 2008, millions of houses in Sichuan Province were destroyed or damaged so extensively that they were no longer safe. The house reconstruction task is immense. Several practices in housing reconstruction should be noted:

- Housing the quake-hit families within such a short time requires strong leadership.
- Post-disaster reconstruction should upgrade local conditions.
- Informing people to seek their consensus can smooth the recovery process.
- Mobilizing all resources to rebuild the houses.
- Recovery is not just about money.
- Information transparency and public supervision will win the support of the people.
- Housing reconstruction plans must avoid seismic faults and geological risks.
- Quality and safety are more important than speed and progress.

Source: <Wenchuan Earthquake 2008: Recovery and Reconstruction in Sichuan Province>

China Earthquake Administration, ILO, UNISDR and IRP, 2010

- House distribution might be one the most nasty issues to residents and to governments in the reconstruction, especially in the urban areas. Broad and transparent consultations led by local governments and community

leaders will be conducted about the house distribution plan.

- Considerations in the house distribution may include: needs of the residents, size and quality of the original housing, house ownership, affordability and cost sharing by house owners and by other funding, etc.

4.4 Re-employment and income generation

- Without a job and basic income source for each family, disaster recovery will never be completed for disaster affected people.
- Governments must take the leadership in re-employment and income generation activities for the affected people, especially for the poor and disadvantaged families.
- Government agencies will study local re-employment potentials in disaster recovery process, open mind of the jobless people to see their capabilities, and facilitate their job searching and self-employment.
- Individuals who lost jobs in disasters will actively seek job opportunities themselves for re-employment. They are also encouraged for self employment to create their own business. While governments can conduct vocational training for the people to learn needed skills.
- Government agencies will formulate favorite policies to promote re-employment and self-employment, such as fee elimination for beginners in self-employment, micro-finance to support mini-business, fee and tax reduction for enterprises that provided jobs to people of disaster affected areas, etc.
- Channels should be open for unemployed persons of the affected areas to seek jobs in areas not affected by disasters, and barriers to exporting labors should be removed.

4.5 Social security schemes for building resilience

- In building people's resilience to disasters, social security schemes shall be recovered and improved to empower people to address disaster risks.
- Improved social security schemes will have multiple dimensions in building social and community resilience, such as financial support mechanism, mutual aid scheme, volunteer groups, etc. in addition to the commercial insurance.
- Financial support mechanism may be of none profit, where governments will put in some public funds to be combined with money from individuals and (or) from employers. It has some similarity to the insurance system, but the accumulated fund and interests will be used for disaster recovery or DRR related activities for the beneficiaries.
- Mutual aid scheme works within communities where people are organized to help each other when disaster occurs. Attending emergency and recovery needs will be the key functions of the scheme. Assistance of the scheme can be in money and human services.

- Many NGOs and volunteer groups work in communities and have mandate to promote social security and disaster risk reduction. They are engaged in empowerment of people who are weak in development and vulnerable to disasters. Roles of NGOs and volunteer groups can be extended to disaster recovery.
- Better-off-areas to assist disaster affected areas, where massive disaster recovery is underway, has been practiced. The experiences can be summarized for extension.
- Community mediation may contribute to resilience building in another way: to reduce or solve disputes within and among families, neighborhoods and communities. It facilitates strengthening social and community unity and harmonization, and contributes to disaster recovery process and building community resilience.

Table 4: CBN – Social and Community Rebuilding

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Understanding about impact of contributions people and institutions could make in rebuilding communities and about importance of people's participation and empowerment in the recovery process.
2	Access to information about social and community recovery planning and implementation from other areas and countries, including lessons, experiences and specific examples, both positive and negative.
3	Introducing to community leaders and resident representatives about DRR concept and strategies in disaster recovery process and incorporation of DRR measures into the community design and reconstruction process.
4	Raising awareness of local government officials and community leaders about substance of "People-Based Recovery" (also refer to Section 6) in community revitalization and in social mobilization for disaster recovery operations.
5	Publicity activities for community residents about house reconstruction plans, to explain: cost sharing scheme, distribution criteria, and most important the DRR measures for rebuilding safer and better houses against disaster risks while retaining community traditions and local cultures.
6	Community gatherings and discussions on how to join efforts to address disaster recovery challenges and on mutual trust and mutual help in communities. During the occasions, they will also recall good practices of mutual support and mutual help in responding to the disasters that had just happened.
7	Government officials to learn to formulate favorite policies to support and promote re-employment and job creation for disaster survivors and also local income generation activities.

8	Organizing various training, including skill training, to help jobless people find out their potentials and capabilities for re-employment and self-employment opportunities in local recovery process.
9	Trainings for local officials, health staff and volunteers on psychological intervention techniques to treat people who have mental stress after disasters.
10	Meetings and consultations among community residents to discuss and regain community norms by solving disputes and by strengthening social coherence and unity.
11	Raising awareness of people in disaster affected areas about functions of various social security schemes for community recovery and for building resilience, and about how community people can improve and benefit from the schemes in disaster recovery.
12	Sharing and learning practices and experiences of how better-off areas can assist disaster affected areas.

5. Environment and Eco-System Restoration

5.1 Conservation and utilization of natural resources

- Land, water and vegetation are indispensable natural resources supporting the human beings existence and economic and social development.
- Disasters cause severe damage and loss to the human society and also bring drastic changes and destruction to land, water and vegetation. Catastrophic disasters may completely change the landscape: mountains removed, river courses changed, vegetation in large area destroyed, and inhabitants killed or forced to migrate.
- Droughts, flash floods, tsunamis or other disasters may destroy farmlands, water supplies, and crops, for which farmers can not live without.
- Natural hazards are the direct risks to destruct natural resources, but human activities can also contribute to the destructions.
- Studies approved that over and irregular use of water for farming may lead to salinity, desertification and even droughts; over-cultivation on steep mountains may intensify soil erosion and landslides; over-grazing could severely damage pastures; construction on geological fragile grounds may cause land sink and building collapse, etc.
- Increased extreme weather events today have been confirmed partially as results of greenhouse gas emissions contributed by human activities in its many years accumulation.
- We can not secure sustainable development without protection and conservation of land, water, vegetation and other natural resources. We have to scrutinize our development concepts, patterns and methods in linkage with intensified disaster risks.
- In disaster recovery planning, respective institutions must draw lessons and experiences from their past development activities and take DRR measures in the recovery process.
- General DRR measures in this sector may include: a) rationally conserve and use land, water and vegetation; b) retrain human activities that may result in disruption of the Nature; c) plan and regulate our utilizing natural resources on sustainable basis; and d) design and implement the recovery projects to have least possible impact over deterioration of environment and eco-system.
- Appropriate local technologies of conservation and sustainable utilization of natural resources will be included in the DRR measures.

5.2 Eco-system restoration

- Eco-systems are composed of forests, pastures, wetlands, deserts, as well as rivers, lakes and coastlines. Disasters disrupt eco-systems and threaten lives of wild inhabitants of animals and plants.

- Human beings are directly or indirectly affected in the process as we can not live without the support of eco-systems.
- Due to over expansion of population and human activities in some areas, eco-systems are being degraded: vegetation coverage is shrinking, glaciers are withdrawn and rare animals and plants are being endangered or extinct.
- The degraded eco-systems will lead to disasters either to erupt in sudden or to slowly develop. In turn disasters will disrupt eco-systems. In both circumstances, there will be negative impacts on human development. It just runs into a vicious cycle.
- We have to take these facts into consideration in disaster recovery, and take DRR actions and build our resilience. To be specific, disaster recovery programmes will be formed based on environment assessment and protection, especially for large size projects and projects at environmental sensitive and eco-system fragile zones.
- We will be alert if our disaster recovery operations and development projects may impede functions of eco-systems.
- Disaster recovery will be forward looking, and actions will be taken to incorporate climate change adaptation and mitigation measures in the recovery process.
- Disaster-damaged eco-systems should be repaired or restored. Actions fall in this field may include: a) abandon farming for forest growing, b) stop over-grazing to restore grassland, c) demolish man-made embankments to recover river channels, wetlands or lakes, etc. Proper arrangements will be made for people affected by these actions.

Study 7: Recovery Activities in Forest Sector for Cyclone Nargis 2008

Recovery Plan by the Ministry of Forest after Cyclone Nargis in 2008 in Myanmar

- Forest restoration activities
- Establishment of disaster prevention zones
- Expanding private tree plantations
- Promoting community forestry
- Involving local communities in mangrove planting along riverbanks
- Windbreaks
- Reviving livelihoods of local populations
- Awareness-raising and extension

Source: <Cyclone Nargis 2008: Rehabilitation in Myanmar>
Government of Myanmar, UNISDR and IPR, 2010

- The most economic method for eco-system restoration could be of letting the eco-systems to heal themselves without external intervention.
- However, for severely damaged eco-systems threatening safety of people's lives, interventions may have to be taken to reduce the risks and to recover the natural functions soonest.
- In the APEC region, large numbers of people are living in places where geographic conditions and eco-systems are not so gentle and mild. This urges officials and people there to take harder efforts to protect the systems being degraded and to build resilience against disaster risks.
- Natural heritages belong to eco-systems, which are identified by scientists for conservation and observation. Different to cultural heritages, natural heritages to be restored by human may hardly retain the original feature.
- Natural heritages and landscapes destroyed by disasters would be reserved without human intervention, as they demonstrate movement and change of the Nature.

5.3 Restoration of environment protection facilities

- Environment protection facilities are systems for monitoring, control or treatment of solid wastes, sewage water and air pollution. These wastes become man-made hazards that may contribute to disasters.
- The environment protection facilities may be damaged in disasters. The retrofitting and rebuilding will be planned based on reassessment of the damage and loss and long-term development plans.
- Improvements will be made in restoration of existing environment protection facilities. If not exist, they will be installed.
- Solid waste, sewage water and air pollutants treatments will first consider reducing discharge volume of pollutants or recycled use of the materials.
- People's awareness and actions in reducing creation and release of the pollutants are crucial to environment protection.
- Disaster recovery reassessment in environment protection sector will also review the damaged hospitals, labs and factory facilities that produce or store chemical and radioactive substances and medical wastes. Leaking such substances or wastes will threaten people's health and undermine disaster recovery process.
- Policies will be made not to support factories of making severe pollutants unless pollution control facilities are built and DRR measures are taken in the reconstruction. National and local emission standards will be followed by the rebuilt factories.
- In disaster recovery process, support should be provided for clean energy applications for commercial and civil use and for reducing greenhouse gas emissions wherever possible.
- Disaster risks will stay with human-beings all time, not only because of natural hazards we have to live with, but also of contribution people made

that have intensified the risks. In both cases, we have responsibilities to reduce disaster risks and not let them undermine our development.

Table 5: CBN – Environment and Eco-System Restoration

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Learning knowledge through various ways (training, formal education, publicity, or social events) about linkages of: a) human beings, disasters and disaster risks; and b) environment, eco-systems and disasters. Increase of public awareness about pursuit for sustainable development and for building resilience against disaster risks.
2	Planning officials in economic sectors together with environment protection staff to review major development modalities to understand what kind of development projects and actions may contribute to intensified disaster risks or degradation of eco-systems, and what kind may be supportive to sustainable development and to people's benefits in long-term.
3	In relation with 2 above, in-depth studies to be carried out about newly happened disasters to investigate if environment and eco-system degradations contributed to the disasters; or if human activities had intensified disaster risks in relation to the degradations, then triggered the disasters.
4	Capacity building programmes to be implemented for development agencies about conservation and utilization of land, water and vegetation along with public awareness increase activities, so as to urge increased human activities that destruct eco-systems and lead to environment crisis.
5	Training of professionals in charge of reconstruction of environment facilities to serve the immediate needs of environment protection in the recovery as well as to bring long-term benefits to people and communities.
6	Two types of training to be organized for disaster recovery planning in relation to sustainable development: one for managerial staff on formulation of legislation, policy, strategy and system, design of respective recovery programmes, etc; and one for technical staff on implementation and supervision of the planned recovery projects. Both training will discuss incorporation of DRR measures into disaster recovery process.
7	Study techniques of disaster risk monitoring that may lead to secondary disasters, and brainstorm on actions to reduce the risks based on post-disaster reassessment, for which time and condition of the occurrence and possible destruction and loss will be estimated and quantified.
8	Training to be organized for people and community leaders living closely to or within natural reserves, including buffer zones, to share to them knowledge of strategies and methods for protection and restoration of eco-systems in the recovery. The training is also related to incorporation of DRR measures into eco-system recovery.

6. People-Based Recovery

6.1 People-Based Recovery

- Post-disaster recovery is not a simple process of rebuilding houses, restoration of electricity and water supply, or reopen of public traffic. We understand the recovery activities are to help disaster affected people get recovered physically and mentally with improved capabilities to respond to future disasters.
- Post-disaster recovery planning will consider first of all the basic interests of people. What are their fundamental needs? How would they wish to rebuild their homeland? Why DRR measures in the recovery can empower people to build resilience?
- To understand needs of disaster survivors, human recovery needs assessment (HRNA) may be introduced to understand perceptions of the affected people about the recovery.
- To deal with these concerns, Principle of “People-Based Recovery” (PBR) is recommended. PBR has three main components or levels: a) people’s participation in the recovery planning and rebuilding activities, b) people’s empowerment through the recovery process in terms of the resilience and capability, and c) people’s benefits eventually from the recovery.
- Government officials and community leaders are in the key positions of disaster recovery process. However, all the recovery projects and activities are to be carried out by people through their hands and minds. Without people’s active participation, the recovery will not be achieved.
- From reassessment to planning, from policy design to making decisions, from rebuilding schools to farmland restoration, in all these activities, people’s participation is required, and their concerns, comments and suggestions will be respected and reflected.
- To achieve “Build Back Better” and to ensure DRR measures be incorporated in the recovery, people need to be empowered to raise awareness and to build resilience. Only when people are capable to cope with disaster risks, they will become safer.
- PBR aims that when disaster recovery process is over, community facilities and resident houses are rebuilt based on new designs against disaster risks; people’s economic capabilities are improved with secured income source; and people’s resilience is stronger against disaster risks. Then, their development becomes sustainable.
- People have developed indigenous knowledge in coping with disasters for thousands years, which need to be integrated with modern technologies and sciences. Useful practices and measures can be found in dealing with disaster risks in community traditions, family store-telling and folklores in disaster affected areas.

6.2 Gender concern

- Due to physical difference, men and women's response to disasters are different though they have similarities. So their different reactions and actions to disaster risks are to be noted by the planners and managers.
- In terms of vulnerability to disasters, people tend to think that women are weak in general sense to respond to emergencies, such as to remove heavy objects, to rescue lives, etc.
- But women's capabilities to deal with disasters are unique, however sometimes are over looked, for instance their carefulness to take care of family members, young and old, their thoughtfulness in planning of disaster preparedness activities, etc.
- About issues of disaster recovery, men would argue hard to recover farmland first while women would insist on rebuilding the house; men may think of going out to make a living, but women might prefer of having some income generation activities at home.
- Male and female's different needs and perceptions in disaster recovery contexts should be noted in order to take a balanced gender approach in the recovery process. Recognition of difference between men and women is critical in the planning and implementation as well as in the capacity building exercises.
- Having a mind of gender sensitivity, the planning process of community recovery must include both men and women, who share and express their views and justifications about the recovery before making decisions.
- Special arrangements will be made to take care of women's needs and thoughts in the recovery programmes. They should access to resources and training opportunities in livelihood recovery, income generation activities, house retrofitting and rebuilding, children's nursing, etc. Also DRR measures to be taken will be based on gender sensitivity.
- Capacity building activities to empower people in disaster recovery will be designed based on different needs of men and women. Equal opportunity and active participation of men and women will be ensured.

Study 8: Gender Issues in Disaster Recovery

Drawing from reports, evaluations, research studies, and consultations, the IRP and UNDP document has chosen four key issues and sub issues:

Issue 1: Mainstreaming gender in disaster recovery institutions and organizations

Sub-Issue 1: Increasing the representation of women in post-disaster decision-making

Sub-issue 2: Putting gender-sensitive disaster recovery policies and programs in place

Sub-issue 3: Conducting gender training to raise awareness of policy-makers and planners across sectors

Sub-Issue 4: Using gender analysis tools to review and develop policies and programs across sectors

Sub-Issue 5: Sustaining an enabling and positive environment for gender mainstreaming

Issue 2: Identifying gender specific recovery needs

Sub-Issue 1: The need for gender-specific data

Sub-Issue 2: Women's engagement in defining needs

Sub-Issue 3: Developing gender-sensitive information sharing mechanisms

Issue 3: Engaging women in recovery initiatives

Sub-issue 1: Develop women's capacity to be recovery leaders

Sub-issue 2: Engaging with and supporting women's collectives

Sub-Issue 3: Rebuilding Community Spaces

Sub-Issue 4: Creating gender-specific communication forums

Sub-Issue 5: Developing the capacity of local women leaders

Issue 4: Facilitating a gender-balanced economic recovery

Sub-Issue 1: Lack of attention to the gendered division of labor

Sub-Issue 2: Gender bias in paid reconstruction work

Sub-Issue 3: Strengthening existing income-earning activities

Source: <Guidance Note on Recovery – Gender>
UNDP, UNISDR and IRP 2010

6.3 Public-private-partnership

- Public-private-partnership (PPP) refers to a cooperation modality.

- In disaster recovery process, PPP may have two dimensions: a) enterprises from non disaster affected areas provide assistance in joining governments and social forces in rebuilding facilities and services; and b) enterprises in the affected areas receive assistance to rehabilitate or rebuild production or services in cooperation with the public sector.
- The partnership for the assistance and actions may be in various forms, such as training the technicians, consultancy service, market support, provision of job opportunities, donation of funds and materials, etc.
- In response to the recovery challenges, forces from the public sector and the private sector can mutually support each other in rebuilding community public services or in restoring local business. PPP modality can also be applied in disaster risk reduction field.
- It needs to be understood by public servants and entrepreneurs that community safety and working site safety are both at interests of the public and business. Risk awareness and resilience building to disasters are trans-boundary.

Study 9: Establishing Successful Public-Private-Partnership

Business has proven that it can and does play a fundamental role in building community resilience towards disasters. It provides resources, expertise, many essential services, and operates critical infrastructure on which a community depends.

In recent years we have seen an increasingly manifest interest of the public and the private sector in each other and their declared willingness to cooperate more and better. The current model of private-sector engagement in disaster management is largely focused on response and recovery and generally involves private sector actors contributing their products, skills, and expertise to response operations on a pro-bono basis. The challenge is to build upon the success to date in pro-bono collaborations and develop deeper engagement with the private sector involving companies as investors and partners in long-term efforts to build community resilience.

Source: <Public-Private Partnerships and Disaster Resilience>
APEC Emergency Preparedness Working Group, August 2010

6.4 Poverty alleviation to empower people

- Economic poor has been considered major type of poverty. Many actions and policies have focused on income generation and provision of funds and materials to address poverty issues in addition to relief.

- Poverty can also be socially rooted, such as lack of basic education, longtime illness, being marginalized in communities or societies, etc. In understanding this, integration of social and economic measures in poverty reduction will be pursued for.
- Recent studies also discovered that poverty has a close linkage with disasters. People, families and communities living in natural harsh and disaster prone areas would be poor. These areas have limited resources and crucial in climatic and geographic conditions for production and for living. Disasters happen frequently there.
- Vulnerabilities of people and communities to disaster risks have been attributed to their poverty causes. People have little means to resist to disaster risks, and communities have little resources to protect the people. Disaster rooted poverty may be of another type.
- Better-off people can also become poor even they live in areas without many natural hazards. Other types of disaster could wipe out their properties, such as household fires, traffic accidents, HIV/AIDS, and if social security system is weak. The impact of the latter on the society may be smaller, but awareness raising and building resilience to reduce disaster risks are equally necessary for these people.
- During disaster recovery process, efforts will be made to have better understanding of poverty issues and to empower disaster survivors in holistic manner. Capacity building programmes are to be designed to help them build resilience.
- Government officials and community leaders will assist each poor household to understand their vulnerabilities to disasters, to develop their family recovery plans and to build their resilience, supplemented by external assistance if available.

6.5 People access to disaster recovery information

- Public information plays important role in disaster recovery as it is in disaster emergency.
- Information dissemination to and access by people can be in many ways: radio, TV, the Internet, newspapers, telephone, mobile phone, publication and press, etc.
- Lack of information about the recovery process, disaster survivors would be disappointed or even despair to face loss of their family members and destruction of houses and household belongings, and even to lose their hope for life.
- People access to the recovery information about funding aid and policy support, e.g., re-employment, land entitlement, house rebuilding programme, will greatly assist them in support to and participation in the local recovery process, in which they see hopes and opportunities.
- One of the roles of the information agencies, no matter governmental or

commercial, is fund raising, in which they can mobilize social support to assist disaster affected people in the recovery operations.

- The media also plays an important role in public awareness increase about disaster risk reduction in the recovery process. Good cases, best practices, lessons and experiences in disaster recovery elsewhere can be introduced and shared through the media.

6.6 Special care for the vulnerable people

- Disaster survivors are the vulnerable people, who are also weak in post-disaster recovery. Compared to others they have more losses in disasters, such houses, means of production, household belongings, etc., but they have limited resources to recover.
- Their family members may be killed, who perhaps are the bread-earners of the family, or heavily wounded, for which extra budget is required from the family for treatment.
- Pregnant women, children, the aged people, the disabled and migrant labors are vulnerable people to disasters and disaster risks.
- Special solutions would be required to care and empower these people to address their needs in disaster recovery, such as temporary schools and nurseries in communities, nutrition schemes for the infants, sanitation measures to aid women and the pregnant female, special care to single old people and orphans, policies for the poor to access to funding for house reconstruction, etc.

Study 10: Care of Disadvantaged People

Lessons learned from the Kobe Earthquake

- 44% of death casualty: over 65 years old;
- More women than men killed: 2,713 men vs. 3,680 women; and
- Destruction of communities resulted in more than 200 lonely deaths without terminal care by their families

Countermeasures to cope with include revision of Compensation Framework, revision of Local Tax Law, Fund of 9 billion US\$ established, and new support framework of livelihood restoration fund loans, increased rent subsidies, and assistance for voluntary activities, events to revitalize shopping arcades, community building, etc.

Source: <Disaster Reconstruction in Japan: Lessons Learned from the Kobe Earthquake>

Etsuko Tsunozaki, ADRC, 2006

- Leading officials of the affected areas, particularly those working at grassroot level, may also be vulnerable people during the recovery operations due to heavy pressures in work, plus family losses. Special arrangements will be made for care of their health, including mental health, and for assigning reasonable workloads.
- Legal aid to disadvantaged people is required as disasters may change social relationship, such as property inheritance, adoption of children, land tenant, etc. Legal advice can help them understand and protect their rights and solve disputes in support of disaster recovery process.

Table 6: CBN – People-Based Recovery

Capacity Building Needs (CBN) to Incorporate DRR Measures into Recovery	
1	Further review of the people’s expectations and capabilities following the reassessments of people’s needs in the recovery.
2	Awareness increase for government officials to understand importance of people’s participation and empowerment in the recovery process in relation to objectives of the rehabilitation and reconstruction programmes.
3	Practice and experience learning on how to encourage people’s participation in planning, community decision-making, implementation and monitoring of the recovery projects, and on how to empower people in the recovery process to build resilience.
4	Understanding gender sensitivity and concerns in disaster recovery and plan of targeted projects for women, such as care of children, house-based income generation, family disaster preparedness, etc.
5	Coordination meetings for enterprises and government institutions to develop strategies for building partnership to address the recovery challenges and to workout measures to reduce disaster risks in communities and working sites.
6	Officials in charge of poverty alleviation to study linkage between disaster risks and poverty, and about how to formulate actions and policies for poverty reduction and for building resilience against disasters.
7	Training government officials and the media professionals on information dissemination for social mobilization to support local disaster rehabilitation and reconstruction and on awareness increase about DRR in the recovery.
8	Discussions between community leaders and vulnerable people to design special projects to care and assist the vulnerable groups in the recovery, and to develop activities to empower these people in coping with disaster risks.

ANNEX

A. List of Reference Papers

Note: Order based on time of publication.

1. Disaster Management – A Disaster Manager’s Handbook (W. Nick Carter, 1992)
2. Disasters by Design – A Reassessment of Natural Hazards in the United States (Dennis S. Mileti, 1999)
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C. List of Acronyms

ADRC:	Asia Disaster Reduction Center
ADPC:	Asia Disaster Preparedness Center
APEC:	Asia and Pacific Economic Cooperation
ASCE:	American Society of Civil Engineers
BCP:	Business Continuity Plan
CBN:	Capacity Building Needs
CEO:	Chief Executive Officer
CFR:	Code of Federal Regulations
DRR:	Disaster Risk Reduction
FEMA:	Federal Emergency Management Agency
GDP:	Gross Domestic Product
HFA:	Hyogo Framework for Action
HRNA:	Human Recovery Needs Assessment
IRP:	International Recovery Platform
ILO:	International Labor Organization
IUCN:	International Union for Conservation of Nature
NGO:	Non-Governmental Organization
PBR:	People-Based Recovery
PPP:	Public-Private-Partnership
SFHA:	Special Flood Hazard Area
SRFF:	Standby Recovery Financing Facility
UN:	United Nations
UNDP:	United Nations Development Programme
UNESCO:	United Nations Education, Science and Culture Organization
UNISDR:	United Nations International Strategy for Disaster Reduction

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