AUDIT COURSE - DISASTER MANAGEMENT

DAMAGE ASSESSMENT

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INTRODUCTION

Damage assessment is an important tool for surveying and prospective analysis of disasters to assimilate the extent of impact of a disaster. This forms the basis for future disaster preparedness and preventive planning. It is essential in determining: what happened, what the effects were, which areas were hardest hit, what situations must be given priority and what types of assistance are needed. Emergency response can be more effective, equipment and personnel can be better used, and help can be provided quicker if a thorough damage assessment is performed beforehand.

The basic objectives of damage assessment could be

 To make a rapid assessment of areas affected to know the extent of impact for purpose of immediate rescue and relief operations;

 To prepare estimates for the amount of relief to be provided and the mode of relief, be it food, clothing, medicines, shelter or other essential commodities;

 To make a detailed assessment regarding requirements for long-term relief and rehabilitation planning; and

 To identify focus areas for the purpose of 'retrofitting' actions in similar future situations.

Damage assessment is also a multi-disciplinary exercise involving officials from a cross section of experts and administrators from police, fire, health, engineering, public works, social scientists, non-profit organisations, community etc. to get a comprehensive account of losses for adequate future mitigation planning. Some of the data required is already available in the form of baseline data (maps, population statistic etc.), which however must also be supplemented by real time information.

ESSENTIAL FEATURES OF DAMAGE ASSESSMENT

Flow of Information

There is a clearly defined sequence to managing information:

 Converting raw data to useful information;

 Information input;

 Sorting (grading, collating, discarding what is unreliable);

 Evaluation;

 Decision making;

 Information output (dissemination); and

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- Action

LEVELS OF ASSESSMENT

Damage Assessment is required at two basic levels of intervention. Firstly, it is required for emergency relief measures in which quick assessment of damage is the basis for the amount of relief material and food stocks that reach the disaster area. This type of an assessment is called Rapid Damage Assessment. At the second level would be, a detailed technical analysis of damage for long-term restoration and rehabilitation works. From a long-term perspective, damage assessment scrutinizes the mechanisms of failure that took place during the disaster. It is called Detailed Damage Assessment. These studies are very useful for all prevention and mitigation efforts for disasters in the future.

Rapid Damage Assessment

The official agency for reporting estimates of disaster damages is usually the Revenue and Relief Department of the state government, as they are also the authority for distributing relief to affected persons. As usual, there is a hierarchy of officials who report from the lowest level of Villages/Panchayats through Blocks/Revenue Circles, Tehsils/ Talukas, and Sub-divisions and finally to the districts and then to the state headquarters. However, relief agencies including NGOs also have their own damage assessment systems and teams to carry out the assessments.

The basic items covered in rapid assessment are:

- Name of the place
- The causative disasters
- Date and time of disaster strike
- Area affected
- Total number of villages or neighbourhoods affected
- Total population
- Population affected in terms of number of people and households
- Details of local bodies (panchayats or wards/municipalities) affected
- In case of floods, area still under water
- In case of an earthquake or cyclone, buildings damaged
- Infrastructure affected (transportation, power, social infrastructure
- Estimated number of deaths and injuries

- Estimated loss of property
- Closest sources of emergency aid.

Detailed Damage Assessment

Detailed damage assessment goes further than the rapid assessment, and it includes the following additional information regarding disaster damage:

- Verified number of human lives lost and number of injuries
- Livestock lost

a) Number

b) Estimated Value

- Details of damage to crops in hectares and estimated loss of produce in quintals

a) Hectares completely damaged

b) Hectares partially damaged

c) Hectares likely to be replanted or re-sown

d) Extent affected in percentage

e) Crops lost in quintals

f) Estimated value of crops lost in rupees

- Houses damaged or destroyed

a) Number

b) Estimated value

- Loss to public works and utilities including local bodies property

a) Name of the work and utility

b) Nature of damage

c) Estimated value of damage

d) Estimated cost to restore work or/and utility

- Rough estimate of the total financial loss in rupees

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TYPES OF DAMAGES

In order to perform effective damage assessment, one must know various types of damages that are required to be taken into consideration.

Damage to Buildings

The damage caused to buildings by the various disasters may be categorised as loss under the following heads:

- The loss of the main building
- The loss due to failure of other components whose damage is attributed to the main building damage
- Area covered by the collapsed structure
- Death or injury to life due to building collapse
- Loss incurred in terms of debris removal and restoration
- Loss of revenue during the idle period

Damage to house structure can cause resultant damage to household goods, artisan assets and other productive assets stored in the house. These need to be accounted for in terms of average value of damage per household, in rupees.

Damage to Land

Damage to land due to disaster could be short-term damage, as in land rendered useless due to coverage by debris of silt, and loss of standing crops, or else it could be longterm damage as loss of productivity of land. The most important in the immediate post disaster scenario is the aspect of agricultural loss through land destabilisation.

Crop damage is assessed in terms of percentage of households reporting damage under the following heads:

- Area damaged per household (ha.)
- Production loss per hectare (quintals)
- Production loss per household (quintals)
- Value of production loss per hectare (Rs.)
- Value of production loss per household (Rs.)

Impact on Human Lives

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The most disastrous and immediate impact on human lives is in terms of loss of lives by deaths that may occur due to the direct impact of the disaster, or through indirect impact as in the case of building collapses, fires etc. Injuries are the second level of impact of a disaster on human lives, and result from the same sources as deaths. The impact on lives in terms of deaths and injuries has to be estimated not only in numbers, but also in terms of the expenses incurred due to death or injury, as also the loss of productivity of the persons affected due to death, illnesses or disability, etc.

Once again, the impact of the sickness due to disaster is felt in terms of expenditure on treatment and loss of employment during the sickness period. This may be assessed under the following heads:

- Total number of sample households
- Percentage of households reporting sickness, and the kind of sickness
- Average number of persons reporting sickness per household
- Average duration of sickness (days)
- Average expenditure on treatment per household (Rupees)
- Average employment lost per household (days)
- Average loss of income per household (Rupees)

Damage to Live Stock

The damage to livestock, namely cattle, other animals and poultry, which are a very important asset for rural households, is generally assessed in terms of the number of households reporting loss, and the per household value of livestock lost in terms of rupees.

DAMAGE REPORTS

The information at various stages of the disaster assessment process is in the form of different reports. The reports vary in terms of their timing and detailing.

The Major Types of Reports are**:**

Flash Report (sometimes called First Information Report or SOS Report)

Flash Report should be submitted very quickly. Its purpose is simply to confirm that the disaster has taken place and that steps are being taken to cope with it and to give a first indication of the sort of external relief that might be required, and to inform the sources that further reports would follow shortly.

Initial Report

Initial Report should follow the flash report as soon as possible (within a matter of hours).

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Its purpose is to inform the recipients of the severity of the disaster and, more importantly, by relating the severity of the disaster to coping capacities, provide the information needed to start mobilising resources from outside the affected area for timely help.

The report should therefore, briefly summarise:

- The severity of the disaster (without necessarily providing precise figures)
- Actions being taken locally
- Local coping capacities (including locally available resources)
- The immediate priorities for external relief, where it is required and in approximately what quantities
- The best logistical means of delivering that relief, and
- a forecast of possible future developments including new risks

Interim Report

Interim Report should build on earlier reports providing additional and more precise information. To begin with interim reports should be submitted every 24 hours at the same time every day (the time being determined by the recipient according to needs) and thereafter, at intervals decided by the recipient. As time goes by, the emphasis of interim reports shifts from the needs for relief to the needs for rehabilitation and reconstruction (for example, repairs to damaged structures, restoration of agriculture, animal husbandry, fisheries and industrial production)

Specialist or Technical Reports

They provide supplementary technical details by/for specialists (for example, engineers and officials responsible for emergency health care).

Final Report

This will be a summary of:

- What happened;
- How the response was managed; and
- The lessons learned

CONCLUSION

Damage assessment is an important tool for information regarding the extent of a disaster's impact, and forms the basis for immediate rescue and relief operations, as well as long-term rehabilitation

and recovery programmes. Rapid assessment techniques are applied for quick assessment and immediate relief. Detailed damage assessment is a follow up activity that is more elaborate and helps plan longer-term interventions. Damage is mainly in terms of Human lives lost; Injuries, Disease, Livestock lost, Land and its attributes such as crops and structures, Infrastructure, including buildings and roads etc. Assessment of damage is required in terms of area covered, intensity of damage, households affected, and finally all this has to be converted in terms of economic loss, and represented in terms of rupees lost and required for restorative activities. Damage assessment reports are prepared at various stages of the disaster response process, and provide various levels of details depending on the timing of assessment. It is always advisable to have advance preparedness of damage assessment and reporting systems, and to have consistency in the approach and the formats of the damage reports. This goes a long way in ensuring good information communication leading to rapid and efficient disaster response.

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