3.1.3 Response

Effectiveness of Proper Emergency Supply Management System (SUMA)

1. Introduction

Effective and Coordinated Emergency Supply not only reduces the impact of disasters in terms of human suffering but also contributes meaningfully to the Rehabilitation/Reconstruction phase of disaster response. The Emergency Supply Management system known as SUMA began formal operations from this perspective in 1992. It was developed in a cooperative fashion with the participation of experts from various Latin American countries, with the support of the Pan American Health Organization, the Regional Office for the Americas of the World Health Organization (PAHO/WHO), the Colombian Red Cross, and financial support from the Government of the Netherlands. The system was designed for the administration of information regarding the entry of health and medical supplies into a country affected by a disaster. Later, SUMA was modified to serve as a management tool for all types of supplies, not only those related to disasters.

Over a period of several years, SUMA has demonstrated its value as a technical tool for the coordination and management of information following both large-scale and small-scale disasters in Latin America and the Caribbean. But SUMA is not merely a simple operational tool. Since its early days, it has evolved into both an indicator and a tool to assure transparency and encourage responsibility during the aftermath of disasters.

2. Functions of SUMA

- Identifies, selects, and classifies humanitarian aid as it arrives.
- Helps to establish priorities regarding supplies, based on the needs of the affected population.
- Provides a "snapshot" of the flow of donations and of remaining needs.
- Facilitates the preparation of reports and other types of news that can be exchanged among humanitarian groups.

3. SUMA's Objective

SUMA's objective is to prevent relief supply management inefficiencies by promoting a systematic approach involving trained staff, sound classification procedures, and a user-friendly, flexible information technology mechanism to ensure that incoming supplies are properly sorted, inventoried, and prioritized at their point of entry. The following steps are taken to maximize supply allocation effectiveness.

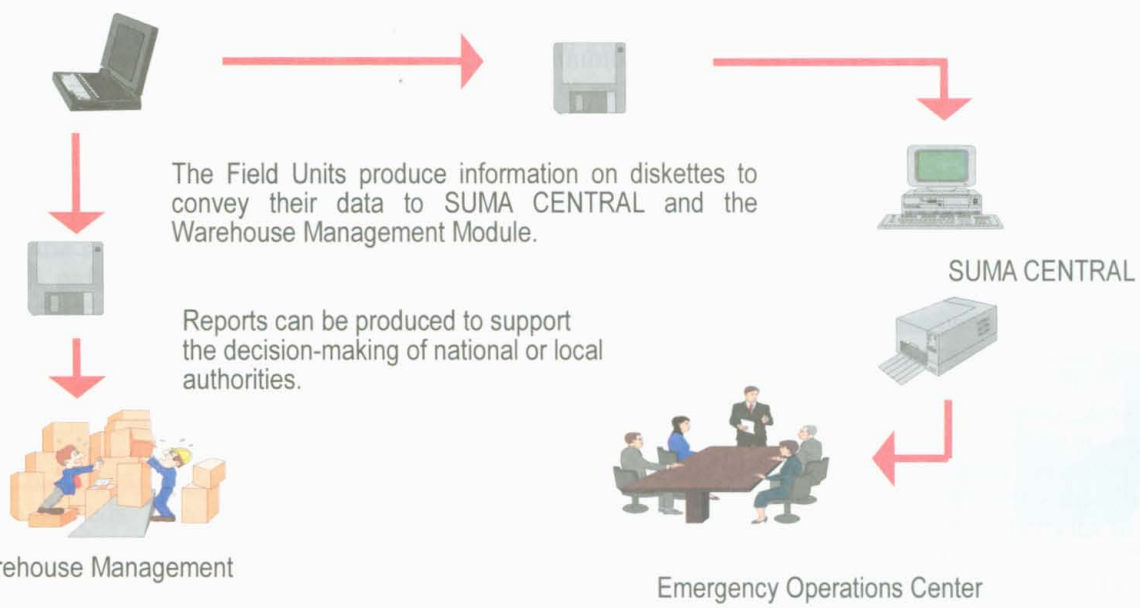
- Trained health staff sort and classify supplies as they arrive.
- Labels are attached to the incoming boxes and/or packages with the following information:
  a) Distribution priority.
  b) Whether the consignment contains health care items, including drugs and other medical supplies.
  c) Whether items need refrigeration.
- An inventory is kept of the valuable items that arrive, based on technical and operational criteria.
- Donations are registered at the point of entry using a computerized system.
- National authorities receive daily reports detailing the name of the donors, the recipients, and the type of supplies provided, etc.
- The country's efficiency is demonstrated by the use of advanced technology.
- Visitors obtain a favorable impression of emergency management efforts.
- Donors are sent an immediate confirmation via fax or e-mail as soon as the supplies have reached their intended recipient.

4. System Components

The system has three levels:
- SUMA CENTRAL
- Field Units
- Warehouse Management

SUMA CENTRAL is designed to operate at emergency management headquarters, i.e., the facilities where national authorities are managing a disaster or emergency.
Field Units are designed to work at the points of entry (e.g., borders, ports), and at local collection centers where supplies arrive during an emergency, such as airports, collection sites, etc.
The Warehouse Management Module is a tool that registers the arrival of supplies at storage centers or warehouses and their departure for distribution. These warehouses receive supplies as well as electronic tracking information sent by the Field Units or SUMA CENTRAL. In this way, institutions can coordinate the internal management of relief supplies or their distribution to other facilities or organizations involved in disaster relief efforts.

The following chart provides a functional vision of the system



- **Background**
  Effective and coordinated emergency supply reduces the impact of disasters in terms of human sufferings as well as contributing to the rehabilitation/reconstruction phase of disaster response.

- **Objective**
  Development and spread of an effective supply management system (SUMA).

- **Term/Time Frame**
  Development of SUMA in 1992.

- **Activities Undertaken**
  Training program for local government officials to implement SUMA in 2003.

- **Major Achievements**
  Well organized logistics for distributing emergency supplies

- **Contact Details**
  Pan American Health Organization, Regional Office for the Americas of the World Health Organization (PAHO/WHO) / WHO West Pacific Regional Office (WPRO)

3.1.4 Rehabilitation/Reconstruction

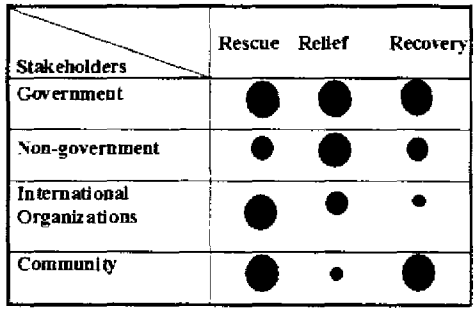
Post-Disaster Reconstruction and Recovery: Issues and Best Practices

Background

Development is a dynamic process, and disasters offer the opportunity to vitalize and/or revitalize this process, especially in the generation of local economies and the upgrading of livelihoods and living conditions. This is especially relevant to the context of the developing nations Post-disaster reconstruction and rehabilitation is a complex issue with several dimensions. Government, nongovernmental and international organizations have their own stakes in disaster recovery programs, and links must be established among them, as well as with the community. In other words, post-disaster rehabilitation and recovery programs should be seen as opportunities to work with communities and serve local needs.

Post-Disaster Phases and Stakeholders

The standard time frames for rescue, relief and rehabilitation are defined as seven days, three months and five years respectively. The rescue operation starts with local residents immediately after the earthquake, and is later supported by trained and skilled staff from the Search and Rescue (S-R) government departments. These activities can be complemented by non-governmental organizations (NGOs). International Relief Teams arrive in the later stages, usually after 24 hours, depending on accessibility, and political relations with the country. The rescue phase usually lasts for the first 48 hours after a disaster when the rate of survival of trapped victims is high.



The relief phase follows immediately after the rescue phase, and may last between one and three months depending on the severity of the earthquake and the resources of the government. Government is usually the central point, followed by additional resources from NGOs and international organizations.

During the recovery phase, social and other infrastructure is restored and the economy revitalized. The rehabilitation/reconstruction phase typically starts at the end of the relief phase and may last for several years. The short-term plans for the recovery process are clearance of debris, building housing units, and restoration of lifelines and infrastructure, while the long-term objective is to build a safer and sustainable livelihood. Past experiences show that these efforts are sustainable only with community-government partnership, while the role of NGOs and international organizations is reduced after a certain period.

The Gujarat Experience: Background

The earthquake of 26 January 2001 (magnitude 7.7, USGS) devastated Gujarat State in Western India with an unprecedented and widespread loss of life and property. More than 13,000 people lost their lives, and thousands were injured (GSDMA, 2002). The earthquake affected an area stretching over more than 400 km, including urban, semi-urban and rural areas. Several villages close to the epicenter were completely destroyed. Over 300,000 buildings collapsed and more than twice that number were severely damaged. This was a tragic blow to a region that was suffering from drought and the aftermath of a cyclone in the previous three years.

After the earthquake, the Sustainable Environment and Ecological Development Society (SEEDS), NGOs Kobe, the United Nations Centre for Regional Development (UNCRD), and the Earthquake Disaster Mitigation Research Center (EDM) started a joint reconstruction and recovery program in a village called Patanka in the Patan district of Gujarat. A project called PNY (Patanka Navjivan Yojna) was formulated. PNY was conceived as a model program right from its inception stage. It sought to empower the affected community to such an extent that it would become sufficiently resilient against any future disasters. It attempted to link immediate response in the form of relief to mainstream development. An important

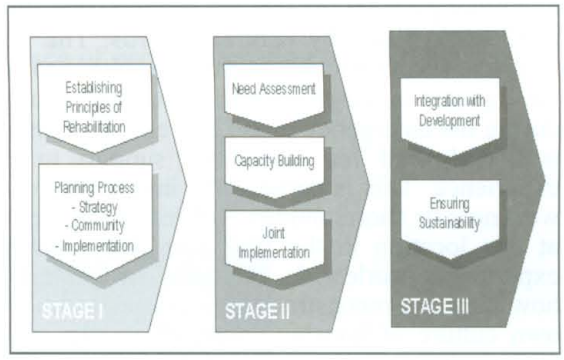
aspect of the initiative was to establish a framework of mutual cooperation among different stakeholders in the post-disaster scenario. Most importantly, it aimed at successively reducing the role of external agencies in local rehabilitation action until the point at which the local community completely took over the functions so far performed only by the external agency. The work was done by a Project Team, which consisted of representatives of the different organizations listed above.

The Gujarat Experience: Process of Reconstruction and Rehabilitation

The Process of Rehabilitation had three major stages: I: Principles and Planning, II: Implementation and III: Ensuring Sustainability.

Stage I: Principles and Planning

The first task was setting up the basic principles for planning the rehabilitation intervention. The intervention had to be participatory, with a gradual increase in the involvement of the community. The program should be flexible with sufficient buffers for time and resources allowed in the overall project schedule. Rehabilitation should be empowering. The Project Team would not, and should not, remain with the community forever. In such a case, the community who were the first responders should be sufficiently equipped to cater to their immediate needs. A well-planned rehabilitation exercise could significantly increase the capacity of the community for a more effective response.



Incorporating the principles stated above, an overall plan evolved. This plan had three parts: the Strategy Plan, the Community Action Plan and the Implementation Plan. The role of the Project Team was to facilitate the reconstruction process. The composition of the team was therefore very important.

Stage II: Implementation

This Implementation Stage of the project consisted of three steps:
(1) Need Assessment, (2) Capacity Building, and (3) Implementation. In Step 1, emphasis was placed on the following features: (1) recognizing the community's needs, 2) prioritization of needs as per the available resources, and 3) translating needs into appropriate action jointly with the community. The role of government at this stage of the exercise provided a recognized legal basis for working in the community. Step 2 aimed to translate the plan into action. Step 3 focused on joint implementation. Project implementation components include reconstruction of houses and infrastructure as well as training programs. One significant part of the training program was the half-size shake-table testing with different building materials, which aimed to increase people's confidence in earthquake-resistant construction practices.

Stage III: Ensuing Sustainability

The effort initiated by the Project Team needed to be sustainable long after the interventions were over. In effect, intervention should be designed to ensure that the community was able to take care of its development needs and was resilient against future disasters. For this, strengthening local institutions was necessary.

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Iran

Demonstrations and Training to Raise Community Awareness and Build Capacity for Safer Housing in Bam

The city of Bam in Iran was struck by an earthquake on 26 December 2003 that killed more than 30,000 people, rendered more than 75,000 people homeless and severely damaged or destroyed about 85% of the houses, commercial units, health facilities and administrative buildings in the city and surrounding villages. The huge loss of life in the earthquake, which was of moderate intensity, is considered to be due to unsafe houses. It is widely acknowledged that prevailing construction practices were not compatible with the seismic hazard faced by the area. Despite the serious effect of earthquake-caused disasters on the development of the country there is still a lack of effective implementation of preventive and mitigation measures though technological knowledge. Building a culture of safety in communities is a major challenge for disaster risk reduction in Iran.

In November 2004, the United Nations Centre for Regional Development Disaster Management Planning Hyogo Office organized a shake-table demonstration and workshop jointly with Citizens towards Overseas Disaster Emergency (CODE), the National Society for Earthquake Technology Nepal (NSET) and other partners in Bam aiming to influence the reconstruction of the city with due consideration given to the risk posed by natural hazards. The workshop and demonstration were timely interventions for effective reconstruction as this was about to commence after 10 months of temporary housing following the disaster. A surge of outside support is usually seen in most disaster sits, including international aid during the emergency phase and exit as soon as victims are housed in temporary shelters. However, there is a real need for continuous support to ensure effective reconstruction enriched by international experience. This is particularly important in regard to the reconstruction of residential dwellings as any weakness or shortcomings will result in potential risk from subsequent earthquakes, which are inevitable at this location in the long run. The consequences of such bad construction have resulted in bitter experiences worldwide, including in Gujarat in India. To this end, the initiative aimed to show people how they can reconstruct their houses in line with earthquake-resistant systems with due respect to their own culture of housing construction. An improvised shake-table demonstration, on-the-job training of masons during construction of model houses, and a workshop on "promoting safer housing in Bam" were the components of the project. The project intended to bring the experience of previous earthquake rehabilitation in different parts of world to Bam. The easy-to-understand demonstration of earthquake-resistant building systems through an improvised shake-table test has the objectives of both raising awareness among ordinary people and appropriate technology transfer through technicians such as masons.

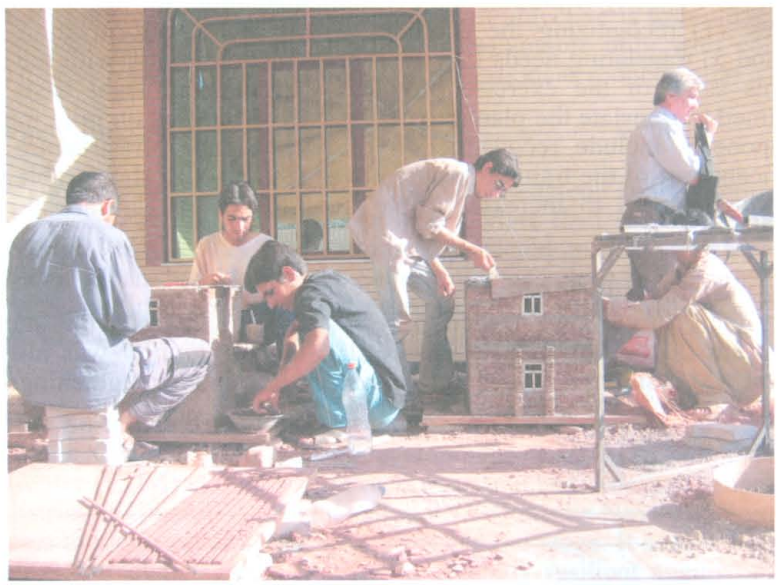

Figure 1: Local masons at on-the-job-training for earthquake resistant construction