DISASTER MITIGATION - THE PHILIPPINE EXPERIENCE

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Introduction

In terms of frequency, strength, and hazardous terrain, allied to prevailing socio-economic conditions, few countries exceed the vulnerability the Philippines has to the impact of tropical cyclones and floods. This is perhaps because of the uniqueness of the Philippines in its warning response strategy.

This report will attempt to discuss in detail the Philippines warning response system by highlighting the process involved in the integration of the science of disaster, communication, public administration, and people's participation in disaster mitigation. It is worth mentioning that disaster management in the Philippines is always viewed in the context of development.

The Philippines as the Most Disaster Prone Country in the World

The Philippines is a nation of 70 million people spread over 7,000 islands of which some 3,000 islands are populated. Regions administered by commissioners are divided into scores of provinces administered by governors, which in turn are comprised of cities and municipalities with elected mayors. At the community level, there are about 45,000 locally autonomous villages, each covering about 5 sq Km, with around 1,000 people and led by an elected village captain.

The Philippines is the most disaster prone country in the world as evident by all statistics. For example, each year warning and preparedness personnel are confronted with around 20 tropical cyclones, of which 8 or so make a landfall on the islands.

The Philippine area of warning responsibility extends from 5 N to 24 N latitude and from 115 E to 133 E longitude Taking into account typical 24, 48, and 72 hour mean forecast errors of about 200 sq Km, 400 sq Km, and 600 sq Km, respectively; it is easily demonstrated that for 72 hour advance forecasts the whole of the Philippines may be subject to threat of cyclone landfall. 48 hours advance forecasts can help prepare most of the more vulnerable central and northern regions, and 24 hour in advance forecasts can help prepare islands and communities. When additional margins are included for the peripheral effects of the weather disturbance and the potential for major forecast error, much of the Philippines is under direct threat from all cyclones that occur in the region.

The Philippine Disaster Management System Civil Defense Administration

By Presidential Decree, the Philippine Government has established a national calamity and disaster preparedness plan, published by the Office of Civil Defense; the plan is frequently updated. This plan provides a highly decentralized organizational and operational disaster preparedness structure, with uniform functional procedures that are implemented by disaster coordinating councils, each with their own emergency operation centers. This national organization extends from a national headquarters in Manila, through regional, provincial, and municipal councils; and down to the lowest autonomous administrative villages. A municipality may be comprised of 20 villages. Due to the generally mountainous and irregular nature of the Philippine topography and huge sea frontage, even adjacent villages may possess distinctly different levels of disaster vulnerability; thus each village deserves its own hazard contingency plan. While progress has been made, the self-reliance ideal of having a local resource trained, largely volunteer staff at the village level, responding to typhoon warnings in accord with documented and rehearsed local contingency plans, is far from being achieved under the current socio-economic circumstances.

Scientific Improved Forecasting System For Disaster Mitigation

The National Disaster Coordinating Council, the highest policy making body of the country for disasters, through its member agencies namely PAGASA, a national weather agency together with the Office of Civil Defense, have made excellent progress in promoting public understanding of its warning system through the conduct of community response surveys and hazard awareness and education programs. Particular emphasis has been placed on the role of the decentralized broadcast media and press in assisting with these warning objectives. One of the guiding principles of the council is that awareness programs must be community specific, hazard specific, and audience specific in terms of potential disaster risk. This requires that the local warnings be similarly patterned and made completely understandable to affected communities.

In consultation with government and non-government bodies and aided by community testing, the National Disaster Coordinating Council has recently modified its national natural disaster warning format, including redesigned public storm signals which have been increased from 3 to 4. These progressive steps have been taken to counter recent trends of increasing loss of life and property damage due to typhoons in the Philippines. The aim is to "impress on the people's minds the preparedness impact of the message", especially by "providing people enough lead time and arousing their awareness according to the ascending order of the gravity of the natural disaster threat."

The modified natural disaster warming format comprises three stages of public warning notices: 1) weather advisories, issued daily at 3 PM, for tropical storms outside or bordering the region of responsibility, but not offering a threat to the Philippines within 36 hours, and 2) severe weather bulletins for tropical cyclone warnings, issued at 5 AM, 11 AM, 5 PM and 11 PM for cyclones posing a threat to the Philippines within 36 hours.

One or more of 4 Public Storm Signals, accompanies the issue of each tropical cyclone warning. These signals are defined as:

No. 1 - A tropical cyclone will affect the locality, with winds of less than 60 km per hour within 36 hours.

No. 2 - A tropical cyclone will affect the locality, with winds of from 60 to 100 km per hour within 24 hours.

No. 3 - A tropical cyclone will affect the locality, with winds of from 100 to 185 km per hour within 18 hours.

No. 4 - A very intense typhoon will affect the locality, with very strong winds in excess of 185 km per hour within 12 hours

The redesigned number system contains three categories of information:

a. The meteorological conditions expected to prevail within stated time limits;
b. The impact of the given range of wind speed on common objects such as trees, crops and structures, to enable the people to perceive the likely disaster effects in terms of their own experience; and
c. Statements of the seriousness of the danger, desired precautionary measures to be taken by the public, and recommendations for disaster preparedness implementation to be taken by disaster agencies.

The full description of each signal, with qualifying notes, is available for consideration by national weather agencies which either do not use such a system for the public, or currently rely on far more complex systems introduced for maritime purposes.

Public Administration Working Towards Disaster Mitigation

The storm signal system does not necessary imply the physical hoisting of signals, but implies public announcements, generally by radio, of the relevant code number of the impending storm. Blasts on warning sirens are used in populated areas. The Civil Defense experience in conducting preparedness seminars in the Philippines is that the public quickly learns to differentiate between the relative threat implied by each signal

through recognition of various preparedness measures; such as suspension of school classes.

The Council utilizes a standard documentary format and flow chart entitled "Typhoon Prediction and Warning Process" which sets out details of its analysis, diagnostic, forecasting, and warning processes and format. This helps facilitate the rapid compilation of updated bulletins for technical and public purposes. These include warnings and advisories for farmers and agricultural industries, and flood forecasting purposes.

People-Centered Program for Disaster Mitigation

Disaster management in the Philippines is an integrated and continuing process guided by a developmental orientation. The National Disaster Coordinating Council believes that people's participation is essential for the success of a disaster mitigation program. Thus instead of treating people as victims, targets, clients, or beneficiaries, the Council treats people as partners in development

This concept is being realized through the enhancement of people's capabilities in disaster management and community organization. IEC materials such as posters and leaflets explaining the enhanced amended public storm signal numbers were developed and widely disseminated by the Council. Considerable illustrated information relating to typhoons and other natural hazards is incorporated in school textbooks. For younger children, a video using animated puppets depicting hazards such as typhoons, floods, earthquakes and volcanic eruptions is used in community hazard campaigns By communicating appropriately designed information to the public, integrated preparedness and response can be achieved for mitigating the impact of a disaster.