DISASTER RISK REDUCTION RESOURCE MANUAL

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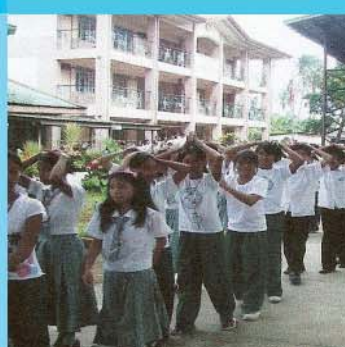
2008

Republic of the Philippines
Department of Education









safer

Disaster Risk Reduction Resource Manual

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Philippines

Disaster Risk Reduction Resource Manual
(Safer Schools Resource Manual)

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Our particular thanks go to *Honorable Jesli A. Lapus,* DepED Secretary, for pushing vigorously the TWG to come up with a resource manual that will reduce, if not eliminate, the loss of lives and properties as a result of natural or human made / induced disaster. We are equally grateful to *Undersecretary Teodosio C. Sangil, Jr.* for inspiring and facilitating the financial requirements in the development of this project.

Special thanks to the Office of the Civil Defense (OCD) in Central Visayas, especially to *Mr. and Mrs. Angel Gaviola* for their inputs, and constructive comments during the plenary sessions, and regional directors, division superintendents and some school heads, that provided information and recommendations that helped validate the veracity and authenticity of this endeavor. We also thank the United Nations Children's Fund (UNICEF) for all their efforts in making this manual a reality through the provision of funds for the final printing of the manuscript, and its support through the services of *Mr. Robin Willison* (Consultant), *Ms. Vicky Eleen Catadman* (Layout Artist), and *Mr. Jason Villena* (Illustrator). We also thank Plan Philippines through *Mr. Baltazar Tribunalo Jr.,* Country Program Advisor on Disaster Risk Reduction, for providing inputs as well as funds for the printing of the final draft of this manual.

This manual was prepared by the Technical Working Group, created through DepED Memo No. 175 s. 2007, on the preparation of DepED Calamity, Disaster and Risk Management and Control Operations Manual. The complete list of the members of the Technical Committee and those others involved in the development of the manual can be found in Annex 6.

Message



I wish to congratulate the Department's Technical Working Group (TWG) on the preparation of the Disaster Risk Reduction Resource Manual led by Undersecretary Teodosio C. Sangil, Jr., Writers from the Bureau of Elementary Education (BEE), Bureau of Secondary Education (BSE), and the Audio Visual Division, Office of the Technical Service; all the Consultants from the Land Bank of the Philippines; Office of the Civil Defense (OCD), Department of National Defense; Department of Science and Technology (DOST) through the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Philippine Institute of Volcanology and Seismology (PHIVOLCS); Philippine National Red Cross (PNRC); United Nations Children's Fund (UNICEF); and the central secretariat from the Office of the Director, Administrative Service, for putting together their hearts, minds and efforts in order to come up with a ready reference and resource manual on disaster risk reduction.

Saving lives and properties is a challenge accepted by all stakeholders in private and governmental entities. As such, aside from the business of providing basic education, the Department of Education is responsible for providing safe teaching-learning facilities and hazard-free environment to the schoolchildren.

This manual, therefore, has been developed to make the Principals, School Heads, Teachers and School Personnel aware, alert and vigilant of the hazards, what to do before, during and after their occurence, in order to reduce their damages and impact to lives and properties.

I hope that this Manual will be useful and beneficial to all.

Jesli A. Lapus
Secretary of the
Department of Education

Message



I am pleased to convey my warm greetings to the Technical Working Group, the writers, the Consultants, and the officials and employees of the Department for having developed the Disaster Risk Reduction Resource Manual of the Department of Education.

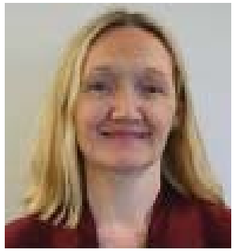
This Manual significantly provides valuable information for the school community's safety amidst the impending threats of natural and manmade hazards and disasters. It specially provides the schoolchildren with key messages so that they can cope with the threats of disasters especially in school.

It is hoped that, through this Manual, our officials in the Department will be encouraged to take further initiatives to meet the challenges of their tasks, and enhance their collective services and professional concerns. The reading public, on the other hand, will know that the department is truly working towards an efficient and caring educational system.

Congratulations!

Teodosio C. Sangil, Jr.
Undersecretary of the
Department of Education

Message



The Philippines is considered one of the most disaster-prone countries. Every year, storms, flash floods, landslides, earthquakes, and volcanic activities batter the country. In disaster or emergency situations, children are very vulnerable to illness and trauma and require special care and attention. During these trying moments, schools offer safety and shelter to those displaced by disasters.

Schools, however, should not only offer safety after a disaster has struck. Our schools should also be ready even before any disaster strikes. Our teachers, school officials, and school children should learn basic life-saving tips. Our schools should be a beacon of safety, and should be an example to the communities which they serve.

The United Nations Children's Fund (UNICEF) is pleased to support the development of this Disaster Risk Reduction Resource Manual. We, at UNICEF, hope that the Department of Education and the whole Philippine school system will use this resource manual to preserve life and health, and make our communities safer for our children.

Vanessa J. Tobin
Representative
United Nations Children's Fund
Philippines Country Office

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Introduction

Disaster Risk Reduction Resource Manual (Safer Schools Resource Manual)

The Department of Education, as mandated by the Constitution is primarily responsible for the education and manpower development of the country and for the formulation, planning, implementation and coordination of the policies, plans, programs and projects in the areas of formal, informal, and non-formal education at the elementary, secondary and the alternative learning system. This mandate also includes supervision of all basic educational institutions, both public and private, as well as the establishment and maintenance of a complete, adequate and integrated system of education.

The Department is in charge of raising the standard of basic education and administrative efficiency in the delivery of educational services that are relevant and in pursuance to the national development goals. The Department, as provider of basic education, serves 17 million school children (School Year 2007-2008) and envisions highly competent, civic-spirited, life skilled and God-loving Filipino youth who will be the future contributor towards the building of a humane, healthy and productive society.

The destructions brought about by the series of typhoons that swept our country in 2006 resulted in damage to 5,600 schools in Southern Luzon with estimated cost at about PHP 3.1 billion and affected about 8 million school children in both elementary and secondary schools. Those destructive fortuitous events, prompted educational authorities to prepare and adopt this Safer Schools Resource Manual to guide education officials, school administrators, teachers and eventually the schoolchildren on what to do before, during and after the onslaught of any hazard, in order to reduce its disastrous impact and damages.

This Manual of the Department of Education is based on the Hyogo Framework for Action, a 10-year plan to make the world safer from natural hazards. This was formulated during the World Conference on Disaster Reduction held in Kobe, Hyogo, Japan, January 2005.

The Hyogo Framework is a global blueprint for disaster risk reduction efforts during the next decade. Its goal is to substantially reduce by 2015 disaster losses in lives, and in the social, economic, and environmental assets of communities and countries. It also offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities.

How To Use This Resource Manual

The Manual is for school administrators, supervisors and school teachers, to provide them with information needed to reduce risk and make schools safer. The Department of Education (DepED) through the Technical Working Group (TWG) of the Department's Disaster Risk Reduction Management conceptualized the promotion of hazard/disaster awareness, to manage impacts, and to help all school communities to reduce the risk of threats from natural and human-made/induced disasters.

This resource manual provides procedures based on the policy statement of the Department of Education for the empowerment of DepED personnel. It outlines the legal bases of the program and spells out the role of the Department's Central Office, Regional Offices, Division Offices, down the school level. The adopted 4-phase strategy: Mitigation, Preparedness, Response, and Rehabilitation, illustrates the basic procedures that a school may employ before, during and after the occurrence of a disaster. This manual offers safeguarding mechanisms to protect and preserve personnel and students, DepEd property, school facilities, equipment, fixtures, instructional materials and school records.

Alternative learning system as well as rehabilitation of learning venues is further predetermined to ensure continuity of instruction. This is to carry out the duties and responsibilities of the school to deliver instruction even in times of emergencies or calamities. Sustainability of a program is always an issue, so, provision of the monitoring, evaluation, and proper reporting procedures ensures the continuity and effectiveness of the implementation of the Disaster Risk Management Program.

The ultimate goal of this resource manual is to protect the lives of the members of the school community and property. Every school personnel must:

- Analyze the condition of the school or conduct situational analysis;
- Identify possible hazards/threats faced by the school;
- Follow and strictly act according to the disaster management strategies especially in times of emergencies, calamity/disaster;
- Provide feedback to the authorities for policy formulation; and
- Request the DepED Division/ Regional/Central Offices / other local and international GOs, NGOs and stakeholders for any assistance.

To effectively achieve the expected response in times of emergency and calamity, school officials and other personnel must take time to understand the contents of this Safer Schools Resource Manual, practice and internalize the risk reduction measures to eventually make a habit of being prepared before, during and after a calamity, be it a natural or a human-made / induced hazard.

Acronyms

ADM	Alternative Delivery Mode
ASDS	Assistant School Division Superintendent
ASEP	Association of Structural Engineers of the Philippines
BEIS	Basic Education Information System
BSP	Boy Scouts of the Philippines
CDFCG	Calamity, Disaster and Fire Control Group
CISD	Critical Incident Stress Debriefing
DANA	Damage Assessment and Needs Analysis
DENR	Department of Environment and Natural Resources
DepED	Department of Education
DLM	Distance Learning Modules
DOC	Disaster Operation Center
DOST	Department of Science and Technology
DRR	Disaster Risk Reduction
DRRG	Disaster Risk Reduction Group
DRRMO	Disaster Risk Reduction Management Office
DRRRM	Disaster Risk Reduction Resource Manual
DRRP	Disaster Risk Reduction Program
DSWD	Department of Social Welfare and Development
EOC	Emergency Operation Center
GO	Government Office
GPPB	Government Procurement Policy Board
GSP	Girl Scouts of the Philippines
ICS	Incident Command System
LDCC	Local Disaster Coordinating Council
LOI	Letter of Instruction
MTDP	Medium Term Development Plan
NAMRIA	National Mapping and Resource Information Authority
NASA	National Aeronautics and Space Administration
NCDPP	National Calamities and Disaster Preparedness Plan
NDCC	National Disaster Coordinating Council
NDCP	National Disaster and Calamities Plan
NGO	Non-Government Office
NOAA	National Oceanographic and Atmospheric Administration
OCD	Office of the Civil Defense
PAGASA	Philippine Atmospheric, Geophysical, Astronomical Services Administration
PDCC	Provincial Disaster Coordinating Council
PDMS	Philippine Disaster Management System

PFSED	Physical Facilities and Schools Engineering Division
PHILVOCS	Philippine Institutes of Volcanology and Seismology
PICE	Philippine Institute of Civil Engineers
PNRC	Philippine National Red Cross
PSP	Paralytic Shellfish Poisoning
RD	Regional Director
RDCC	Regional Disaster Coordinating Council
SDS	Schools Division Superintendent
SEDIP	Secondary Education Development and Improvement Project
SME	School Mapping Exercise
SSRM	Safer Schools Resource Manual
RADAR	Rapid Damage Assessment Reports
TEEP	Third Elementary Education Project
TMG	Technical Management Group
TWG	Technical Working Group

Glossary of Terms

Advisory. A report giving notification, information or message containing recommendations on what actions are to be undertaken.

Alternative Learning System. A parallel learning system that provides a viable alternative to the existing formal education instruction. It encompasses both the nonformal and informal sources of knowledge and skills.

Asteroid. Any of numerous small celestial bodies that revolve around the sun, with orbits lying chiefly between Mars and Jupiter and characteristic diameters between a few and several hundred kilometers. Also called *minor planet, planetoid.*

Atmospheric. Of, relating to, or existing in the atmosphere. Produced by, dependent on, or coming from the atmosphere. Resembling or representing the atmosphere; having or giving the effect of translucence: a painting suffused with a hazy, atmospheric glow. Intended to evoke a particular emotional tone or aesthetic quality: lush atmospheric touches in every room.

Caldera. A large crater caused by the violent explosion of a volcano that collapses into a depression.

Capability. Qualitative assessment of human and material resources such as ability, competence, authority.

Capacity. Quantitative assessment of human and material resources. Example: number, volume, size.

Capacity Building. Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk.

Comet. A celestial body moving about the sun, usually in a highly eccentric orbit, consisting of a central mass surrounded by an envelope of dust and gas that may form a tail that streams away from the sun.

Complex Emergency. Form of man-made emergency in which the cause of the emergency as well as the assistance to the afflicted is complicated by intense levels of political considerations.

Contingency Planning. Forward planning process, in a state of uncertainty, in which scenarios and objectives are agreed, managerial and technical actions defined, and potential response systems put in place in order to prevent, or better respond to, an emergency or critical situation.

Counter Measures. All measures taken to counter and reduce disaster risk. They most commonly refer to engineering (structural) measures but can also include non-structural measures and tools designed and employed to avoid or limit the adverse impact of natural hazards and related environmental and technological disasters.

Disasters. Natural or man-made emergencies that cannot be handled by affected communities who experience severe danger and incur loss of lives and properties causing disruption in its social structure and prevention of the fulfillment of all or some of the affected community's essential functions.

Disaster Impact. Actual hazard event or its immediate consequences requiring extraordinary response.

Disaster Mitigation. An act of preventing or minimizing the adverse effects of disaster-causing phenomena through the introduction of measurers designed to prepare and protect life and property of the members of the society before the occurrence of a phenomenon. Mitigation includes activities that prevent a disaster, reduce the chance of a disaster from happening, or reduce the damaging effects of unavoidable natural phenomena. Construction of typhoon-resistant or earthquake-resistant houses and other structures and locating human settlements away from high risk areas are examples of mitigation activities.

Disaster Preparedness. A state in which individuals and groups of a community have developed plans, allocated resources, and established procedures for an efficient and effective implementation of the plans for the purpose of saving lives and preventing further damage to property in the event of a disaster. Preparedness includes plans or preparations made to save lives and to help response-and-rescue operations. Evacuation plans and stocking food and water are both examples of preparedness.

Disaster Risk Management The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. It comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

Early Warning. Process of information gathering and policy analysis to allow the prediction of developing crises and action either to prevent them or contain their effects.

Earthquake. A feeble shaking to violent trembling of the ground produced by the sudden displacement of rocks or rock materials below the earth's surface.

Ecologists. A specialist in the scientific study of living things in relation to each other and to their environment.

El Nino-Southern Oscillation (ENSO). A complex interaction of the tropical Pacific Ocean and the global atmosphere that results in irregularly occurring episodes of changed ocean and weather patterns in may parts of the world, often with significant impacts, such as altered marine habitats, rainfall changes, floods, droughts and changes in storm patterns.

Emergency. Any situation in which the life or well-being of a community will be threatened unless immediate and appropriate action is taken, and which demands an extraordinary response and exceptional measurers.

Fissuring. A movement in the ground causing a narrow opening produced by cleavage or separation of parts.

Flood. The inundation of land areas which are not normally covered by water. A flood is usually caused by a temporary rise of the water level of a river, stream or other water course, inundating adjacent lands or flood-plains. It could also be due to a temporary rise of lakes, oceans or reservoirs or other bodies of water inundating border lands normally above water.

Flood Plain. A flat or nearly flat surface that may be submerged by flood waters.

Forecast. To tell in advance what is likely to happen. In weather forecasting, to tell the calculated future weather situation within a specific period of time for a given area.

Geographic. Pertains to geography or to the natural features, population, industries, etc. of a region or regions.

Geological Hazard. Natural earth processes or phenomena that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Geotechnical. Pertains to the practical applications of geological science in civil engineering, mining, etc.

Geomagnetic Storms. Major disturbances of the magnetosphere that occur when the interplanetary magnetic field turns southward and remains southward for a prolonged period of time.

Hazard. Any phenomenon that has the potential to cause disruption or damage to humans and their environment. Or an event or occurrence that has the potential for causing injury to life, property and environment.

Heat Wave. Prolonged period of excessive heat, often combined with excessive humidity. PAGASA steps up its procedures to alert the public during these periods when it anticipates an increase in human heat-related illnesses.

Heat Index. A number in degrees Celsius *(C)* that tells how hot it really feels when relative humidity is added to the actual air temperature. Exposure to full sunshine can increase the heat index by 15 degrees.

Heat Cramps. Heat cramps are muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat.

Heat Exhaustion. Heat exhaustion typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

Heat stroke. Heat stroke is life-threatening. A person's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly. Sunstroke is another term for heat stroke.

Hydrology. The study of water on the surface of land, in the soil and underlying rocks, and in the atmosphere, particularly with respect to evaporation and precipitation.

Hydrometeorology. The study of atmospheric water, esp. precipitation, as it affects agriculture, water supply, flood control, power generation, etc. It pertains to the occurrence, motion, and changes of state of atmospheric water.

Informal Education. A lifelong process of learning by which every person acquires and accumulates knowledge, skills, attitudes and insights from daily experiences at home, at work, at play and from life itself.

Intensity. The seismic effect of an earthquake at a given place on man-made structures and on the ground itself. Intensity refers to the actual earthquake effects as observed at specific places. It is a measure of the degree of shaking at any given place. Intensity is dependent on the ground, the depth of the epicenter, and structural conditions at a particular area. It varies from place to place. It is highest near the epicenter and decreases gradually as distance from the epicenter increases.

Inter-tropical Convergence Zone. Boundary area between the trade wind system of the Northern and Southern hemispheres characterized in the maritime climates by a showery precipitation with cumulonimbus clouds sometimes extending to great heights.

Inundation. The rising and spreading of water over land.

La Niña. Approximately the opposite condition to El Niño. Each El Niño or La Niña episode usually lasts for several seasons.

Land Fall. An instant at which the "eye" of a tropical cyclone approaches the land mass portion of a coastal area.

Magnitude. A measure of the energy released in the form of vibration by a particular earthquake. It is measured from seismographic instrument recordings. It is a measure of energy released at the focus. It is not affected by the distance to the epicenter or ground and structural conditions.

Monsoon. The wind blowing from one direction during a certain part of the year, alternating with the wind from the opposite direction in another part of the year.

Precautionary Measures. Steps or actions undertaken in advance to avoid hazards.

Nonformal Education. Any organized, systematic educational activity carried outside the framework of the formal system to provide selected types of learning to a segment of the population.

Non-Structural Measures. Refers to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk and related impacts.

Oceanography. Pertains to the scientific study of oceans, the life that inhabits them, and their physical characteristics, including the depth and extent of ocean waters, their movement and chemical makeup, and the topography and composition of the ocean floors. Oceanography also includes ocean exploration. Also called oceanology.

Preparedness. Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Prevention. Activities to provide outright avoidance of the adverse impact of hazards and means to minimize related environmental, technological and biological disasters.

Pyroclastic Flow. High-density mixtures of hot, dry rock fragments and hot gases that move away from the vent that erupted them at high speeds. They may result from the explosive eruption of molten or solid rock fragments, or both. They may also result from the nonexplosive eruption of lava when parts of dome or a thick lava flow collapses down a steep slope.

Reconstruction. An activity to bring about higher quality of life and security against disaster.

Recovery. Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risks.

Relief. An act of helping or alleviating the conditions of persons who are suffering from the effects of disaster.

Response. The act of implementing or translating into actions what are called for by the preparedness plans. Response includes actions taken to save lives and prevent further damage in a disaster or emergency situation. Seeking shelter from strong winds accompanying a typhoon and evacuating to higher grounds due to an impending flood are examples of response.

Risk. The expected number of lives lost, persons injured, damage to property and disruption of economic activity due to natural phenomenon, and consequently the product of specific risk and elements at risk. Specific risk means the expected degree of loss due to a particular phenomenon. Elements at risk means the population, buildings and civil engineering works, economic activities, public services, utilities and infrastructure, etc., at risk in a given area.

Risk Assessment / Analysis. A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihood and the environment on which they depend.

Runoff. The portion of the precipitation on the land that ultimately reaches streams and then the sea, especially the water from rain.

Structural Measures. Refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure.

Technological Danger. Originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, these dangers may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Tectonic. Refers to the forces or conditions within the earth that cause movements of the crust. designating the results of such movements: tectonic valleys.

Topography. The art of practice of a graphic delineation in detail on maps or charts of selected natural and man-made features of a place or region.

Tsunami. Giant sea waves generated by under-the-sea earthquakes and volcanic eruptions.

Vulnerability. Factors of the community that allow a hazard to cause a disaster. Or the result of a number of factors that increase the chances of a community being unable to cope with an emergency.

Chapter 1



Overview of Disaster Risk Reduction

Understanding Disasters

Disasters are emergencies that cannot be handled by those affected without outside assistance. They are caused by natural or man-made events wherein communities experience severe danger and incur loss of lives and properties causing disruption to their social structure and to all or some of the affected communities' essential functions. Disasters are inevitable. They are caused by unsustainable development that has not taken account of possible hazard impacts in that location. They can be less damaging if the population has better understanding of locally-experienced hazards and implements preventive or mitigating measures against them.

Overview of Disaster Risk Management

In disaster risk management a whole range of elements need attention depending on the nature of the hazards in that location. These include:

- *Risk Reduction.* Vulnerability and hazards are not dangerous if taken separately. They become risk and disaster factors when they unite. Risks can be reduced or managed, and measures can be employed to ensure that hazards will not result in disasters if people reduce the weaknesses and vulnerabilities to existing hazards in the location.
- *Risk management* is needed for disaster prevention to ensure sustainable development so that people can lead a good, healthy, and happy life without creating damage to the environment.

Risk management includes identifying health and safety hazards, determining probability of their occurrences, estimating their potential impacts to the schools and the communities at risk, enumerating and implementing the following risk reduction measures: hazard mapping; vulnerability analysis; potential losses estimation; and strategic disaster prevention / mitigation development.

Essential Components in Determining Risk

The following are essential components in the determination of risk, each of which should be separately quantified:

- *Hazard occurrence probability* is the likelihood of experiencing a natural or technological hazard at a given location or region. Quantifying hazard probability involves assessing not only the probability of occurrence but the probability of magnitude.

- *Elements at risk*. Identifying and making an inventory of people or school buildings or other elements which would be affected by the hazard if it occurs, and when required, estimating their economic value.

- *Vulnerability of the elements at risk*. How affected the school buildings or school children or other elements would be if they were to experience some levels of hazard impact. Vulnerability is the relationship between the severity of hazard impact and the degree of damaged caused. Each element is affected differently by hazards of different severity.

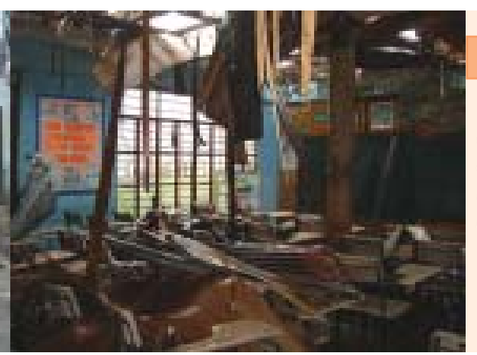
Loss Management

These are the pre and post disaster actions designed to keep the losses at the minimum in human, structural and economic aspects.

- Pre-disaster loss management are activities focusing on reducing the community vulnerability to hazards. Actions include improving the resistance of physical structures such as school buildings, developing improved safety plans for the occupants, and increasing / diversifying the network of social support mechanism available to communities in threatened areas.

- Post-disaster loss management focuses on improving the emergency response and broadening the range of support given to victims that includes facilitation of relief delivery and stimulating a rapid recovery.





Damaged School Buildings

These photos show some of the school buildings damaged by super typhoon Reming in the Bicol region last 2006.

Control of Events

This is the most critical element of disaster risk management. Control is maintained through the following measures:

- Anticipation of disaster and the cause-effect relationship generated by each type of event;

- Mitigation or reduction of the risk of disaster;

- Disaster preparedness;

- Accurate information collection and assessment;

- Balanced response;

- Timely actions;

- Effective leadership; and

- Discipline among those handling the relief and disaster management.

Equity of Assistance

Disaster assistance should be provided in an equitable and fair manner. Fairness should be the basis of relief and reconstruction policies in order to ensure that disaster victims receive equal treatment and are able to obtain adequate access to resources available.The special needs of women, children, and the elderly are catered for.

Resource Management

In order to meet all competing needs and demands of a post disaster environment, resource management becomes essential. The use of available resources should be maximized to the greatest advantage. Affordable locally available resources are preferred.

Impact Reduction

Disasters can have impact far beyond the immediate human, physical or economic losses. Disasters represent a loss of opportunity not only to individuals but also to the entire education community. They can also be a setback to the development program of the country which in effect can erode whatever gains the education sector envisions to achieve. Hence, disaster preparedness must be undertaken to reduce their impact to the minimum and to accomplish recovery quickly so that efforts contribute to the overall development of the country and its citizens.

Disaster Prevention and Mitigation

Prevention and mitigation are actions taken to make sure that the impact of a hazard is lessened. We cannot stop natural hazards from happening but we can reduce the damages if we institute prevention and mitigation measures. Taking measures in order to avoid an event turning into a disaster is prevention, which includes planting trees in order to prevent erosion, landslides and drought. On the other hand, measures that reduce vulnerability to certain hazards is mitigation which includes for instance improved building practices and standard designs to ensure that school buildings are constructed in risk free school sites, houses and hospitals can withstand earthquake or a typhoon.

Prevention and mitigation in schools begins with:

- Knowing which hazards and risks the school is exposed to (hazard mapping);

- Meeting with all stakeholders in education and making plans to reduce those hazards and risks; and

- Implementing plans to reduce vulnerabilities.

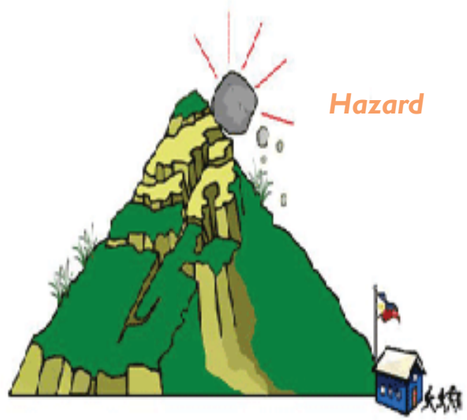
Hazard is an event or occurrence that has the potential to cause harm to life and damage property and the environment.

Risk is the probability of harmful consequences, or expected loss of lives, people injured, livelihoods, disruption of economic activities and damages to the environment as a result of interactions between natural or human induced hazards and vulnerable / capable conditions.

Vulnerability comprises conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community, school, or certain area in a locality to the impact of hazards.

Capacities are those positive resources and abilities which are helpful to individuals, families and community in mitigating, preparing for, responding to and recovering from the hazard impact. The United Nations International Strategy for Disaster Reduction (UNISDR) puts these definitions into an equation:

Risk



Disaster



$$Risk = \frac{Hazard \times Vulnerability}{Capacity}$$

Overview of Policies and Principles of Disaster Risk Reduction

Legal Basis

The adoption of this Manual by the Department of Education (DepED) and the role of the DepED in the Philippine Disaster Management System are mandated by the following legal documents:

Executive Order No. 159, series of 1968, mandates that all heads of departments, bureaus, offices, agencies, instrumentalities and political sub-divisions of the government, including all corporations owned and controlled by the government, the armed forces, government hospitals and public educational institutions to establish their respective disaster control organizations.

Presidential Decree No. 1566 of June 1978, "Strengthening the Philippine Disaster Control, Capability and Establishing the National Program on Community Disaster Preparedness" stresses on the hardships endured by our people due to a hostile environment and has continually sought survival against hazards, both natural and human-made. Furthermore, the Decree stated the urgency of the need to direct, control and coordinate the manpower, material, monetary, and spiritual resources of the entire Filipino nation to reduce the impact of hazards.

Rule 1040 of the *Occupational Safety and Health Standards* (as amended) which states that EACH AGENCY provide for the organization of disaster control groups/health safety committees in every place of employment and the conduct of periodic drills and exercises in work places;

All DepED Orders, Memoranda, and other documents containing policies and guidelines on disaster risk management are contained in the Appendices.

Guiding Principles

The Department has adopted the following guiding principles in disaster risk reduction management in 2005 to implement the Hyogo Framework for Action.

Making Disaster Risk Reduction a Priority ensures that disaster risk reduction is a national and local priority with a strong institutional basis for implementation. This principle emphasizes that collaboration is key.

In implementing the Hyogo Framework for Action, countries must develop or modify policies, laws, and organizational arrangements, as well as plans, programs, projects to integrate risk reduction and allocate sufficient resources to support and maintain them.

Hence, disaster/risk reduction measures are being integrated in the DepED Short and Medium Term Development Plans for budgetary consideration from 2008 onwards. Priority considerations shall be given to the implementation of programs and projects relative to disaster risk management.

Knowing the Risks and Taking Actions identifies, assesses and monitors disaster risks and enhances early warning. This principle believes that early warning saves lives.

Early warning is to relay to individuals, groups or populations messages which provide them with information about: the existence of danger; and what can be done to prevent, avoid or minimize the danger. Warnings issued by the Philippine Atmospheric, Geophysical, Astronomical Services Administration (PAGASA), Philippine Institute on Volcanology and Seismology (PHIVOLCS), Operations Center, National Disaster Coordinating Council (NDCC) are being communicated to the general public followed by actions like the suspension of

classes during inclement weather and emergency situations.

The Secretary of the Department of National Defense, as Chairman of the National Disaster Coordinating Council (NDCC) is also given the authority to suspend classes in coordination with the Local Government Units (LGUs), DepED and the Commission on Higher Education (CHED) as the need arises. The authority was issued by President Gloria Macapagal Arroyo in Administrative Order No. 196 dated September 11, 2007 entitled "Empowering the Secretary of National Defense and Concurrent Chairman of the National Disaster Coordinating Council to Declare the Suspension of Classes in Times of Disasters or Calamities".

In order to know the risks and vulnerability to natural hazards of existing schools, the DepED shall continue the School Mapping Exercise (SME) project to include all schools not only those covered by the Third Elementary Education Project (TEEP) and the Secondary Education Development and Improvement Project (SEDIP), both foreign assisted projects that started the School Mapping Exercise (SME).

The National Mapping and Resource Information Authority (NAMRIA) was commissioned by the Department to train DepED Engineers on the basics of hazard assessment, map layout, digitizing, gathering and consolidation of data, analysis and interpretation. NAMRIA also assisted the Physical Facilities and Schools Engineering Division (PFSED) of the Office of Planning Service (OPS) in the integration and utilization of SME outputs given by TEEP and SEDIP as well as in establishing a Geographic Information System Based School Profiling System (GIS-SPS) as part of the Basic Education Information System (BEIS).

Information generated from the School Mapping Exercise (SME) like hazards map, liquefaction map, topographic map, base map and other information shall be used as one of the criteria in the approval of establishing new schools and in relocating schools at risk to safer sites.

Building Understanding and Awareness uses knowledge, innovation and education to build a culture of safety and resilience at all levels. The principle is based on the premise that local knowledge is critical for disaster reduction.

Information dissemination campaigns on basic concepts for all hazards, their causes, preventative measures, and consequences shall be used as one of the strategies in providing awareness and knowledge to the public. This shall be implemented through integration of disaster risk reduction concepts in school curricula as contained in Department Memorandum No. 100, s. 2007 "Mainstreaming Disaster Risk Reduction Concepts in Secondary Curriculum", and mainstreaming disaster risk management in the school system as contained in DepED Order No. 55, s. 2007 "Prioritizing the Mainstreaming of Disaster Risk Reduction Management in the School System and Implementation of Programs and Projects Relative Therefore". *See Appendix 4.*

Other strategies include the following:

- Providing relevant information on disaster risks and means of protection, especially in hazard prone areas;
- Strengthening networks and promoting dialogue and cooperation among disaster experts, technical and scientific specialists, planners and other stakeholders;
- Conducting capability training for teachers, non-teaching personnel, community members, parents, and children;
- Developing or strengthening community-based disaster risk management programs; and
- Working with the media in disaster risk reduction awareness activities.

Reducing Risk means to reduce the underlying risk factors. One of the ways to reduce risks is by building local resilience in order to protect school communities. The Department can build resilience to disasters by investing in simple, well-known measures to reduce risk and vulnerability. For example:

- Locating / relocating schools away from hazard-prone areas, such as flood plains, shorelines, earthquake fault lines, etc;
- Building schools and facilities strong enough to withstand the impacts of all hazards;
- Encouraging reforestation and protection of wetlands;
- Implementing the provisions of Clean Air Act and Waste Segregation Scheme, Presidential Decree No. 856, Code on Sanitation of the Philippines, Presidential Decree No. 1185, Fire Code of the Philippines; and Presidential Decree No. 1096, Building Code of the Philippines.
- Encouraging participation in the National Schools Maintenance Week or "Brigada Eskwela" wherein parents and local volunteers come together for one week in May before the start of the school year in order to do minor repair and maintenance of school facilities to get the

Prevention



Mitigation



Preparedness



schools ready and safe for the children to use.

Being Prepared and Ready to Act. Strengthen disaster preparedness for effective response at all levels. This principle believes that disaster preparedness needs practice. Being prepared, including conducting risk assessments, before investing in development at all school communities will enable DepED facilities and personnel to become more resilient to natural hazards.

Preparedness Activities:

- Development and regular testing of contingency plans;
- Appropriation of the calamity fund to support preparedness, response and rehabilitation activities through the NDCC;
- Development of coordinated Regional, Division, District and school approaches for effective disaster response;
- Regular dialogue between response agencies, planners and policy-makers, and development organizations;
- Coordination with Local Disaster Coordinating Councils for better collaboration and synchronization, and convergence of assistance;
- Establishment and maintenance of bilateral coordination among cluster members, partners and stakeholders for timely and effective humanitarian response;
- Conduct Quarterly Earthquake Drills in Schools; and
- Drill Exercises like fire drill, and evacuation drills.

Organization of a Disaster Control Group

In order to make disaster risk reduction management operational, the Department organized the DepED Calamity, Disaster and Fire Control Group (CDFCG) created by DECS Order No. 61, s. 1990, which was revived / reconstituted and amended by DECS Order No. 56, s. 1995, DECS Order No. 14, s. 1997, DECS Order No. 92 s. 1998 and reactivated by DepED Order No. 25, s. 2005. The CDFC Group is supported by eight Committees.

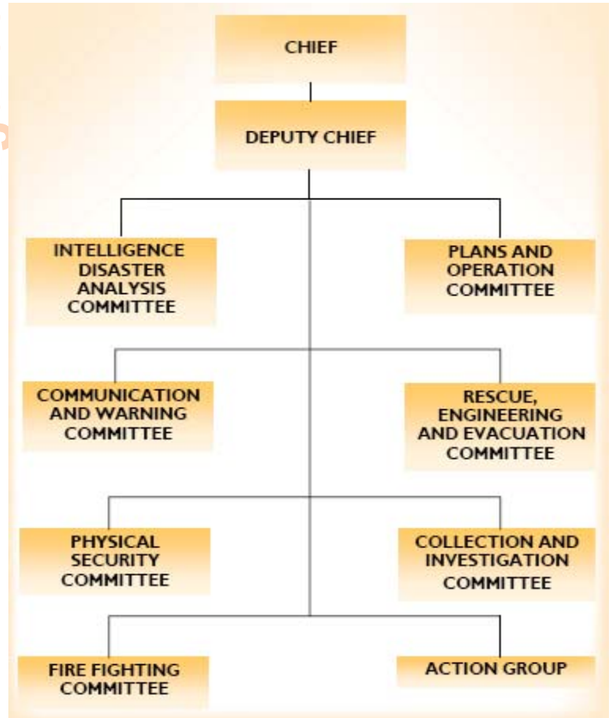
CDFCG Committees:

- Intelligence / Disaster Analysis Committee
- Plans and Operation Committee
- Communication and Warning Committee
- Rescue, Engineering and Evacuation Committee
- Physical Security Committee
- Documentation and Investigation Committee
- Fire Fighting Committee
- Action Group

The figure below shows the existing organizational structure of the Calamity / Disaster and Fire Control Group (CDFCG):

- The CDFCG is headed by the Director of Administrative Service, DepED
- He also plays the role of Incident Commander in case of emergencies;
- The group is composed of 8 committees to carry out DRM wherein Evacuation, Rescue and Rehabilitation Committees were lumped into one under the Physical Facilities and Schools Engineering Division, Office of Planning Service (PFSED-OPS).
- Each committee has functions and responsibilities to perform as stated in DepED Order No. 25, s. 2005 (see attached CD).
- The group coordinates with the DepED Secretary and NDCC on matters relative to DRM through the DepED Focal Person on DRM and leads the Disaster Operations Center in conducting the damage assessment and monitoring of damages to school properties during emergency situations. The Focal Person also reports to NDCC all damages caused by calamities/disasters to the education sector, and sits at the NDCC Operations Center to address queries pertaining to education during emergency situation (see figure below).

figures



Chapter 2



Natural Hazards

The Philippine Islands are prone to all kinds of natural hazards because of their geographical location and physical environment. The country is strategically located in the path of turbulent and destructive cyclones in the Pacific, and the "Ring of Fire". This situation has adverse effects, not only on the lives and properties of the Filipino people, but also on the economy of the nation, as hazard impacts may result in widespread environmental and property damages. Natural hazards may cause danger to people, structures or economic assets, and may lead to a disaster if they are not mitigated against and prepared for.

Phenomena that are atmospheric, hydro-meteorological or oceanographic and geographical in nature may cause the loss of life or injury, property damage, social and economic disruption and/or environmental degradation. Hydro-meteorological and geographical hazards can be single, sequential or a combination in origin and effects. The common hazards associated with these are heavy rains, strong winds, storm surge, floods and landslides/ mud slide /mud flow.

Geological hazards are normal and their processes occur as irregular events with direct interaction with the environment. They are capable of causing significant negative impact on human well-being. Their non-rhythmic occurrence makes their predictability difficult. An important characteristic of many geological hazards is their prime land preference – the characteristic of preferentially occupying areas targeted by man for his use. Almost all types of geological hazards occur in the Philippines except hazards associated with glaciers and seasonal snowfall. Hazards arising from volcanic eruptions, earthquakes and other related geotectonic phenomena such as landslide, tsunami and faulting are the most mitigated ones due to the frequency of their occurrence.

Types of Natural Hazards

Hydro-Meteorological Phenomena and Hazard



Cyclone

A cyclone is an intense low pressure system which is characterized by strong spiral winds towards the center, called the "Eye" in a counter-clockwise flow in the northern hemisphere. Hazards due to tropical cyclones are strong winds with heavy rainfall that can cause widespread flooding/flashfloods, storm surges, landslides and mudflows.

Classification

- Tropical Depression – maximum winds from 35 kph to 63 kph
- Tropical Storm – maximum winds from 64 kph to 118 kph
- Typhoons – maximum winds exceeding 118 kph



Typhoon

A typhoon is a large, powerful and violent tropical cyclone. It is a low pressure area rotating counterclockwise and containing rising warm air that forms over warm water in the Western Pacific Ocean. Less powerful tropical cyclones are called Tropical Depressions and Tropical Storms. A typhoon is called a hurricane in the Atlantic Ocean, a cyclone in the Indian Ocean and wily-wily in Australia. Typhoons can inflict terrible damage due to thunderstorms, violent winds, torrential rain, floods, landslides, large and very big waves associated with storm surges. Hurricane-force winds can reach out as little as 40 km from the center of a small hurricane and as far as 240 km in a large hurricane. Tropical storm-force winds can extend as far as 480 km from the center of a large hurricane. These are very dangerous storms.

Preparedness and Mitigation (What to do before):

- Establish and maintain coordination with Barangay Disaster Coordinating Councils (BDCC).
- Ensure that the school building can withstand heavy rain and strong winds. Single level schools built at ground level may be anchored by guy wires to strengthen the stability of the structure.



The Modified Public Storm Warning Signals (PSWS) in the Philippines

PSWS 1 Winds of 30-60 kph may be expected in at least 36 hours or intermittent rains may be expected within 36 hours. (When the tropical cyclone develops very close to the locality, a shorter lead of time of the occurrence of the winds will be specified in the warning bulletin)

PSWS 2 Winds of greater than 60 kph and up to 100 kph may be expected in at least 24 hours.

PSWS 3 Winds greater than 100 kph up to 185 kph may be expected in at least 18 hours.

PSWS 4 Very strong winds of more than 185 kph may be expected in at least 12 hours.

- Learn about typhoon and other weather disturbances, their signs and warnings, effects and dangers and how to protect the school children, records and school property.
- Educate school children on preparedness for tropical cyclones.
- Participate actively in the school's disaster response – drill or simulation.
- Observe strictly Department policies on the suspension of classes or invoke school-based decisions in coordination with Local Government Units.

Response (What to do during):

- Monitor through radio or other reliable sources the latest official report of PAGASA on the typhoon.
- Gather the pupils in the most stable, strong and safe school building when it is no longer safe for them to go home.
- Advise pupils/students to stay indoors and away from windows.
- Coordinate with the proper school officials on possible immediate evacuation measures especially if the school is located in a low-lying area.
- Ensure that pupils/students will remain calm by keeping them informed of the latest developments.

Rehabilitation (What to do after):

- Attend to victims immediately. For minor cuts and wounds apply first aid. Seek necessary medical assistance at disaster station or hospital.
- Check the classroom for damages and losses. Report these immediately to the authorized officials.
- Coordinate with the Barangay officials, LGU's for assistance.
- Prepare the necessary documents to effect replacement of damaged buildings and other school properties and/or repair of the same.



Tornado

A tornado is described as a violently rotating column of air extending from a thunderstorm to the ground. Tornadoes come in many sizes but are typically in the form of a visible condensation funnel whose narrow end touches the earth and is often encircled by a cloud of debris. It can have a wide range of colors depending on the environment. Typically, tornadoes may appear nearly transparent and invisible until dust and debris are picked up.

Tornadoes develop from severe thunderstorms in warm, unstable air along and ahead of cold fronts. It starts from a change in direction, an increase in wind speed with increasing height and a rise from within the thunderstorm which triggers the rotation of wind from horizontal to vertical.

Tornadoes have been observed on every continent of the world but these destructive forces are found most frequently in the United States particularly to the east of the Rocky Mountains during spring and summer months. Occurrence of tornadoes in Asian countries is seldom. There were reported occurrences of "buhawi", local term for tornado, in the Philippines, one occured in San Miguel, Bulacan and damaged at least 30 houses in 2008.

Preparedness and Mitigation (What to do before):

- Develop a preparedness plan for the whole school community
- Have frequent drills
- Inspect pre-designated areas to ensure the best protection
- Secure megaphone as alternative of school's alarm system
- Listen to radio and television for information
- Store flashlights and back-up batteries to receive warnings

Response (What to do during):

- Move to a pre-designated area or an interior room on the lowest floor and get under a sturdy piece of furniture
- Stay away from windows
- Lie flat in a depression if caught outside

Rehabilitation (What to do after):

- Attend to survivors immediately
- Check the school community for damages and losses
- Coordinate with proper authorities for assistance

Shapes and Sizes of Tornadoes

Violent Tornadoes
only 2% of all tornadoes
70% of all tornado deaths
lifetime can exceed 1 hour
winds greater than 205 mph

Weak Tornadoes
69% of all tornadoes
less than 5% of tornado deaths
lifetime 1 – 10+ minutes
winds less than 110 mph

Strong Tornadoes
29% of all tornadoes
nearly 30% of all tornado deaths
may last 20 minutes
winds 110-205 mph





Thunderstorms

A thunderstorm is a weather condition that produces lightning and thunder, heavy rainfall from cumulonimbus clouds and possibly a tornado. It is a violent local atmospheric disturbance accompanied by lightning, thunder, and heavy rain, and often by strong gusts of wind, and sometimes by hail. The typical thunderstorm caused by convection occurs when the sun's warmth has heated a large body of moist air near the ground. This air rises and is cooled by expansion. The cooling condenses the water vapor present in the air, forming a cumulus cloud. If the process continues, the summit often attains a height of 4 miles (6.5km) above the base, and the top spreads out in the shape of an anvil becoming cumulo-nimbus clouds. The turbulent air current within the cloud causes a continual breaking up and reuniting of the rain drops, which may form hail, and builds up strong electrical charges that result in lightning. As the thunderstorm approaches an area, the gentle flow of warm air feeding the cloud gives way to a strong, chilly gust of wind from the opposite direction, blowing from the base of the cloud. Intense rain begins, then gradually diminishes as the thunderstorm passes. Night thunderstorms are caused by the cooling of the upper layers of air by radiation; others are caused by approaching cold air masses that advance as a wedge near the ground, forcing the warmer air in its path to rise. Thunderstorms occur most frequently in the equatorial zone (some localities have as many as 200 a year) and seldom in the polar regions.

Preparedness and Mitigation (What to do before):

- Develop a School Preparedness Plan. Severe thunderstorm-specific planning should include the following:
  - Learn about your area's severe thunderstorm risk.
  - Discuss how you would know if a thunderstorm may produce a tornado.
  - Discuss how to be warned of an approaching thunderstorm.
- Recommend trimming and removal of dead or rotting trees that could fall and may cause damage or injury.
- Secure outdoor objects that could be blown away and cause damage.
- Secure classroom doors and windows both from the inside and outside.
- Estimate the distance of the thunderclouds by computing the difference in time (second) between seeing the flash of lightning and hearing the claps of thunder. (1 second = 1000 ft.).
- Advise students to stay indoors for 30 minutes after hearing the last clap of the thunder.
- Ensure proper drainage for rain water on the whole school site.



Response (What to do during):

- Instruct pupils to do the lightning safety position and stay away from structures, trees, towers, fences, telephone lines, or power lines if out in the open.
- Advise pupils/students to watch out for falling debris and flashfloods.
- Advise pupils/students to stay calm throughout the occurrence of thunderstorm.
- Postpone all outdoor activities.
- Advise pupils/students to get inside the school building, classroom or hard top automobile.
- Advise pupils/students to avoid plumbing and bathroom fixtures that are good conductors of electricity.
- Unplug or turn off all appliances and other electrical items such as computers. Electric power surges and storm lightning can cause serious damage to these appliances.
- Turn off the air conditioner and television, and stay off the phone until the storm is over. Use a battery operated radio for gaining information.
- Choose and move to a "safe place" in your school where students can gather during a thunderstorm preferably on the lowest floor of the building. This should be a place where there are no windows, skylights, or glass doors, which could be broken by strong winds or hail, causing damage or injury.

Rehabilitation (What to do after):

- Send pupils/students home if the weather condition allows.
- Remind pupils/students to continually observe safety measures on their way home.
- Continue listening to local radio or television stations for updated information and instructions.
- Stay away from storm-damaged areas.
- Watch out for fallen power lines, stay away from them and report them immediately.



Lightning Safety Position

Lightning safety experts have invented a "lightning safety position" that is very important to know if you are caught in a thunderstorm and you can't find a shelter. This position looks hard, but it could save your life. There are several reasons for doing it: It makes you a smaller target. With your heels together, if lightning hits the ground, it goes through the closest foot, up to your heel and then transfers to the other foot and goes back to the ground again. If you don't put your feet together, lightning could go through your heart and kill you. You put your hands over your ears to protect them from thunder.



Flood

Flood is the inundation of land areas which are not normally covered by water. A flood is usually caused by a temporary rise or the overflowing of a river, stream, or other water course, inundating adjacent lands or flood-plains. It could also be due to a temporary rise of lakes, oceans or reservoirs and/ or other enclosed bodies of water, inundating border lands due to heavy and prolonged rainfall associated with tropical cyclones, monsoons, inter-tropical convergence zones or active low pressure areas. Floods are basically hydrological phenomena and they are also caused by storm surges, and tsunami along coastal areas.

Ecologists also attribute flooding in some regions to the results of human activities like unregulated cutting of trees and urbanization of large areas. These activities have changed the hydrological regime of some areas so that water flows into streams more rapidly. As a result of this, high water levels in water courses occur sooner and more suddenly.

Flooding occurs in known floodplains when prolonged rainfall over several days, intense rainfall over a short period of time, or a debris jam causes a river or stream to overflow and flood the surrounding area.

Several factors contribute to flooding. Two key elements are rainfall intensity and duration. Intensity is the rate of rainfall, and duration is how long the rain lasts. Topography, soil conditions, and ground cover also play important roles. Most flash flooding is caused by slow-moving thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms. Floods can be slow- or fast-rising, but generally develop over a period of hours or days.

Preparedness and Mitigation (What to do before):

- Find out the frequency of occurrence of floods in the locality, especially those that affect the school area.
- Know the flood warning system in the school. If none exists, recommend to the appropriate authority for the creation of one.
- Research from previous occurrences how fast the water floods occur in the school and how high it rises.
- Watch out for rapidly rising water and prepare the students/pupils for evacuation.
- Switch off the electricity and lock the rooms after the children have gone out.
- Have a handy survival kit. It should contain battery-operated transistor radio, flashlight, emergency cooking equipment, candles, matches and first aid kit.
- Offer services and perform the assigned tasks in the event that the school is designated as an evacuation area for families or livestock.
- If it has been raining hard for several hours, or steadily raining for several days, be alert to the possibility of a flood. Floods happen as the ground becomes saturated.
- Use a radio or a portable, battery-powered radio (or television) for updated information. Local stations provide the best advice for your particular situation.
- Caution everyone to avoid using lanterns or torches in case there are flammable materials present.
- Protect your school property against flood.

Response (What to do during):

- Keep the pupils/students calm and update them with the status of the situation and safety reminders on what to do and where to go in case of evacuation.
- Listen continuously to a radio, or a portable, battery-powered radio (or television) for updated emergency information.
- Remind pupils/students not to attempt to cross flowing streams unless they are assured that the water is below knee high level.
- Advise pupils/students to avoid areas prone to flash flooding and be cautious of water-covered roads, bridges, creeks and stream banks and recently flooded areas.
- Warn pupils/students not to go swimming or boating in swollen rivers.
- Watch out for snakes in flooded areas.
- Advise pupils/students to eat only well-cooked food and drink only clean or preferably boiled water and throw away all food that has come into contact with flood water.

Rehabilitation (What to do after):

- Report broken utility lines (electricity, water, gas, etc.) immediately to appropriate agencies/authorities.
- Ensure that electrical appliances are checked by a competent electrician before switching them on.
- Avoid affected areas.
- Continue to listen to a radio or local television stations and return home only when authorities indicate it is safe to do so.
- Stay away from any building that is still flooded.



How to protect your school property against flood

Keep insurance policies, documents, and other valuables in a safe-deposit box in a safe place.

- *Avoid building in a floodplain unless you elevate and reinforce your school.*
- *Store school properties in upper levels;*
- *Construct barriers such as levees, berms, and flood walls to stop flood water from entering the school premises.*
- *Hold appropriate consultations with local authorities regarding flood risk reduction measures.*



Storm Surge

Storm surge is a rise of seawater above normal sea level on the coast, generated by the action of weather elements such as cyclonic wind and atmospheric pressure. Sea level is raised and driven towards the coast. Where the depth is shallow and the slope of the sea bed is gradual, the natural flow of the water is delayed by the effect of friction on the sea bed. As more water moves from the sea to the coast excess water piles up on the shore line.This piling up of water makes a large volume of water which might eventually flow into the hinterland some distance from the coast. Depending upon the shape of the coastline and the slope of the sea bed, storm surge can sweep across large portions of coastal areas.

Preparedness and Mitigation (What to do before):

- Know the storm surge risk zones and recommend for the relocation of the school children to safer grounds if necessary.
- Recommend the construction of seawalls and storm surge breakers to protect the buildings from storm surge strikes.
- Warn pupils/students to stay off the beach when weather disturbance exists.
- Ensure that everyone is familiar with the identified escape routes of the school to higher grounds.
- Establish evacuation plans and procedures.
- Ensure full participation in the regular conduct of drills and exercises.

Response (What to do during):

- Direct pupils/students to move to higher grounds upon detection of signs of a probable storm surge or upon receiving a warning that a storm surge is imminent.
- Advise pupils/students to be alert of and stay away from steep, high coastal areas which are prone to landslides.
- Switch off power supply.
- Advise pupils/students to stay on the inland side away from the potential flow of water.
- If caught in a storm surge, advise pupils/students to take hold of large boulders or tree trunks which can provide protection from the force of water or debris carried by the flowing water.

Rehabilitation (What to do after):

- Advise pupils/students not to eat fresh food that came in contact with flood waters. Drinking water should be submitted to proper authorities for testing.
- Check structural damage of the classroom to ensure that there is no danger of structure collapse.
- Check classrooms for electrical damage and open live wires. Electrical fixtures should only be switched on after making sure that it is safe to do so.
- Clean all mud and debris immediately.



Landslides

A landslide is a massive outward and downward movement of slope-forming materials. The term landslide is restricted to movements of rocks and soil masses. These masses may range in size up to entire mountainsides. Their movements may vary in velocity.

A landslide is initiated when a section of a hill slope or sloping section of a sea bed is rendered too weak to support its own weight. This is generally triggered by other natural hazards such as prolonged, heavy rainfall or by other sources of water which increase the water content of the slope materials. Landslide as a geological hazard is caused by earthquake or volcanic eruption. Susceptibility of hill slope to landslide is developed as a result of denudation of mountainsides which removes the trees or ground cover that holds the soil, or alteration of the surface of the ground like grading for roads or building constructions.

Preparedness and Mitigation (What to do before):

- Secure clearance from the Mines and Geosciences Bureau (MGB) on status of possible landslides.
- Prepare the pupils/students for evacuation upon the direction of the proper school authorities.
- Maintain a list of contact numbers during emergencies.
- Plant grasses to cover slopes or build riprap to prevent soil erosion.
- Reinforce the foundation and walls of the school buildings and other structures when needed.
- Conduct regular drills on evacuation procedures.
- Recommend to proper authorities to enforce land use regulations geared at mitigating landslide or mudflow hazards.
- Promote public awareness and involvement on landslide mitigation.
- Recommend to proper authorities the construction of channels, catchments, basins, dams, levees, and similar structures to protect the school.
- Develop a school preparedness and evacuation plan.

Response (What to do during):

- Evacuate the school community immediately if warned of an impending landslide or mudflow.
- Advise pupils/students to stay away from the path of landslide debris, or seek refuge behind a sturdy tree or boulder.
- Get out of the school buildings as soon as possible when rumbling sounds are heard from upstream or the trembling of the ground is felt, indicating a possible mudflow. Run across a slope, not downwards.

Rehabilitation (What to do after):

- Recommend to proper authorities to examine thoroughly the damaged structures and utilities before re-occupying facilities.
- Stay away from the landslide area. There may be danger of additional landslides.
- Check with caution injured and trapped persons within the landslide area. Direct rescuers to their locations.
- Listen to local radio or television stations for the latest emergency information.
- Seek the advice of a geotechnical expert for evaluating landslide hazards or designing corrective techniques to reduce landslide risk.



Mudflow or Mudslide

A mudflow or mudslide is a flow of water that contains large amounts of suspended particles and silt. It has a higher density and viscosity than a stream flow and can deposit only the coarsest part of its load; this causes heavy sediment deposit. Its high viscosity will not allow it to flow as easily as water. These flows generally occur during periods of intense rainfall. The consistency of debris flow ranges from watery mud to thick, rocky mud that can carry large materials such as trees, boulders, and even vehicles and houses.



Global Warming

Global Warming is the process of warming the earth caused by the so-called enhanced green-house effect which traps the solar radiation in the atmosphere due to the presence of greenhouse gases.

Ultraviolet radiation passes through the Earth's atmosphere and warms the planet's surface before being reflected back into space as infrared radiation. Gases such as carbon dioxide and methane are called greenhouse gases, which trap some of the heat from radiation in the atmosphere. The concentration of these gases has increased dramatically as a result of human activity, therefore trapping more heat and thus causing global temperatures to increase and climates to change.

What are the human activities that increase the concentrations of the greenhouse gases?

- Burning of fossil fuels like oil, coal, gas and others, in transportation, manufacturing processes in industry and land-use changes contribute to the increases of carbon dioxide emissions.
- Livestock production and waste management systems like landfills, cause increases in the concentration of methane.
- The use of chemical fertilizers and pesticides are examples of activities that cause increases in the concentration of nitrous oxide.
- The use of Chlorofluorocarbons (CFCs), Hydrofluorocarbons (HFCs) and its substitutes in refrigeration / airconditioning units causes the increase of halocarbon concentration in the atmosphere.

Global warming causes changes in rainfall patterns, a rise in sea level due to melting of polar icecaps and ice fields, and a wide range of negative impacts on plants, wildlife, and humans.

The good news about global warming is we know exactly what to do. We can slow it down and mitigate its worst effects by significantly reducing our consumption of fossil fuels through energy conservation and by switching to clean, renewable energy sources which are carbon-free—like wind, solar, biomass and geothermal energy.

Preparedness and Mitigation (what to do before):

- Continue information dissemination on global warming issues. Give warning on the dangerous effect of global warming.
- Advocate for the recycle/reuse of everyday materials to help conserve resources, lead to less energy and less elements used in manufacturing them, while recycling paper will lead to less trees being cut down.
- Save energy by saving electricity through the use of energy efficient lighting and appliances, biking/walking.
- Advocate the use of renewable energy such as those from hydro-electric dams, wind power, solar radiation and biofuels.
- Plant trees and encourage others to plant too
- Conserve water and other natural resources.
- Be environment-friendly.



Extreme Climatic Variabilities

Climate Change is the direct impact of global warming. Rising temperatures will cause changes to weather patterns. As global warming occurs, most places will be warmer. This will cause changes in the amount and pattern of rain and snow, in the length of growing seasons, in the frequency and severity of storms, and in sea level rises. Computer models predict that global warming will shift rainfall patterns, resulting in extended drought conditions in some areas, and excessive rainfall and severe storms in others. Climate change will cause more severe extreme weather events and the world would experience more killing heat waves, long-lasting droughts in some areas and more frequent and intense downpours and floods in others, an increasing number of super hurricanes or tornadoes and typhoons, massive species extinction, eco-system collapse, agricultural failure and rising sea levels, which eventually will inundate coastal towns and cities around the world.

Periodical Phenomenon of Climatic Variability

La Nina is characterized by unusually cold ocean temperatures in the equatorial Pacific, as compared to El Nino, which is characterized by unusually warm ocean temperatures in the equatorial Pacific. El Nino and La Nina result from interaction between the surface of the ocean and the atmosphere in the tropical Pacific. Changes in the ocean impact the atmosphere and climate patterns around the globe. In turn, changes in the atmosphere impact the ocean temperatures and currents. The system oscillates between warm (El Nino) to neutral, or cold (La Nina) conditions with an average of every 3-4 years.

Heat Waves

Heat can kill by pushing the human body temperature beyond its limits. Elderly people, young children, and those who are sick or overweight are more likely to become victims of extreme heat. Men sweat more than women so they are more susceptible to heat illness and become more quickly dehydrated. Excessive heat that lasts for more than two days significantly increases heat-related illnesses. People living in urban areas may be at greater risk from the effects of a prolonged heat wave than people living in rural regions.

Preparedness and Mitigation (What to do before):

- Develop a School Preparedness Plan on extreme heat. Know what heat hazard may occur where you are and learn how to plan for extreme heat.
- Plan changes in your daily activities to avoid strenuous work during the warmest part of the day.
- Consult a physician when affected by extreme heat.
- Undergo training on first aid.
- Discuss the dangers of extreme heat wave with your students
- Provide a special section in the school newsletter with emergency information on extreme heat.
- Interview local physicians and paramedics about the dangers of sunburn, heat exhaustion, heat stroke, and other possible conditions caused by excessive heat.



El Nino and La Nina

La Nina is associated with extreme climatic variability such as devastating rains, winds, drought, anomalies in rainfall, temperature and tropical cyclone activities. The deeper, warmer water of El Nino limits the amount of nutrient-rich deep water and since fish can no longer access this rich food source, many of them die. The different water temperatures tend to change the weather or promote climate variability in the affected areas.

Response (What to do during):

- Plan changes in your daily activities to avoid strenuous work during the warmest part of the day. Instead, do it in the morning between 4:00 a.m. and 7:00 a.m. Many heat emergencies are experienced by people exercising or working during the hottest part of the day.
- During a drought, conserve water by placing a brick, or another large solid object, in your toilet tank to reduce the amount of water used in flushing.
- Stay indoors as much as possible.
- Avoid extreme temperature changes like a cool shower immediately after coming in from hot temperatures which can result to hypothermia.
- Keep cool.
- Vacuum air conditioner filters weekly during periods of high use.
- Wear loose-fitting, lightweight, light-colored clothing that will cover as much skin as possible.
- Protect face and head by wearing a wide-brimmed hat.
- Drink plenty of water even if you do not feel thirsty, to prevent dehydration.
- Avoid drinks with alcohol or caffeine which can also cause dehydration.
- Take frequent breaks if you must work outdoors.
- Use a buddy system when working in extreme heat.
- Eat frequent small meals for easy digestion.
- Use salt tablets or table salt because it retains fluids.
- Never leave children or pets alone in closed vehicles.

Rehabilitation (What to do after):

- Bring victims to the school clinic.

Geological Phenomena and Hazards



Earthquake

An earthquake is a shaking of the ground caused by sudden slippage of rock masses below or at the surface of the earth. It is a wave-like movement of the earth's surface. An earthquake may be classified as either tectonic or volcanic. In certain cases, earthquakes can result from man-made activities such as detonation of explosives, deep mining activities, etc. However, these earthquakes are mild and may be felt only as tremors. A very severe earthquake is usually associated with shocks called foreshocks and aftershocks. Foreshocks are a series of tremors that occur before the main earthquake. Aftershocks are weaker earthquakes that follow the main shocks and can cause further damage to weakened buildings. Be aware that some earthquakes are actually foreshocks, and a stronger earthquake might occur.

Preparedness and Mitigation (What to do before):

- Recommend to appropriate authorities the evaluation of structural soundness of school buildings and important infrastructures.
- Request appropriate authorities to determine whether the school site is along an active fault and/or in liquefaction or landslide prone areas which may cause school buildings to fall.
- Make sure that school building design complies with the National Building Code Standard.
- On existing school buildings with one door, request proper authorities to provide two exit doors for every classroom, both with swing-out direction.

- Check for the presence of other potential sources of hazard due to secondary effect of earthquakes like steep hill slopes, hanging heavy objects, dams, storage tanks, falling debris, and fire.

- Strap heavy furniture/cabinets inside the classrooms to the wall to prevent sliding or toppling;

- Store breakable items, harmful chemicals and flammable materials inside the classrooms in the lowermost shelves and secure firmly.
- Install latches on drawers and cabinets.

- Check classrooms for hanging or unstable objects that may fall on the pupils/students during the earthquake.

- Familiarize pupils/students as well as school personnel with the easiest exit or evacuation route to take. Develop a School Earthquake Evacuation Plan and hang/post this in the corridor of each building.



Drop, Cover, and Hold

The "Drop, Cover and Hold" protocol (drop to the floor, cover your head, and hold on to a solid object), when performed correctly with an awareness of your surroundings, remains the most effective way to protect yourself when an earthquake occurs.

- Teach the school children how to use fire extinguishers, first aid kits, alarms and emergency exits. These should also be accessible, conveniently located, and prominently marked in familiar places to the pupils/students for assembly and possible evacuation.

- Advise pupils/students not to use the elevator during and after an earthquake. Structure or power failure may lead you to get stranded in the elevator.

- Identify strong parts of the building like door jambs, near elevator shafts, sturdy tables where the pupils/students can take refuge during an earthquake.

- Prepare and maintain an earthquake survival kit consisting of a battery-powered radio, flashlight, first aid kit, potable water, candies, ready to eat food, whistle, and dust mask.

- Conduct a contingency planning on earthquake.

- Conduct an orientation and earthquake drill.

- Evaluate the school. Have the following data available yearly:

- Total number of students occupying each floor;

- Total number of students occupying each building; and

- Identify students or teachers with special needs (sick, old, disabled) and their location.
- Study the most recent school grounds layout or planning to identify open spaces and determine the total area of available space that can be utilized as "areas of temporary refuge" that will be designated for the occupants of each school building. Determine how many persons can occupy this open space.

- Obtain a building layout/floor plan for each building that shows the rooms, corridors, staircases and exit points.

Response (What to do during):

- Direct pupils/students to stay inside a structurally sound building.

- Advise pupils/students to protect their body from falling debris by bracing themselves in a doorway or by getting under a sturdy desk or table.

- When inside a vehicle, pull to the side of the road and stop. Do not attempt to cross bridges or overpasses which may have been damaged.

- Direct pupils/students to move to an open area when they are outside a building or any structure.

- Stay away from power lines, posts, walls, and other structures that may fall or collapse. Stay away from buildings with large glass panes.

- Move away from steep escarpments which may be affected by landslides particularly if they are on a mountain or near steep hill slopes.

Rehabilitation (What to do after):

- Advise pupils/students to take the fastest and safest way out if caught in an old or weak classroom building. They should be advised to :

- Get out calmly and in an orderly manner. Not to rush or push one another.

- Not to use elevators, but instead use the stairs;

- Check themselves for cuts and for injuries and approach the nearest teacher for assistance.
- Check the surroundings of the schools

- Call the authority to clean up chemical spills, toxic and flammable materials since this is hazardous to untrained people.

- Check for fire and if any, have it controlled.

Suggested Contents of an Earthquake Survival Kit

- *Water at least 1 liter per person (up to 1 gallon per person)*
- *First Aid Kit with critical basic medication*
- *First Aid Manual / Survival Manual*
- *Canned food and can opener*
- *Nutritional foodbars*
- *Blankets*
- *AM/FM Radio and two-way radios, battery operated*
- *Spare batteries, rechargeable batteries*
- *Flashlight with batteries / emergency shake flashlights*
- *Emergency Lightsticks*
- *Watch or clock*
- *Toilet paper and other hygiene items (soap, shampoo)*
- *Newspapers*
- *Candles and matches*
- *Whistles or small bells, emergency alarm*
- *Sharp utility knives*
- *Rope or nylon cords*
- *Plastic tape , duct tape*
- *Pen and paper*
- *Work gloves*
- *Tools (pry bar, swiss army knife, wrench, pliers, bolt cutters, hack saw, etc)*
- *Dust masks*
- *Cellphone and solar cellphone and battery charger*
- *Emergency contact numbers*



- Check the water and electrical lines for defects. If any damage is suspected, turn the system off in the main valve or switch.

- Help reduce the number of casualties from the earthquake:

- Do not enter partially damaged school buildings, as strong aftershocks may cause these to collapse.
- Gather information and disaster prevention instructions from battery-operated radios.

- The School Head/Principal shall provide safety precautions. He/She shall not allow any student to go out of the school unless they are with their parents/relatives. Identify/List pupils/students fetched by parents/relatives and those left behind.

- Do not use the telephone to call relatives and friends. Disaster prevention authorities may need the lines for emergency calls and communications.

- Do not drive into damaged areas. Rescue and relief operations need the roads for mobility.

- If there is a need to evacuate, apply the buddy-buddy system and follow orders from the Principal/School Head. Wait for your parents to fetch you from the evacuation area and inform the Principal/School Head if you will leave the area.

- Take with you your Earthquake Survival Kit, which contains all the necessary items for your protection and comfort.



Tsunami

Tsunamis are giant sea waves generated by earthquakes and volcanic eruptions under the sea-bed. Not all submarine earthquakes, however, cause tsunamis. Tsunamis can only occur when the earthquake is strong enough (M7.0+) to displace the seabed, creating pressures in the water above it. Other sources of tsunamis include submarine or coastal landslides, pyroclastic flow and large volume debris avalanches from oceanic and partly submerged volcanoes, and caldera collapse. Although tsunamis may be triggered in various ways, their effects on the coastal areas are similar. The large waves of a tsunami are preceded by initial lowering of the water level even beyond the lowest tidal levels. This phenomenon resembles the low tides which may have led to tsunamis being falsely called "tidal waves". Tsunamis generated in distant locations will generally give people enough time to move to higher ground. For locally-generated tsunamis, where you might feel the ground shake, you may only have a few minutes to move to higher ground.

Preparedness and Mitigation (What to do before):

- Conduct school advocacy on tsunami awareness, preparedness and mitigation. Regular tsunami drills should be conducted.

- Turn on your radio and other communication devices to know if there is a tsunami warning if an earthquake occurs and if you are in a coastal area.

- Assign a focal person to monitor and observe the water recession after an earthquake.

- Be aware of the tsunami facts. This knowledge could save your life! Share this knowledge with your friends. It could save their lives!

- If you are in school and you hear there is a tsunami warning, you should follow the advice of teachers and other school personnel.

Response (What to do during):

- CAUTION: Move away from the beach immediately, if there is noticeable recession in water away from the shoreline.

- Move inland to predetermined higher ground immediately and stay there.

- Stay away from the beach. Never go down to the beach to watch a tsunami coming.

- High, multi-story, reinforced concrete school buildings are located in some low-lying coastal areas. The upper floors of these school buildings can provide a safe place to find refuge should there be a tsunami warning and you cannot move quickly inland to higher ground. Local Civil Defense procedures may, however, not allow this type of evacuation in your area.

- Small school buildings located in low-lying coastal areas are not designed to withstand tsunami impacts. Do not stay in these structures should there be a tsunami warning



.• Offshore reefs and shallow areas may help break the force of tsunami waves, but large and dangerous waves can still be a threat to coastal residents in these areas. Staying away from all low-lying areas is the safest advice when there is a tsunami warning.

Rehabilitation (What to do after):

- Stay away from flooded and damaged areas until officials say it is safe to return.
- Stay away from debris in the water; it may pose a safety hazard to boats and people.

- Save yourself – not your possessions.



Volcanic Eruption

A Volcanic Eruption is a process wherein volcanic materials such as molten or hot fragmented rocks or gaseous materials are ejected from a volcano. Hazards from volcanoes may be of different nature. These hazards include flowing of fast-moving molten rocks and other ejecta. The ejected fragments range in size from fine dust (volcanic ash) to large boulders (volcanic bombs or blocks). Besides liquid and solid materials, volcanoes give off poisonous gases, sometimes in superheated gas jets.

Other hazards associated with volcanic eruption are earthquakes, fissuring caused by the force of upward-moving magma, tsunami and water displacement, subsidence due to retreat or withdrawal of magma, landslides due to too much bulging on one side of the volcano or those triggered by earthquakes or rainfall.

Preparedness and Mitigation (What to do before):

- Close windows and doors to reduce entry of ash if heavy ashfall is expected to hit the community.

- Bring animals and livestock into closed shelters.
- Develop evacuation plans and conduct evacuation drills.
- Avoid low places or areas vulnerable to avalanches, rock falls, lava flows and mudflows.
- Prepare for evacuation if warning for imminent volcanic eruptions or mudflows is raised.
- Know the ways of protecting the school from ashfall, landslides and debris flows by consulting your local disaster coordinating council.
- Consult respective disaster coordinating council officials on the establishment of their community counter-disaster response plans.
- Know the delineated areas vulnerable to volcanic hazards and assess your risk for dangers.
- Appreciate and take advantage of the importance of management of human settlements based on land use planning which considers volcanic hazards.
- Learn about your community warning systems and emergency plans.
- Develop an evacuation plan. . Everyone in the school should know where to go in response to warnings.
- Schools in places prone to volcanic eruptions should have pairs of goggles, basic kits and evacuation supply kits.
- If you live in a volcano risk area, publish a special section in your local newspaper with emergency information on volcanoes. Localize the information by including the phone numbers of local emergency services offices, the Philippine National Red Cross chapter, and local hospitals.
- Feature an interview with competent authorities on the likelihood of a volcanic eruption as well as on how to recognize warning signals.
- Work with the office of Civil Defense and Philippine National Red Cross officials to prepare special procedures for children and the elderly or disabled, on what to do if an evacuation is ordered.

Response (What to do during):

- Stay alert and awake.
- Follow the instructions that go with the warning. If there is a directive to evacuate, do so immediately.
- Advise the pupil/students to protect their heads and get away from the area right away if caught in a small rock fall.
- Give priority for evacuation outside the area of ash shower to pupils/students with breathing problems. They should be advised to cover their nose, preferably with a wet piece of cloth.
- Scrape off ashes to prevent heavy loading of the school building roofs. When doing so, the following precautionary measures should be observed:
- Wear long-sleeved shirts and long pants;
- Wear goggles and eyeglasses instead of contact lenses;
- Avoid running car or truck engines. Driving a vehicle can stir-up volcanic ash that can clog engines, damage moving parts, and stall vehicles; and
- Avoid driving in heavy ash falls unless absolutely required. If unavoidable, the vehicle should be driven at a speed of 60 kph or slower.

Rehabilitation (What to do after):

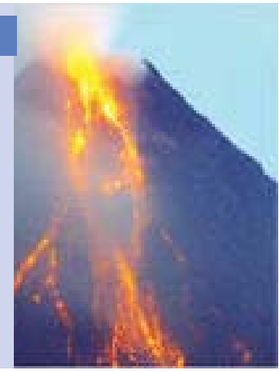
- Clear the canals and pathways of ash and other debris.
- Hose down the accumulated ash and plant leaves on roofs.
- Stay away from the slide area. There may be danger of additional slides.
- Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.
- Listen to local radio or television stations for the latest emergency information.
- Watch for flooding, which may occur after a landslide or debris flow.
- Report broken utility lines and suspected damaged buildings to appropriate authorities.
- If you have a respiratory ailment, avoid contact with ash. Stay indoors until local health officials advise it is safe to go outside. Volcanic ash can cause great damage to breathing passages and the respiratory system.

Provinces At-Risk to Volcanic Eruptions

The top ten provinces at risk to Volcanic Eruptions are:

1. Camiguin
2. Sulu
3. Biliran
4. Albay
5. Bataan
6. Sorsogon
7. South Cotabato
8. Laguna
9. Camarines Sur
10. Batanes

Camiguin has the highest risk because the land area is so small such that a volcanic eruption can affect the whole province. Sulu ranked second because it has the most number of active and potentially active volcanoes. *(source: Manila Observatory)*





Astronomical Hazards

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is now starting to consider some specific astronomical phenomena as one of the natural hazards that could occur on earth and affect particularly the Philippine archipelago and surrounding areas.

Causes and circumstances of deaths from astronomical phenomena are not well-studied, providing an interesting area for researching into deaths and potential deaths from Near-Earth Objects (NEOs) such as comets and asteroid impacts along with geomagnetic storms and other forms of space weather. Numerous websites cite cases of meteorite impact casualties, but none could be verified.

At this point in time, PAGASA is in contact with the numerous government and private astronomical institutions, nationally and internationally to be updated of the current astronomical monitoring and observations. The agency is normally furnished with a copy of current astronomical and space science bulletins and other relevant newsletters regarding events which might lead to accidents and untoward incidents at the earth surface, specifically from National Oceanographic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration of the United States (NASA) and other institutions of developed nations and countries.

Mountain-sized space rocks could potentially impact the Earth causing global effects, and perhaps even be mistaken for a nuclear blast of terrestrial origin. Such large impacts are rare but have happened before. Modern telescopes have therefore begun to scan the skies for signs of approaching celestial hazards.

Natural disasters are natural phenomena. The best way to manage hazard impacts is to be aware of how it occurs and its accompanying consequences, mitigate against, and plan for actions to be taken before, during and after a phenomenon.

Aside from these normal occurrences, there are also other hazards made or induced by humans which will be discussed in the next chapter.

Chapter 3



Human Induced Hazards

Human-made or induced hazards are threats having elements of human intent, negligence, error and involving a failure of a system. Human-induced disasters are a result of inadequately managed human-induced hazards such as:

Technological Hazards

Technological hazards have little or no warning to precede the incident. These dangers originate from industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Environmental Hazards

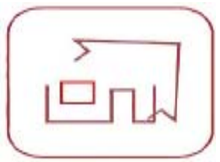
Environmental hazards are events that pose a threat from the surrounding environment encompassing the broad spectrum of acute and chronic effects of industrial, agricultural and naturally occurring microorganisms, chemicals and radiation in our soil, water, air, food, and wastes.

Socio-Economic, Political, Security Hazards

These hazards are caused by criminal and human violence which pose threat to the security of a great number of people, and may be motivated by political or economic reasons.

Types of Human Induced Hazards

Technological Hazards



Structure Collapse

Structure collapse is often caused by engineering failures such as under-design of structural components, by corrosion attack and by aerodynamic resonance in structures.

Preparedness and Mitigation (What to do before):

- Conduct a general check on the condition of all school buildings before every school opening through the assistance of DepED Engineers, City/Provincial/Municipal Engineers and Bureau of Fire Protection.
- Repair or rehabilitate structures to put them in good condition.
- Adopt the existing warning system for a building certified as unsafe for occupancy.
- Cordon off and mark buildings found unsafe with "off-limits".

Response (What to do during):

- Vacate the building immediately.
- Apply first aid, and in cases of injuries or casualties bring the victims to the nearest hospital for medical treatment.

Rehabilitation Phase (What to do after):

- Secure the area.
- Evaluate and assess the damaged structure through the assistance of engineers.
- Report the extent of damages to authorities for proper action.
- Recommend for approval the demolition of condemned buildings, subject to recommendation by proper authorities.



Fire

Fire is composed of three elements – heat, fuel, and oxygen which when combined will result in a chemical reaction called burning. The leading cause of death in a fire, by a three-to-one ratio over burns, is asphyxiation (choking sensation). Fire consumes the oxygen in the air, while increasing the concentration of deadly carbon monoxide and other toxic gases in the atmosphere. Inhaling carbon monoxide can cause loss of consciousness or death within minutes. The heat from a hostile fire exceeds anything to which a person is normally exposed. A fully developed room fire has temperatures over 1,100 degrees Fahrenheit. Fire generates a black,impenetrable smoke that blocks vision and stings the eyes. It is impossible to navigate through such smoke, so fire drill participants should practice evacuating buildings by at least two routes.

Preparedness and Mitigation (What to do before):

- Develop a School Preparedness Plan.
- Develop building evacuation plans for each building.
- Post evacuation plans in strategic locations.
- Install fire extinguishers and alarms.
- Educate by means of demonstration to teachers and students on the proper use of fire extinguishers.
- Maintain proper signage for fire exits.
- Clear and free fire exits from obstruction.
- Insure the building.
- Check regularly on the security guards and watchmen.
- Make sure that the public address systems are loud, clear and functional.
- Assist the professional firemen in their Fire Prevention and Suppression Drill Program (Fire Brigade members).
- Conduct regular inspections and safety checks on electrical outlets.
- Assign personnel who will regularly check possible areas where fire may start such as stock room, laboratories, kitchens.
- Maintain a fire safety plan and an education program to preserve the school to protect the students from fire.
- Consider escape ladders for multi-storey school buildings.
- Conduct a school fire drill at least four times a year.

Response (What to do during):

When fire is detected:

Do's

- Sound the alarm.
- Advise the fire department.
- Fight the fire with available equipment (for Kiddie/Junior Fire Marshals and trained personnel).
- Drop the fire extinguisher if you are using it and leave if the fire does not immediately die down.
- Seek the nearest exit not blocked by fire.
- Feel the door, cracks, and doorknob with the back of your hand before opening the door if you are escaping through a closed door. The back of your hand is more sensitive to heat.
- Close windows and doors as you escape from the fire scene to delay the spread of the fire.
- Use your second way out if you see smoke or fire in your first escape route. The less time you are exposed to poisonous gases or flames, the safer you will be.
- Get out as safely and quickly as you can and stay away from toxic smoke and gases. Drop, crawl and go when fire breaks out.
- Crawl low under the smoke to your exit if you must exit through smoke. Crawling with your head at a level of one to two feet above the ground will temporarily provide the best air.
- Once you are outside, go to your safe meeting place and send one person to call the Fire Department, if not already alerted.
- *ONCE YOU ARE OUT, STAY OUT.*

Commonly Experienced Fires

Building Fire

Building fires may be caused by human negligence or by arson. It can also be accidental. Other causes are: electrical system overloading e.g. through octopus/ illegal electrical connection; overloading of supply by appliances; faulty electrical wirings and connections; and carelessness of users.

Forest Fire

Forest Fire is generally started by lightning. It may also be caused by human negligence or arson. If major, it may burn thousands of square kilometers and intensify enough to produce its own winds and "weather" effect.

Arson

Arson is the criminal intent of setting a fire with intent to cause damage. It is the greatest cause of fires in data repositories. Arson is a crime commonly defined by statute as willful or malicious damage of property by means of fire or explosion. It also refers to the burning of another person's dwelling under circumstances that endanger human life or the burning of any public facility, like school buildings.



human induced hazards
3

Don'ts
- Do not panic.
- Do not run.
- Do not use the elevators.
- Do not jump out from an upper floor.

Post Impact
- Conduct inventory of school personnel and students.
- Seek medical assistance for the injured.
- Do not return inside the school once outside.

Rehabilitation Phase (What to do after):
- Coordinate with the Bureau of Fire Protection and municipal or city engineering office for building assessment.
- Conduct inventory of school personnel and students, equipment, fixtures and facilities.
- Report damage/s to proper authorities.
- Give first aid when needed and seek medical assistance for the seriously injured.
- Stay out of fire-damaged buildings until local fire authorities say it is safe to re-enter.
- Report any s



Vehicular Related Accidents

Some students go to school aboard a school service, like a bus, jeepney, tricycle or van. It is also a common practice for parents or guardians to accompany their children all the way to school and back. This school service presents certain risks to the students' safety. Potential dangers happen especially when students board and alight from the service vehicle.

Preparedness and Mitigation (What to do before):
- Observe traffic rules, drive defensively and practice road courtesy.
- Keep your vehicles in good condition. Always check on brakes, wheels and tires.
- Put a removable school service sign at the back and sides if vehicle is not in full time school service.
- Never pick up or drop off passengers in the middle of the road.
- Observe designated areas for drop off and pick up of students.
- Never sleep inside the vehicle, if possible. Stay alert and prepare yourself for any emergency.

Response (What to do during):
- Bring passengers out of the vehicle immediately.
- Apply first aid in case of injury and bring the victims to the nearest hospital for medical assistance if necessary.
- Help coordinate with the parents regarding the welfare of the passengers in emergency cases such as accidents or weather disturbances. Allow them to stay in school until the weather allows safe travel.

Rehabilitation Phase (What to do after):
- Assign school personnel as traffic aides during the arrival and dismissal of students.
- Provide the traffic aide with a "Stop and Go" placard to help him direct traffic flow.
- Request the Barangay Council or local government units to paint a pedestrian lane along the school's main road and immediate vicinity.
- Feel free to exercise your prerogative to stop the operation should a particular operator violate school or traffic rules. uspected damaged school buildings.



Chemical Spill (Laboratory)

One of the hazards associated with a laboratory is chemical spill. An individual may be considered exposed to chemicals by inhaling, or by the chemical coming in contact with food, water, medicine or clothing thus making it hazardous to pupils/students. The best way to avoid chemical accidents is to read and follow the directions for use, storage, and disposal of the product. The Department has issued DepED Order No. 48, series 2006 entitled, "Observance of Safety Measures in Science Laboratories" directing the strict implementation of the guidelines provided in the Laboratory Manual. Copy of this document is included among the DepED issuances contained in the attached CD.

Preparedness and Mitigation (What to do before):
- Take proper precautions when handling chemicals.
- Educate students on proper handling of chemicals.
- Keep safe storage of chemicals.
- Dispose of chemicals properly.
- Use gloves and mask when handling chemicals.
- Close drawers of storage cabinets when not in use.
- Maintain a stable environment in the institution.
- Improve laboratory safety.
- Provide fire and chemical extinguishers.

Response (What to do during):
- Vacate the room.
- Avoid throwing water or touching the chemicals with bare hands.
- Inform proper authorities.
- Cover nose with wet cloth then transferring casualty to a safer place, for inhalation of a gaseous chemical.
- For ingested chemical induce vomiting and give milk or starch.
- Ensure adequate air circulation around the victim.

Rehabilitation Phase (What to do after):
- Call 117 or local counterpart for paramedic assistance.
- Bring the victim to the nearest hospital.



Electrical Blackout

Electrical blackout is an interruption of normal sources of electrical power.

Preparedness and Mitigation (What to do before):
- Install emergency lighting in dark places and on stairs.
- Keep flash lights in accessible places.
- Prepare ready gas lamps/candles for emergencies.

Response (What to do during):
- Unplug all electrical appliances.
- Stay put in one place to avoid accidents.

Rehabilitation Phase (What to do after):
- Check electrical outlets and switches.
- Avoid electric wiring hanging near trees. Suspend them properly from poles.



Food Poisoning

This is a contamination of food with biological contaminants such as bacteria, fungi, viruses and parasites. Chemical contaminants can also poison food, in the form of agricultural chemicals (pesticides, insecticides, herbicides, fungicides), environmental pollutants (mercury, lead), veterinary products (antibiotics, growth enhancer) and additives (preservatives, food coloring).

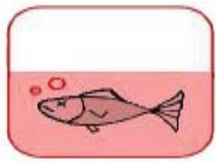
Preparedness and Mitigation (What to do before):
- Encourage school to have a canteen for consumption of all food.
- Discourage children's patronage of junk food.
- Wash raw food thoroughly.
- Cook food properly.
- Eat cooked food immediately.
- Store cooked food properly.
- Avoid contact between raw and cooked foods.
- Ask students/pupils to wash their hands as often as possible.
- Keep all kitchen surfaces meticulously clean.
- Protect food from insects, rodents and other animals.
- Ensure that school clinic is operational.
- Ensure that policies related to canteen operation are strictly enforced.
- Store dangerous chemicals away from children.

Response (What to do during):
- Do not panic.
- Increase fluid intake to prevent dehydration, but if not tolerated orally, bring the person to hospital for intravenous fluid treatment.
- Induce vomiting.
- Seek medical assistance in cases of complications that may result to hepatitis, typhoid fever, diarrhea, cholera, dysentery, amoebiasis etc.

Rehabilitation Phase (What to do after):
- Remind or encourage students / pupils to purchase food from the canteen.

- Require the students to bring their own eating utensils, such as plates, spoons and forks and glasses, when they buy street food.
- Ensure cleanliness of the facilities and food handlers of the school canteen.

Environmental Hazards



Red Tide

Red tide refers to the discoloration of water bodies due to the presence of a high level of "bloom" of a group of algae called dinoflagellates, which are toxic and responsible for paralytic shellfish poisoning (PSP).

Preparedness and Mitigation (What to do before):
- Disseminate red tide information, symptoms and progressions.
- Keep track of and warn regarding media information on outbreaks of red tide, avoid ingestion of fish, shell fish, mollusks and crabs.

Response (What to do during):
- Monitor progression of symptoms and seek medical advice.
- Avoid or refrain from eating sea foods while danger exists.

Rehabilitation Phase (What to do after):
- Seek medical advice.



Water Pollution

Water is polluted by substances like sewage, marine litter, oil and chemical spills, fertilizers and pesticides entering the ocean from irrigation.

Preparedness and Mitigation (What to do before):
- Educate on the proper disposal of waste, human and chemical
- Implement Marine Environmental Law.

Response (What to do during):
- Clean up coastal areas.
- Boil water for consumption.
- Provide warning signs or posters in affected areas.

Rehabilitation Phase (What to do after):
- Seek medical assistance for the water-borne disease casualty

Socio-Economic, Political, Security Hazards



Bomb Threats

Bomb threat is a declaration of an intention to destroy or injure the target by means of a bomb. It is usually through telephone or written notes. It is a piece of information or a warning claiming knowledge that a dangerous device, such as bomb or similar type of explosive, has been or will be placed in a building, aircraft or other facility. A bomb is a device capable of producing damage to material, and injury or death to people when detonated or ignited. Bombs are classified as either "explosive" inflicting damage and injury by fragmentation, heat and blast waves, or "incendiary" which generates fire producing heat without a substantial explosion when ignited. Similar procedures should be applied for chemical or biological threats.

Preparedness and Mitigation (What to do before):

- Prepare a school bomb threat emergency plan.
- Encourage every school personnel and pupils/students to be constantly prepared against bomb threats and bombing incidents.
- Provide security for the protection of property, personnel, facilities, and materials against unauthorized entry.
- Set-up bomb threat command centers in areas where there is easy access to telephone or radio communication systems.
- Do not joke about bombs. It is now a crime to joke or cause false alarm about the existence of bombs.

Response (What to do during):

- Treat all threats received as real and report immediately to authorities.
- Remain calm and courteous
- Try to obtain as much information as possible such as:
  - the identity of the caller;
  - the characteristics of the caller;
  - ask the exact location of the bomb;
  - apply delaying tactics; and
  - report all details to a responsible person immediately.

Rehabilitation Phase (What to do after):

- Request proper authorities to search the buildings thoroughly.
- Implement security measures in the premises.
- Post incident stress debriefing, if needed.



Kidnapping Threats

If kidnapping happens in the school campus this is a human-made hazard as well as a criminal offense. Kidnapping happens when one or group of persons take and carry away another person, by force or fraud, without the consent of the person taken and without lawful excuse.

Preparedness and Mitigation (What to do before):

- Tighten security measures.
- Employ precautionary strategies such as password.
- Be vigilant about the safety of pupils/students.
- Advise pupils/students not to talk to and go with strangers.

Response (What to do during):

- Inform the family of the victim.
- Report to proper authorities the incident and other information.
- Listen to the advice of the Police and other authorities when reporting stories regarding kidnapping.

Rehabilitation Phase (What to do after):

- Bring the victim to the hospital for medical check-up / psycho-social counseling.
- Support the family in seeking justice for the victim.



Hostage Taking

Terrorists feel that human lives must be endangered in order for their demands to be met. Hostage taking may happen in public/private schools. When it happens, do the following:

Preparedness and Mitigation (What to do before):

- Educate the children at risk.
- Provide negotiation training and obtain systematic coaching on emergency preparedness.

Response (What to do during):

- Inform the family of the victim.
- Stay as calm as you can and encourage students/pupils around you to act calmly.
- Concentrate on survival.
- Follow hostage taker's instructions.

Rehabilitation Phase (What to do after):

- Assist the family of the victim in seeking justice.
- Offer therapeutic coaching to people to act resourcefully under stress.



Civil Disorder

Civil Disorder is a broad term that is typically used by law enforcement to describe one or more forms of disturbance caused by a group of people. Civil disturbance is typically a symptom of, and a form of protest against, major socio-political problems. Typically, the severity of the action coincides with the public outrage. Examples: legal parades, sit-ins, strikes, and other forms of obstructions, riots, sabotage. It is intended to be a demonstration to the public and the government, but can escalate into general chaos.

Preparedness and Mitigation (What to do before):

- Discourage the school community from joining any protest that will disrupt the delivery of instruction.

Response (What to do during):

- Stay calm.
- Contact your local law enforcement agency.
- Take note of the following information.

• Date of incident/time of incident

• Location of incident

Rehabilitation Phase (What to do after):

- Bring victims of civil disorder to hospital for treatment.
- Identify the victims and notify the next of kin.

Chapter 4



Risk Profile of the Philippines

The Philippines is a large archipelago composed of more than 7,100 islands. It is a hazard prone country and its exposure to disaster is to a significant extent due to its geographical and physical characteristics.

The country lies along the Western Pacific Basin, the world's busiest typhoon belt, with the average of 20 typhoons hitting the country each year. *Figure 1* displays a satellite map showing typhoons in the area of the Philippines. As shown in *Figure 2,* the country lies in between two tectonic plates, whose movements create mountain ranges, islands, volcanoes, earthquakes and tsunamis. It is also a part of the Circum-Pacific seismic belt and is within the subduction zones called the Ring of Fire.

The Risks

There are many hazards frequently damaging the country, causing damage to lives and property. However, not all hazard incidents necessarily result in disasters. They only become disasters when they affect people who cannot cope with the physical and economic impacts. The resulting disaster is, therefore, more than a function of the physical strength, intensity and magnitude of a hazardous event. It is also determined by the peculiar capacity of DepED Offices and schools to withstand the impact, protect the children, teaching and non-teaching personnel, properties, and recover rapidly from damaging events.

Some schools belonging to rich municipalities may be able to cope, while the poorest cannot, hence when hazards strike, poor children suffer more than the rich because they lack the means to protect themselves and recover easily. Instead, the poor families become more indebted or are forced to sell their limited properties and their children stop schooling, further undermining their basic means for survival. Over time, the Department has developed coping strategies through disaster preparedness, mitigation and preventive measures, but worsening economic conditions can cause these coping strategies to fail.

Destructions brought by recent typhoons "Caloy", "Milenyo", "Paeng", "Queenie", "Reming", and "Seniang" in 2006 have greatly affected many areas in the country. *Figure 3* shows the annual pattern of typhoon incidence in recent years. *Figure 4* shows areas that are at high risk to storm surges. *Figure 5* shows where heavy rains affect low-lying areas. *Figure 6* shows areas in the country vulnerable to landslides. Global warming also affects the Philippines. Temperature rises bring about dry spells and drought and rise of the sea level.

Figure 7 shows the areas vulnerable to temperature increase. Extreme climatic variabilities, El Nino and La Nina, also bring about damages. El Nino occurrences, as shown in *Figure 8*, induce drought in many parts of the country, regularly posing a serious problem in agricultural production. and potable water supply. Sea levels are projected to rise and *Figure 9* shows low-lying areas that are vulnerable, especially shore or coastal areas. *Figure 10* shows areas in Metro Manila affected by sea level rise. *Figure 11* shows where the destructive earthquakes of the Philippines have been located.

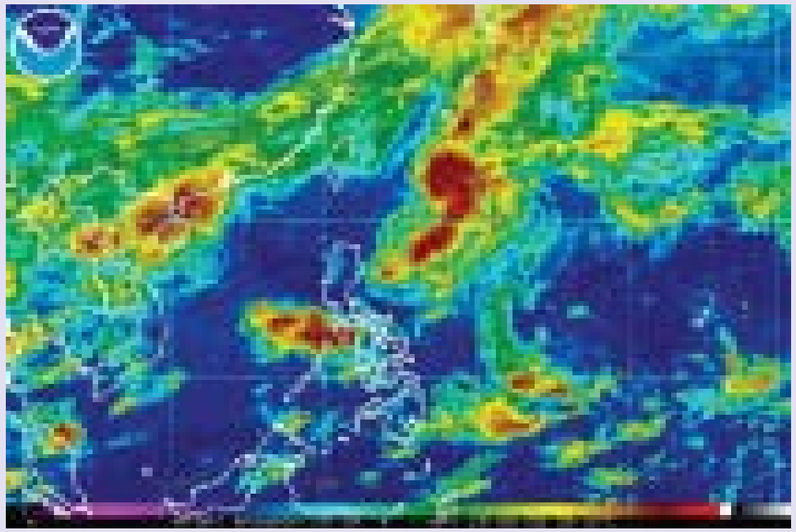


Figure 1: Satellite Map showing typhoons in the area of Philippines



Figure 2:The Pacific Ring of Fire

To help readers to better understand and appreciate maps presented in this chapter, instructions on how to read maps are available in Appendix 5.

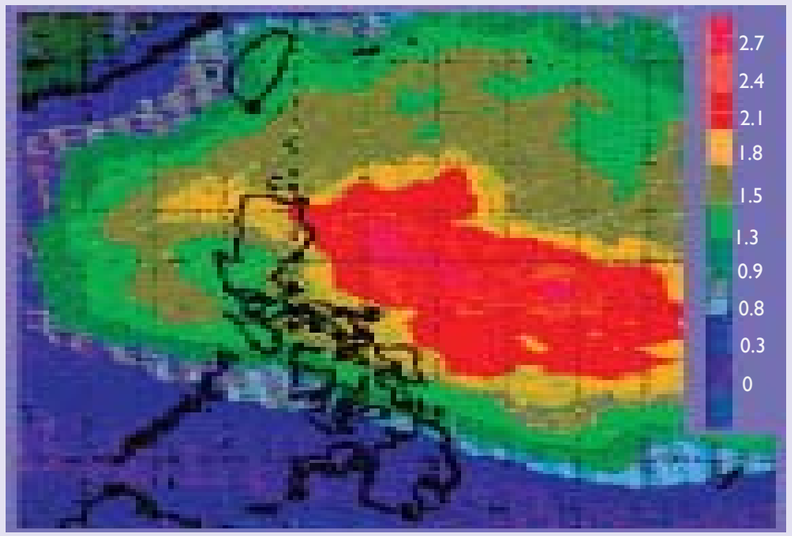


Figure 3: Annual Pattern of Typhoon Incidence from 1950 to 1995. Units indicate typhoon hits. (Source: PAGASA)



Figure 4: Areas at High-Risk to Storm Surge



Figure 5: Major Flood Areas in the Philippines

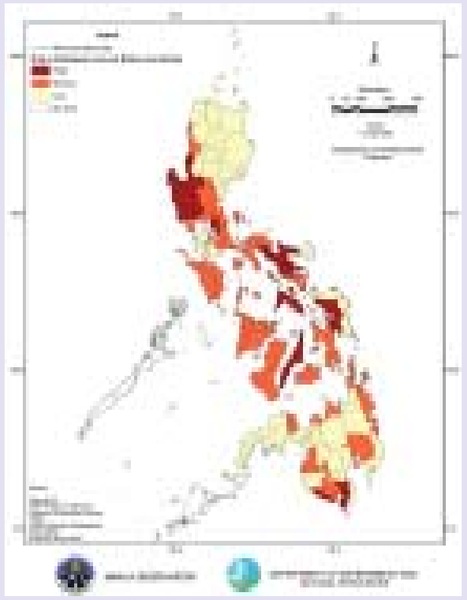


Figure 6: Areas Vulnerable to Landslides

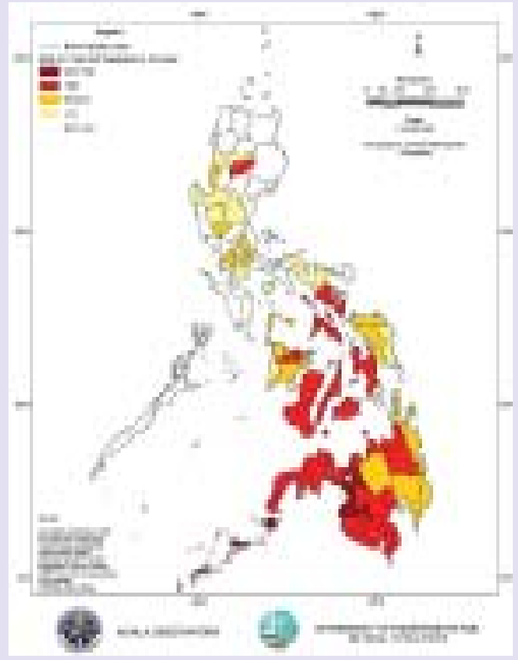


Figure 7:Vulnerability of the Philippines due to temperature increase in the latter half of the 21st century. Darker shades indicate greater vulnerability. *(Source: Manila Observatory Center for Environmental Geomatics)*

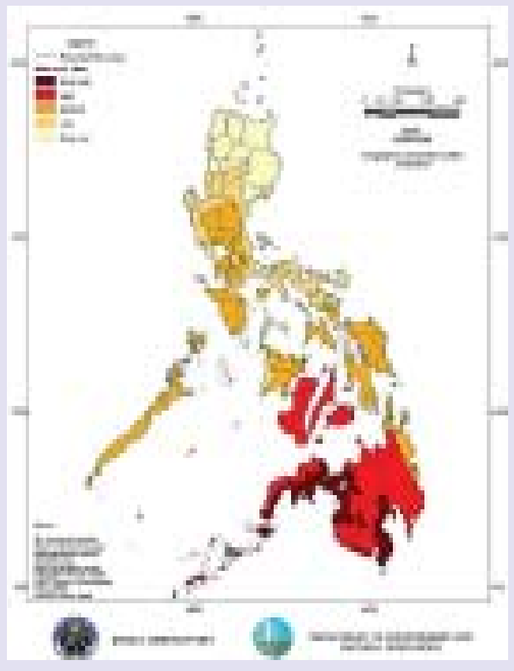


Figure 8: El Nino Southern Oscillation vulnerability map of the Philippines. Darker shades indicate greater vulnerability. *(Source: Bureau of Soils and Water Management, Department of Agriculture)*

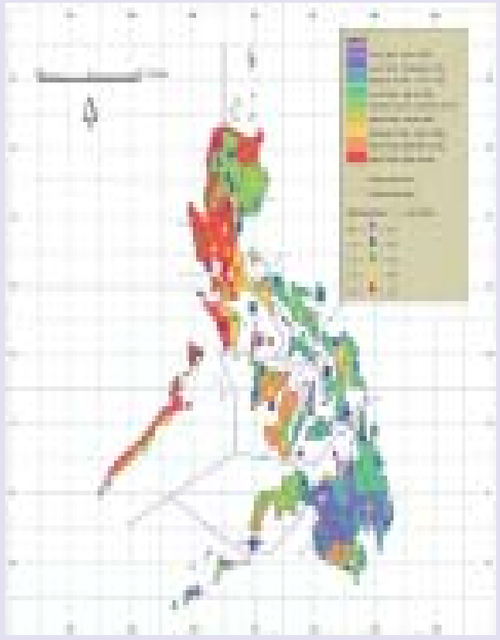


Figure 9: La Nina vulnerability map of the Philippines. Darker shade indicates greater vulnerability. *(Source: Bureau of Soils and Water Management, Department of Agriculture)*

Purple shades have lower vulnerability, red shades have the highest vulnerability.

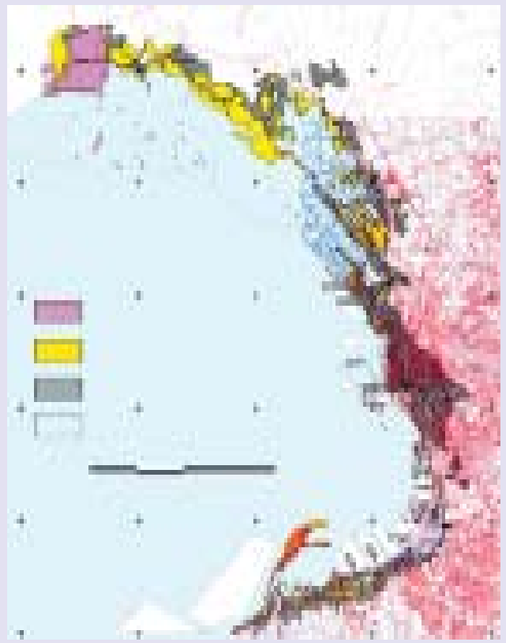


Figure 10: Affected areas in Metro Manila due to projected sea level rise. Green and red regions inundated areas for 1 and 2-meter sea level rise scenarios, respectively. *(Source: Bureau of Soils and Water Management, Department of Agriculture)*

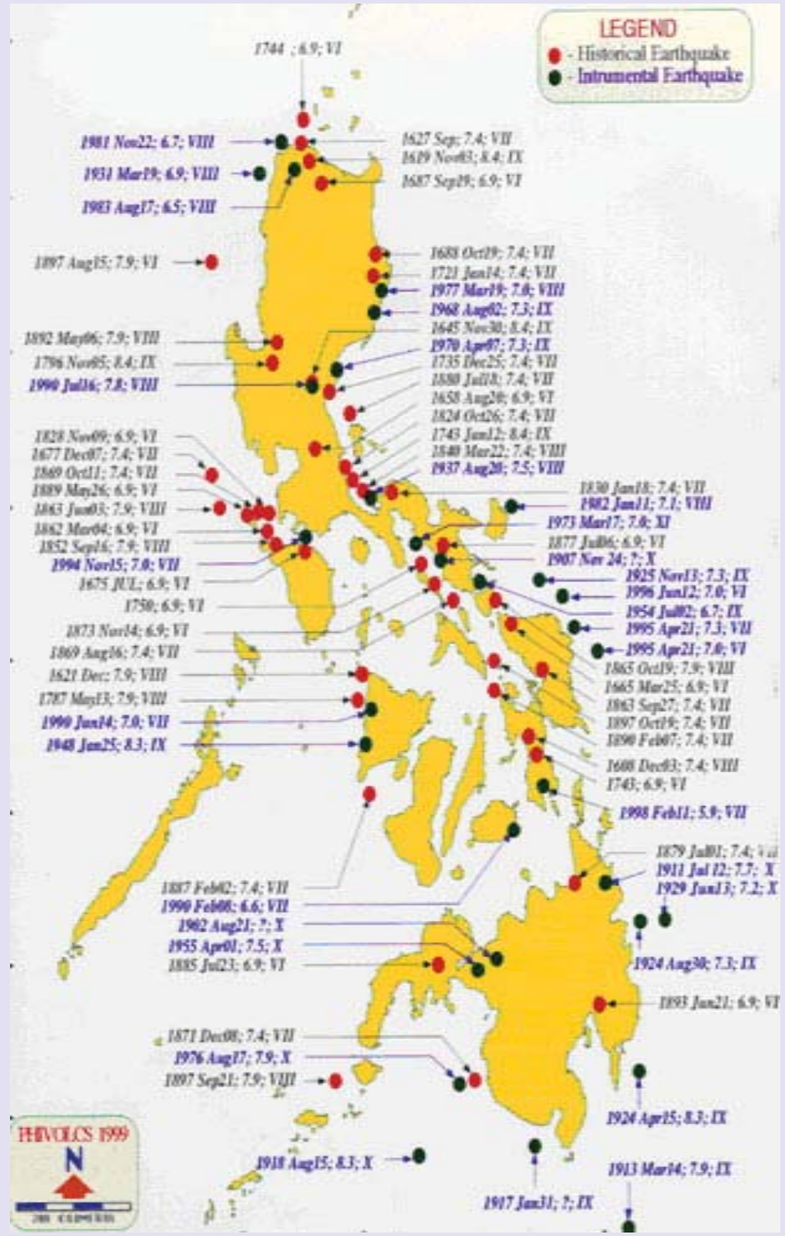


Figure 11: Destructive Easrthquakes of the Philippines

figures

There are 220 volcanoes in the country, out of which 21 are active. Table 1 shows the list of the six most active volcanoes and some of their recent activities, while Table 2 shows the types of volcanic hazards.

Table 1: Active Volcanoes in the Philippines

VOLCANO	Last Eruption	Last Activity
Mt. Mayon, Albay	2001	2006
Mt. Pinatubo, Zambales	1991	
Mt. Taal, Batangas	1977	2006
Mt. Canlaon, Negros Occ.	1996	2006
Mt. Bulusan, Sorsogon	2000	2007
Mt. Hibok-Hibok, Camiguin Island	1951	

Table 2: Types of Volcanic Hazards

Hazards directly related to volcanic eruptions:	Hazards indirectly related to volcanic eruptions
Pyroclastic flows	Lahar
Lava flows	Secondary explosions
Ashfall or tephra fall	Fissuring / subsidence
Volcanic gases	Debris, avalanche or volcanic landslides
Ballistic projectiles	Tsunami / seiches
	Global Warming

Recent tragedies experienced by the country speaks of how vulnerable the country is to all forms of hazards. These are:

The Ormoc catastrophic flash flood (November 5, 1991): More than 5000 people perished. Unusually heavy, continuous rains brought by tropical storm Uring caused landslides and flashfloods and the collapse of Anilao Bridge.

Cherry Hill tragedy (August 1999): Three consecutive days of persistent moderate to heavy rains caused mud to cascade into the Cherry Hill leaving 378 houses damaged and 58 people killed.

Baguio-La Trinidad landslides (July 2001): A record-breaking 24-hour rainfall of 1085.8 millimeters was registered at Baguio City causing widespread landslides and flashfloods, killing 85 persons in Baguio and La Trinidad area alone.

Payatas garbage-slide (July 10, 2000): Continuous moderate to heavy monsoon rains over Metro Manila for several days caused the collapse of the Payatas garbage pile, resulting in 224 deaths and 100 houses destroyed.

Camiguin flashfloods (November 7, 2001): Heavy continuous rains for about 10 hours caused flashfloods carrying landslide debris of boulders, uprooted trees, loose soil, etc. rushing from the mountainside burying 134 residents alive and damaging vegetation and structures.

Aurora-Infanta floods (November-December 2004): Heavy rains triggered major landslides; cleansed the forests of its debris resulting in heavy damage and casualty downstream along rivers and coastal areas in eastern Luzon (1,068 dead, damage estimate - P7,615.98M).

Brgy. Guinsaugon, Saint Bernard, Southern Leyte landslide (February 17, 2006): A landslide hit Southern Leyte that almost wiped out the entire 480 hectares in Brgy. Guinsaugon, one of the 16 villages of the town of St. Bernard, leaving in its wake 154 dead, 28 injured, 410 registered survivors and 968 still missing.

For other details of the history of disasters and their cost, see Appendix 1.

Chapter 5

The Philippine Disaster Risk Management System



To be able to cope with the worsening effects of hazards impacting the country, the government developed a Natural Disaster and Calamities Plan in 1969. The guiding principle for the development of the Natural Disaster and Calamities Plan was to use all available government resources, and encourage all concerned agencies to work together in addressing the issue of disasters and calamities. The plan assigned specific tasks or emergency functions to member agencies including the Department of Education which is one of the members, in addition to their primary day-to-day tasks.

From 1946 to 1970, the Philippine Disaster Management System was reactive in nature wherein disaster responses were limited to emergencies or situations after the disasters have already affected part of the country. Management efforts were highly centralized with minimum participation from the local government officials. The organization of Civil Defense Units at the local level was mostly on paper and people were content to wait for assistance from the national government.

The Office of Civil Defense set up field stations in the 12 Administrative Regional Centers outside of Metro Manila. Field personnel started to convert the local civil defense units into local disaster coordinating councils and retained the leaders and members of these councils.

From 1969 to 1973, government agencies with training funds started conducting disaster preparedness programs with the aim of preparing the populace to respond to any emergency, including the Department of Education with primary concern for the welfare of schoolchildren and school personnel. The Office of Civil Defense started organizing and training the chairpersons and members of the councils at the different levels. The Department of Social Welfare and Development (DSWD) trained community leaders on relief distribution, the Philippine National Red Cross (PNRC) trained community leaders on relief distribution and their volunteers on First Aid, while the Department of Health (DOH) focused their training on barangay health workers. In 1976, the Ministry of Education and Culture (MEC) issued a Memorandum No. 303, s. 1976 on Survival through Disaster Preparedness.

In 1978 the National Disaster Coordinating Council (NDCC) was formally created to further strengthen the system and formalize the ad hoc organizations at the national, regional and local levels and to allocate emergency tasks to the different governmental units pursuant to Presidential Decree 1566 of 1978. The Decree was issued in view of the need to revitalize the system to enhance the survival capability and economic stability of the country, supported by an LOI 453 regarding all types of disasters. Finally, a cogent system for pre-disaster planning, community disaster preparedness and positive, precise disaster control action for rescue evacuation, relief and rehabilitation to insure the survival of every Filipino was developed.

Salient Provisions of PD 1566 (1978)

- State policy on self- reliance among local officials and their constituents in responding to disasters or emergencies;
- Organization of disaster coordinating councils from the national down to the municipal level;
- Statement of duties and responsibilities of the National Disaster Coordinating Council (NDCC), RDCC and LDCCs;
- Preparation of the National Calamities and Disaster Preparedness Plan (NCDPP) by OCD and implementing plans by NDCC member-agencies;
- Conduct of periodic drills and exercises; and
- Authority for government units to program their funds for disaster preparedness activities in addition to the 5% calamity fund is provided for in PD 474 of 1974 (amended by RA 8185 in 1991).

In May 1994, a World Conference on Natural Disaster Reduction was held by the United Nations to reduce the loss of life, property damage, social and economic disruptions caused by natural disasters through a concerted effort in the international and local fronts. It produced the Yokohama Strategy and Plan of Action for a Safer World, called Guidelines for Natural Disaster Prevention, Preparedness and Mitigation. In the Philippines, the NDCC and its member agencies were identified as those responsible in addressing the concerns brought out in the conference. In support of the Plan objectives, it created four committees: on Structural Measures, on Non-Structural Measures, Disaster Research, and Disaster Legislation.

Even with the emergence of many ideas, both local and international, relative to disaster risk management, the Philippine institutional arrangements and disaster management systems tend to rely on a response or reactive approach, in contrast to a more effective proactive approach. There is a widespread emphasis on post-disaster relief and short term preparedness rather than mitigation or post disaster support for sustainable economic recovery. This much shorter term focus does not adequately emphasize natural hazards as a potential obstacle to long-term sustainable development. Thus, in order to evolve to a more proactive role, the National Disaster Coordinating Council (NDCC) in cooperation with all member agencies prepared and implemented a Comprehensive Disaster Management Framework for comprehensive disaster risk management. The framework provides for political leadership and policy support at the highest levels, while facilitating the active engagement and implementation of all relevant stakeholders at the national, local, and household levels. Basic components of the framework are mitigation and preparedness for pre-event and response and rehabilitation for the post event. The framework includes the essential steps of integrated risk management, which include risk identification, risk reduction, and risk sharing/financing in the total risk reduction management system. Current approaches adapted the risk management as a disaster planning framework that encompasses disaster mitigation, preparedness, response and rehabilitation.

The NDCC Comprehensive Disaster Management Framework

Declaration of Principles

The National Disaster Coordinating Center (NDCC) is the highest policy making, coordinating and supervising body at the national level for disaster management of the country. All its activities, efforts and initiatives relative to disaster

risk management are guided by the following principles:

- Responsibility for leadership rests on the provincial Governor, City Mayors, and Municipal Mayors (and Barangay Chairmen), each according to his area of responsibility;
- Each political and administrative subdivision of the country utilizes all available resources in the area before asking for assistance from neighboring entities or higher authority;
- The primary responsibility rests on the government agencies in the affected areas, in coordination with the people themselves;
- Self-reliance be developed by promoting and encouraging the spirit of self help and mutual assistance among the local officials and their constituents;
- The national government exists to support the local governments in times of emergencies and according to their level of assignment, all national government offices in the field support the operations of the local government.

Phases of Disaster Risk Management

Guided by the above-stated principles, disaster risk management involves the following phases:

Pre-Event

Mitigation: Measures taken in advance of a hazard impact aimed at reducing its impact on society and environment. Mitigation activities include:

- *Hazard / Risk Identification and Assessment*– develop, update and disseminate hazard maps and related information to decision-makers, general public and communities at risk.
- *Enforcement of zoning,* land-use and building and fire codes.
- *Integrating/mainstreaming disaster risk management* in infrastructure, the education sector, local governance (comprehensive land use and development plans, construction permits, design approvals), climate change adaptation, flood mitigation master plan, etc.
- *Developing early warning systems* that are people-centered timely and understandable to those at risk.

Preparedness: Measures undertaken to prepare people to react appropriately during and following such emergencies. It involves the following activities:

- Planning – disaster management plans, contingency plans, SOPs, ICS, mutual aid arrangements;
- Advocacy – information dissemination through mass media, enhancing people's awareness through conduct of disaster management fora /briefing, observance of disaster consciousness month, etc.;
- Education and Training – of local officials, deputized coordinators, auxiliaries, volunteers, conduct of drills and exercises, community based disaster risk management trainings;
- Resources – 5 M's – manpower, materials, methods, machines and money

Post Event

Post event refers to activities after the emergency which include the following:

Response

Measures undertaken immediately following an emergency. Such measures are directed towards saving life, protecting property, and dealing with the immediate damage caused by the disaster. Below are activities associated with response:

Early Warning: timely and rapid dissemination of warnings to threatened communities/ population;

Notification – mobilization of response teams, activation of SOPs, DOCs and ICS.

The "Golden Hour" Principle: the time within which most lives could be saved and injuries minimized

Incident Command System: on scene management of disaster operations activities.

Rehabilitation

Rehabilitation includes measures undertaken to restore affected communities/areas to their proper or normal level of functioning and development with reduced vulnerability and increased sustainability. This can be categorized into:

- *Short Term* – restoring necessary lifeline systems (e.g. power, communications, water and sewerage, transportation, etc.), providing for basic human needs (food, clothing, shelter) and monitoring law and order providing CISD, etc.
- *Long Term* – restoring economic activity and development, rebuilding community facilities and housing, healing, repair and reconstruction in a way that is less vulnerable to future hazard impacts.

The Cluster Approach on Humanitarian Response

Another guiding principle is the "Cluster Approach" which is in line with the United Nations Humanitarian Reform Agenda in pursuing a reform program that seeks to improve the effectiveness of humanitarian response by ensuring greater predictability, accountability and partnership. The cluster approach is now being implemented and institutionalized in the Philippine Disaster Management System as contained in the National Disaster Coordinating Council (NDCC) Circular dated May 10, 2007 entitled *"Institutionalization of the Cluster Approach in the Philippine Disaster Management System, Designation of Cluster Leads and their Terms of Reference at the National, Regional and Provincial Level"*. The approach was also institutionalized by the Department of Education through DepED Order No. 74, s. 2007. *(Appendix 4).*

Objectives

General Objectives:

To ensure predictability, accountability, inclusivity and partnership in all sectors.

Specific Objectives:

- Define leadership roles among government cluster leads that are expected to orchestrate the crafting of cluster operational;
- Strategies covering phases before, during and after disasters;
- Offer cluster partners and other stakeholders a clear picture of how to fit in and contribute to the overall cluster efforts;
- Benefits that are timely delivered to common beneficiaries and wider areas covered.

Designated Global Cluster Lead(s)

- United Nations Children's Fund (UNICEF)
- Save the Children Alliance

Main Partners at the Global Level

UNESCO, World Food Project (WFP), UNHCR, International Rescue Committee, Christian Children's Fund, and The Inter-agency Network for Education In Emergencies (INEE).

Main Partners at the Field Level

- Inter-Agency Network for Education in Emergencies (INEE) Member Organizations (UNICEF, Plan International, Save The Children, Children International, ABS-CBN Foundation, CWC / ECCD, DSWD, PNRC)
- National Government Authorities in particular (DOST, DSWD, DOH, DND-0CD, DENR, DPWH)
- Private Sector Partners

Four Pillars of the Cluster Approach

- Strong partnership between UN and non-UN actors;
- Effective leadership and coordination in humanitarian emergencies;
- Adequate, timely and flexible financing; and
- Adequate capacity and predictable leadership in all sectors.

The "cluster approach" operationalizes the fourth pillar and complements the three others. It evolves based on experiences and country dynamics.

Functions of the Cluster Approach

- Crafting cluster operational strategies covering the pre-and post event phases of a disaster that will provide a clear direction for cluster partners on how, what, when and where to contribute;
- Facilitating a process aimed at ensuring well-coordinated and effective humanitarian responses in the sector or area of activity concerned; and
- Ensuring continuous improvement in the implementation of the Cluster Approach in the country by identifying best practices and carrying out lessons learned activities either individually or in collaboration with other clusters; and
- Complement the national committees' principal function of policy review and formulation, offering sectoral operational focus and inclusivity of other sector service providers.

The Clusters

- Health
- Water, Sanitation and Hygiene
- Protection
- Food
- Nutrition
- Shelter
- Camp Coordination
- Education
- Logistics
- Agriculture
- Early Recovery
- Communication

Orders / Memoranda / Issuances

All other DepED Issuances relative to Disaster Risk Management (DRM) shall also be given consideration in performing related functions and shall form part of the policies and guidelines on DRM.

The Statement of Policies of Disaster Risk Reduction is translated into understandable concepts and workable processes explained in the herein Safer Schools Resource Manual of the Department of Education. An accompanying User's Guide is also provided for ease of implementation.

The Role of DepED in the Philippine Disaster Risk Management System

The following section provides the role of the Department of Education in the Philippine Disaster Management System (PDMS), the organization of disaster control groups and the duties and responsibilities of each committee under it, creation of a disaster operations center, and standard operations procedures. The Department of Education is guided by the policies being implemented by the PDMS in implementing various programs and projects relative to disaster risk management. As a member agency of the National Disaster Coordinating Council (NDCC), the Department assumes a very important role in the disaster risk reduction management system of the country with the following duties and responsibilities:

- Organizes reaction teams in the Department central office as well as in the Regional, Division offices, including the schools and other institutions of learning, Boy Scouts of the Philippines (BSP), Girl Scouts of the Philippines (GSP);
- Makes available suitable school buildings near to affected areas as temporary holding centers in the absence of available evacuation facilities;
- Assists in the public education campaign through mainstreaming risk reduction concepts into the school curricula;
- Undertakes, compiles and provides report of damages to schools affected by disasters and submits these to the NDCC Chairman;
- disseminates weather information to the public through the school population and makes the necessary announcements regarding the suspension of classes;
- Issues policies and guidelines on Disaster Risk Reduction and Management;
- Initiates the preparation/production of circular materials on disaster preparedness, in coordination with other member-agencies, and makes these available to schools;
- Undertakes rehabilitation of typhoon-damaged school buildings in the identified typhoon-stricken areas;
- Conducts trainings/advocacy and information dissemination campaigns; and
- Strengthens capability of the DepED Disaster Risk Reduction Groups in Mitigating and Responding to Disasters.

Organizational Structure

The organizational structure described in *Figure 12* will be adopted by the Department of Education in organizing disaster control groups in all levels. In the emergence of more comprehensive ideas for integrating a more proactive approach and brought about by the influx of modern technology and development in the country, this organizational structure *(Figure 12)* shall be adopted by all member agencies.

Inspired by a more proactive approach giving emphasis to mitigation and preparedness, the Department will use the organizational structure

of the Disaster Control Group prescribed by the National Disaster Coordinating Council (NDCC). The new structure includes the establishment of an Emergency Operations Center and an Incident Command System (ICS) which are vital components in making disaster management operational and effective in providing the needed assistance during the onslaught of hazards. The Disaster Risk Reduction Groups shall consist of officers and leaders of services or teams as may be required to execute the plan.

The basic concept underlying the organization is "self-protection". This is accomplished by organizing and training small groups of employees for the performance of specialized tasks. If the framework for effective self-protection already exists as in controlled facilities, broader requirements may be met by expanding or adopting the already organized group for the performance of their prescribed functions.

The organization shall be composed of employees/personnel chosen on a "best qualified" basis. A **Focal Person on Disaster Risk Management** shall be designated who shall function as a member of the Technical Working Group of the National Disaster Coordinating Council, attend regular meetings, and advise the Secretary of Education and the Chairman of the DRRG on policies and guidelines set by the NDCC, report highlights and agreement during meetings attended and sits at the Operations Center of the NDCC during emergency situations as representative of the Department.

The Department of Education created the **Calamity/Disaster and Fire Control Group (CDFCG)** through DepED Order No. 25, s. 2005. However, the CDFCG is more of an ad hoc committee with personnel coming from the different offices of the Department handling both staff and task functions. These personnel are tasked to undertake disaster preparedness and mitigation activities as well as response and rehabilitation aside from their regular functions. In effect, disaster management has not been functional and effective to respond to all kinds of hazards which may result to disasters when not given priority attention.

With this situation, the creation of a permanent structure called the **Disaster Risk Reduction Management Office (DRRMO)** is strongly proposed with their respective duties and responsibilities. The DRRMO shall be part of the permanent structure of the Department under the Office of the Secretary and shall be managed by the Physical Facilities and Schools Engineering Division (PFSED) during the transition period.

Relief Team

- Receives evacuees/victims from the evacuation service leader;

- Provides housing for displaced persons/ evacuees during emergency;

Disaster Risk Reduction Management Office (DRRMO)

Vision: A culture of safe and disaster risk resilient members of school communities who are empowered, responsive and accountable citizens in an atmosphere of collaboration and synergy.

Mission: Maintain effective and efficient programs and projects on disaster risk reduction in school communities to support the quest for quality education through synchronized and integrated efforts.

Objectives:

1. Prevention and Mitigation
To implement activities and strategies to prevent and minimize the adverse effects of disaster-causing phenomena to the education sector

2. Preparedness
To be able to reach a state in which the school communities have developed plans, allocated resources, and established procedures for an efficient and effective implementation of the plans to save lives and prevent further damage to DepED family and properties in the event of a disaster

3. Emergency Response
To devise efficient and effective ways of translating into action what are called for by the preparedness plans

4.Recovery (Rehabilitation and Reconstruction)
To decide and act with the end view of restoring or improving the pre-disaster living conditions of the affected school communities and encouraging, facilitating the necessary adjustments to reduce disaster risks and vulnerabilities.

The present Calamity/Disaster and Fire Control Group or (CDFCG) shall henceforth be known as the DepED Disaster Risk Reduction Management Office (DRRMO). For this purpose, DepED Order No. 25, series of 2005 is hereby repealed.

The DRRMO shall be headed by the Secretary of the Department of Education.

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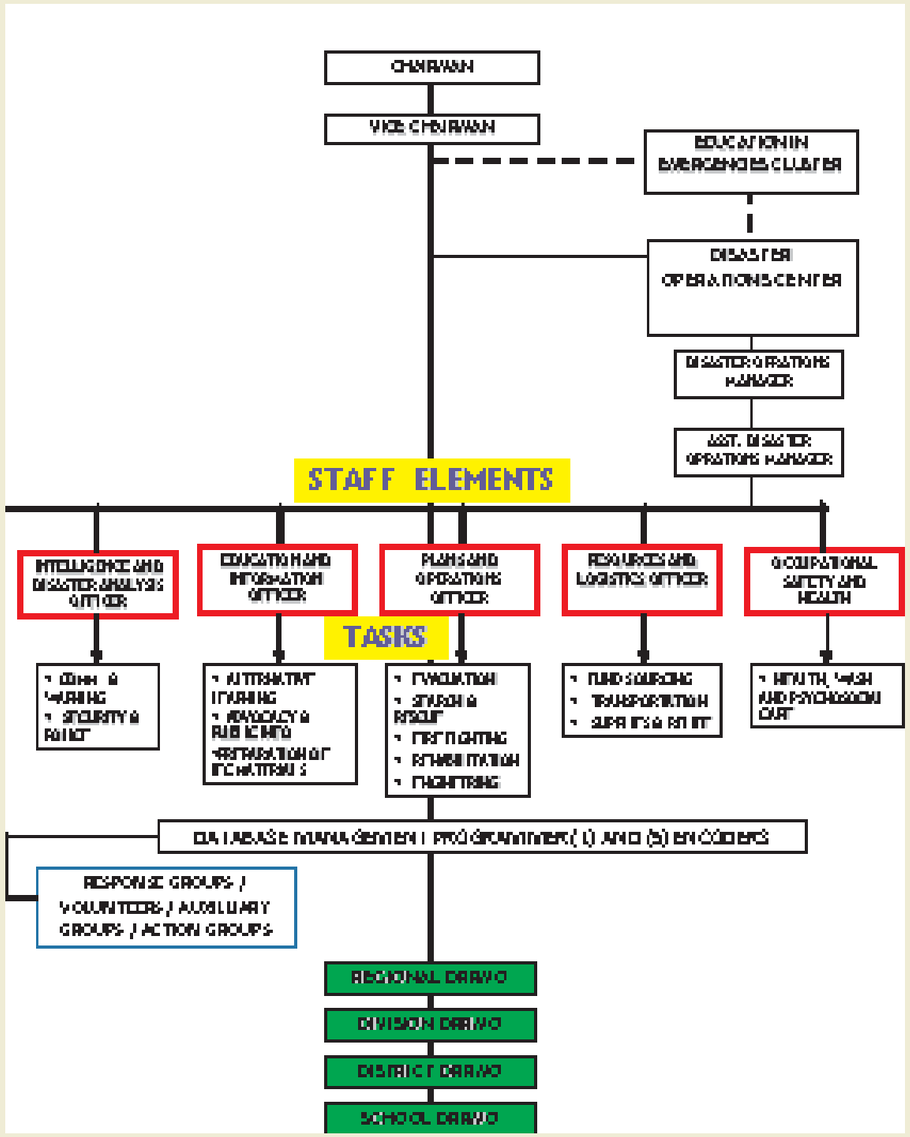


Figure 12: Proposed Structure of the DRRMO

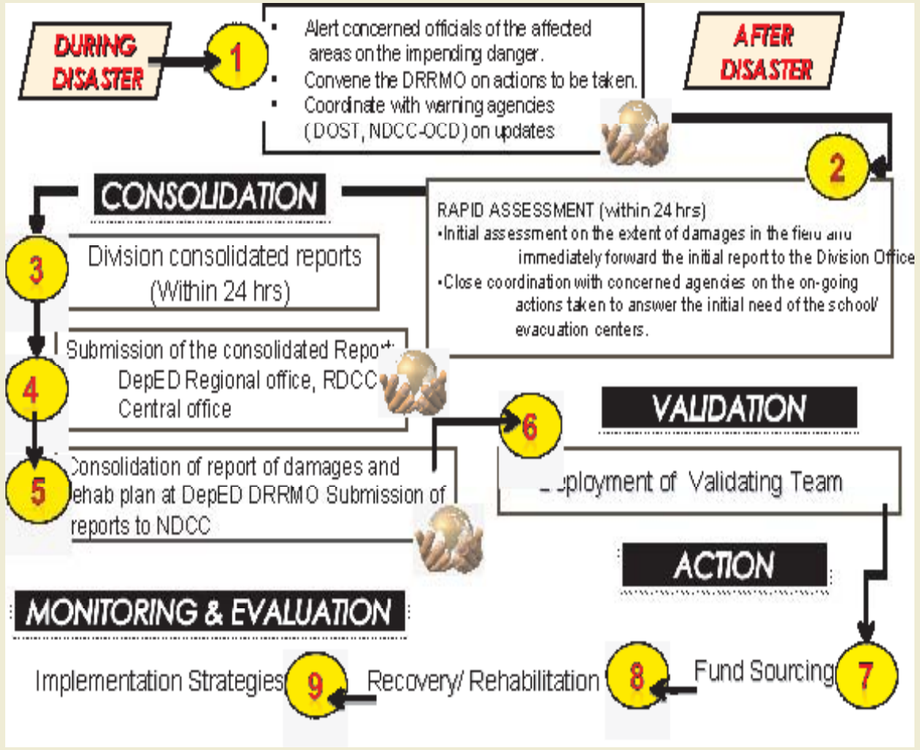


Figure 13: Flow of Activities

The DRRMO shall be headed by the Secretary of the Department of Education (DepED) as Chairman and the Undersecretary for Regional Operations as the Vice-Chairman. The DRRMO, being empowered with policy-making, coordination, integration, supervision, and evaluation functions, shall have the following responsibilities:

- Develop a DepED Disaster Risk Management Framework (DRMF), which shall provide for comprehensive, all-hazards, multi-sectoral, inter-agency and school-based approach to disaster risk management. The Framework shall serve as the principal guide to disaster risk management efforts in the DepED System and shall be reviewed on a 5-year interval, or as may be deemed necessary in order make it relevant and flexible to current changes.

- Develop, formulate, and lead the implementation of the DepED Disaster Risk Management Plan (DRMP) and ensure that this shall be considered and integrated in the Medium-Term Philippine Development Plan (MTPDP), in the DepED Budget, and in the Regional, Division and School Disaster Risk Management Plans nationwide.

- Ensure that all Regions, Divisions and Schools take adequate and appropriate measures on disaster management, including the preparation and upgrading of the School Mapping Exercise through the GIS-Based School Profiling System to facilitate disaster preparedness and mitigation.

- Ensure that disaster preparedness, mitigation, response and rehabilitation activities such as training, education and public information, repair and rehabilitation are given priority;

- Advice the President on the declaration of suspension of classes in areas extensively damaged by disasters and submits remedial proposals.

- Develop a Disaster Risk Management Information System and GIS-Based School Profiling System for storage, easy retrieval of relevant data for policy formulation, resource mobilization, planning and decision-making tools.

- Establish a DepED Disaster Operations Center that shall be managed by DepED regular employees on a twenty-four hour/seven days (24/7) basis as the need arises.

- Coordinate and meet with concerned government agencies and other stakeholders in education as often as necessary to effectively manage national/regional/division and school efforts on disaster risk management; and

- Conduct monitoring and evaluation to ensure the system's efficiency and provide interventions and corrective measures for the effective implementation of DRRM programs and projects.

- There shall be a Disaster Risk Reduction Management Office at the Regional level that shall establish an operating facility or a Disaster Management Center in their areas of jurisdictions.

The Disaster Risk Management Office at the Region, Division, District and School Levels shall also be organized which shall have the following functions:

- Identify, assess and manage the hazards and risks that may occur in their locality;

- Communicate about those hazards and risks, their nature, effects, early warning signs and countermeasures;

- Identify and implement cost-effective risk reduction measures or strategies;

- Take all necessary steps on an ongoing basis to maintain, provide or arrange the provision of trained and competent personnel for effective and efficient disaster risk management in their areas of jurisdiction;

- Respond to and manage the adverse effects of emergencies in their area of jurisdictions;
- Carry out recovery activities;

- Promote and raise public awareness of and compliance with policies and directives issued by the Chairman of DRRMO relative to disaster risk management;

- Develop, approve, implement and monitor School Disaster Risk Management Plans and regularly review and test the plan consistent with other national and local planning programs;

- Establish linkage and network with other local government units for disaster risk reduction and emergency response purposes;

- Formulate, prepare and issue Orders, Memoranda and Issuances consistent with the requirements of the National Disaster Coordinating Council (NDCC);

- Integrate risk reduction into school development plans, programs and budgets as a strategy in schools' sustainable development and improvement plans;

- Establish an operating facility to be known as the Region/Division/District and School Disaster Operations Center; and

- Prepare and submit to the Regional Disaster Risk Reduction Management Office, National Disaster Risk Reduction Management Office and the National Disaster Coordinating Council damage and needs assessment reports; and

- Include as part of the School Improvement Plan disaster risk reduction measures to ensure safety, and security of all teaching, non-teaching and schoolchildren.

Terms of Reference for the Chairman and Vice-Chairman

The Chairman

- The Chairman shall advise the President and the Chairman of the National Disaster Coordinating Council, Directors, Heads of DepED Offices and other institutions on the current status of disaster/crisis as well as on the programs and operations being undertaken by the Department to reduce the impact of the emergency situation;

- Establishes policy guidelines and sets priorities in the allocation of resources and services;

- Advises the leaders of the different action teams in accordance with the information/ advisory given by warning agencies like PAGASA and PHIVOLCS of an impending occurrence of hazards and activates the operationalization of the contingency plans;

- Announces the suspension of offices/and or classes on the basis of advisories given by the warning agencies;

- Provides assistance to the National Disaster Coordinating Council on advocacy and information dissemination campaigns on disaster risk reduction and management through integration in the basic education curriculum;

- Ensures that disaster risk reduction concepts are being mainstreamed in the education system and integrated in the basic education curricula;

- Ensures the provision of safe learning environment, child friendly spaces, alternative learning activities to displaces families/individuals/schoolchildren housed in schools as temporary holding centers;

- Activates the Disaster Operations Center and authorizes the 24/7 services of pre-designated officers and members of the concerned team;

- Convene and presides over meetings and conferences.

The Vice-Chairman

- Assists the Chairman in all his functions;

- Performs the functions of the Chairman in case of absence/leave or incapacity of the latter;

- Develops a disaster preparedness plan for the Department;

- Organizes and supervises the Disaster Operations Center;

- Ensures that appropriate trainings and capability building be set up for teachers, school administrators, non-teaching personnel, and school children;

- Maintains cooperative and collaborative efforts with principal officers of other government agencies and arranges for obtaining assistance relative to disaster risk reduction activities;

- Serves as overseer and evaluator during emergency/evacuation drills and exercises; and

- Does related work as may be assigned by the Chairman.

The DepED DRRMO shall serve as the central command and control for resource mobilization, response coordination and information management. During emergency situations, the DepED Disaster Operations Center shall be activated by the Secretary of the Department of Education as an Emergency Operations Center (DRRMO-EOC). As a matter of standard operations procedure and as may be required by the DepED Secretary, through the Chairman of the DRRMO, pre-designated members of the DRRMO shall render 24/7 duty at the EOC.

Main Functions

1. Operational Coordination

- Coordinate pre-defined pre and post disaster operational activities being undertaken by relevant agencies and ensure that all key actors are taken on board;

- Initiate and lead the conduct of a multi-agency damage and needs assessment mission as the post disaster situation warrants;

- Provide operational updates to the National Disaster Coordinating Council (NDCC) and Office of the President and all cluster members, making sure that they are all in the loop and keep abreast of the unfolding situation;

- Facilitate the conduct of a multi-agency debriefing of past disaster situations to look into areas of strength and areas for improvement;

- Allocate working stations for pre-identified cluster members who will be working at the EOC during disaster situations;

- Promote a synergistic multi-agency approach in managing the potential consequences of disasters in the country; and

- Facilitate the provision of support to areas affected as well as to operational Disaster Risk Reduction Offices in schools being mobilized for response operations and schools being used as evacuation centers.

2. Response and Resource Mobilization

- Maintain an updated database of all available response resources in the Department that can provide capacities to the schools like airlift operations, fire suppression, emergency health services, ambulance service/emergency evacuation, security, emergency social services, environmental emergencies, hazardous materials emergencies, search and rescue, engineering and basic utilities in coordination with the different DRRMO Teams;

- Assist in the formulation of mobilization SOPs for those response resources and operational support and arrangements like MOA and MOUs with partner agencies and cluster members and rehearse them as far as practicable;

- Facilitate the conduct of a post mobilization debriefing for all units deployed and utilized to look into areas of strength and areas for improvement

3. Information Management

- Maintain an updated database of relevant baseline information on school population, demography in the different regions, hospitals, school facilities, etc.

- Collate, validate and analyze information and undertake the appropriate steps to be taken based on pre-delegated tasks and responsibilities, otherwise recommend to the NDCC

- Executive Officer or the NDCC Chairman the necessary steps to be taken based on processed information for an enhanced decision-making process.

- Document all past disaster situations to include a review of the pre and post disaster activities undertaken by all key actors, and maintain a database of these documents;

- Development and integration of Disaster Risk Reduction in the curriculum.

- As a matter of standard operations procedure, all concerned shall take into consideration the reporting and flow of activities during and after a disaster as stated in Figure 13, to ensure timely, accurate, and reliable data gathering and reporting.

4.Coordination for Operational Capability

- Maintain active linkages with OPCENs of other NDCC member agencies and cluster members the synchronization of programs for operational capability upgrade;

- Explore possibilities of cross fertilization with other OPCENs in the area of staffing skills and competencies, equipment operations and maintenance, in house systems and procedures, database management and granting of access;

- Provide operational guidelines on the management of the School DRRMO

Personnel Requirements

1. Intelligence and Disaster Analysis Officer

Under the supervision of the Intelligence and Disaster Analysis Officer will be the Communications and Warning, Disaster and Needs Assessment, and the Security and Police Teams.

a. Communications and Warning Team shall have the following functions:

- Provide warning in close coordination with National warning agencies and through all available means, to areas threatened by slow onset disasters like storms, typhoons and consequent flooding, providing school officials, teaching and non-teaching personnel, and schoolchildren a clear understanding of what to expect and advises on appropriate precautionary measures to be undertaken;

- Alert available response agencies/unites at the national level and closely monitor the conduct of disaster response operations, mobilizing additional resources available as may be needed in the field; and

- Monitor the transition from emergency response and relief to recovery phase as may be required by the Secretary of the Department and or the Office of the President of the Philippines.

b. Damage Analysis Needs Analysis Team

- Evaluates crisis situations and determines courses of actions to be followed, and formulates guidelines in assessing the situation;

- Assesses information and advises the Chairman of DRRMO on possible measures to be undertaken in order to lessen the impact of the crisis;

- Submits recommendation for allocation of needed resource;
- Coordinates the plans and actions of the Group with the proper authorities whenever a crisis occurs;
- Monitor the probable consequences of potential, ongoing and past disasters or emergency situation around the country in close coordination with internal and external stakeholders in education;
- Coordinate pre-defined pre and post disaster operational activities being undertaken by relevant agencies and ensure that all key actors are taken on board;
- Initiate and lead the conduct of a multi-agency damage and needs assessment mission as the post disaster situation warrants;
- Facilitate the conduct of a multi-agency debriefing of past disaster situation to look into areas of strength and areas for improvement;
- Allocate working stations for pre-identified cluster members who will be working at the Disaster Operations Center during emergency situations;
- Promote synergistic multi-agency approach in managing the potential consequences of disasters in the country; and
- Does related work.

c. Police and Security Team

- Calls the local police of any bomb threat received through telephone or any other means of communication and reports the matter to the DRRMO Chairman;
- Assists the police in conducting bomb search operations;
- Secures the area and the entire DepED premises;
- Provides for personnel and vehicle movement control and open all exit routes;
- In case of fire, assigns a sub-group to the fire scene and coordinate with the fire suppression team to prevent looting and apprehend looters;
- Assigns a sub-group to the evacuation area to secure the properties and individuals evacuated.

- Systematically stores properties brought to the evacuation area and safeguard their release to their respective owners after the fire. Sees to it that all evacuated equipment and documents are returned to their respective sections/owners.
- Maintains a guarding system for personnel, materials and other installations;
- Makes an inventory of the returned documents/equipment and submits a report of losses/damages to the Vice Chairman, who shall in turn submit the same to the Office of the Secretary being the Chairman.

2. Education, Advocacy and Information Officer

The Education Information Officer shall have the following functions and shall organize under his supervision alternative learning, advocacy and public information, education and training, and health and sanitation teams:

a. Alternative Learning Team

- Coordinates with the Bureau of Alternative Learning System, Bureau of Secondary and Elementary Education, Commission on Higher Education (CHED and State Universities and Colleges on matters relative to the integration/mainstreaming of Disaster Risk Reduction (DRR) concepts in the courses offered;
- Provides alternative learning activities to schoolchildren in the evacuation centers and ensure continuity of academic instruction;
- Prepares modules and disaster preparedness materials as reference and support materials to teaching-learning activities;
- Provides alternative learning materials and keeps an inventory of available resource materials on DRR; and
- Does related work

b. Education and Training Team

- Trains and maintains pool of trainers on DRR;
- Initiates programs and projects to enhance skills and capabilities of teaching and non-teaching personnel on disaster risk reduction;
- Conducts researches and studies on disaster risk reduction, the impact/effects of integration/mainstreaming programs and projects in the curriculum and the impact of disasters in the education sector;

- Conducts capability training of teachers and non-teaching personnel on disaster risk management;

c. Advocacy and Public Information Team

- Conducts information dissemination campaign on DRR concepts and what to do before, during and after the occurrence of hazards;
- Serves as resource person during trainings, seminars and for a relative to disaster risk management;
- Provides learning modules and DRR materials to schools and the public;
- Publishes information on emergency situations, reports disaster damages and rehabilitation efforts to the National Disaster Coordinating Council and to the Office of the President;
- Coordinates with media and the Public Information Agency (PIA) on matters relative to advocacy and public information activities;
- Conducts studies and researches on DRR and disseminates results and recommends appropriate action.

d. Emergency Health and Medical Service Team

- Arrange with government health agencies like Department of Health, PNRC or other sources for first aid and medical self-help training;
- Supervise the selection of first aid or medical treatment areas in evacuation centers;
- Directs first aid or medical self-help operations and control the access to medical supplies;
- Establishes policies and rules governing the emergency treatment of badly injured persons;
- Maintains an adequate sanitation and hygienic standards and deals with matters related to emergency services;
- Monitors the storage and handling of medicines, goods, food and drinking water in evacuation in coordination with concerned agencies;
- Does related work as the need arises.

3. Plans and Operations Officer

The Plans and Operations Officer shall organize and supervise the evacuation, search and rescue, fire suppression, rehabilitation and engineering teams and shall have the following duties and responsibilities:

- Determines courses of action to be taken based on the recommendations of the Intelligence and Disaster Analysis Officer;
- Determines the type of action units to be utilized whenever there is a crisis;
- Maintains and/or supervises programs of operations and determines the necessity of utilizing additional action units;
- Coordinates with the Intelligence and Analysis Officer the operations being undertaken and those to be implemented.

a. Relief and Evacuation Team

- Systematically evacuates personnel, students and properties during emergency situations;
- Upon receipt of information from the Communication and Warning Team on the need to evacuate, the team shall immediately establish an evacuation area and take charge of evacuation in the following order of priority:
  - Occupants of the building, especially the injured;
  - Valuable documents and records of the office;
  - Personal belongings of personnel;
  - Office equipment and other movable facilities
- Receives evacuees/victims from the evacuation service leader;
- Provides housing for displaced persons/evacuees during emergency;
- Organizes evacuees into work brigades/committees;
- Ensure proper camp management of resources guided by the Minimum Standards on Education in Emergencies; and
- Conducts inventory and stock file of available resources.

b. Search and Rescue Team

- Locates/Removes injured or trapped persons in the area in coordination with SAR skilled agencies/groups;
- Organizes and trains the search and rescue teams provided for in the emergency plan, in cooperation with NDCC member agencies;
- Obtains appropriate equipment for search and rescue operations;
- Coordinates with PNRC and other response agencies on matters relative to search and rescue operations; and
- Coordinates with agencies/organizations/with specialized skills on search and rescue for possible deployment to affected areas during emergency situation.

c. Fire Suppression

- Organizes fire-fighting teams/brigades for initial fire fighting deployment;
- Provides fire-fighting instructions through locally available sources (Local Fire Department);
- Ensures that fire fighters know their stations and locations of fire fighting equipment in the area;
- Deploys fire fighting personnel to fire affected areas;
- Coordinates with the Bureau of Fire Department on matters related to fire suppression; and
- Maintains network with fire suppression agencies and organizations for joint trainings and fire suppression skills;
- Sets on the fire alarm in case of fire;
- Assesses the nature of fire and suppress it by using the appropriate fire extinguishers available or by practical means of putting it off such as wet jute sacks;
- Prevents the spread of fire by shutting off all ventilators and witching off all electrical breakers in the building;
- Alerts all office personnel in case evacuation is necessary;
- Maintains order and take control of FIRE EXITS to avoid crowding and confusion of occupants. Fast and orderly movement towards the fire exit must be achieved;

- Assists firemen in clearing safe routes/roads for fire trucks and fire hoses;
- After the fire, perform the following work:
  - Repair/replace all damaged fire fighting equipment;
  - Return and make an inventory of all fire fighting equipment;
  - Refill all fire exhausted fire extinguishers;
  - Assess the extent of damage, and
  - Prepare a report of fire damages.

d. Engineering and Rehabilitation Team

- Conducts monitoring and damage assessment of school properties and reports the same to the Chairman;
- Validates reports and determines cost of damages for budget allocation;
- Repairs and rehabilitate damaged structures;
- Provides technical assistance, maintenance procedures and precautionary measures to schools relative to the repair and rehabilitation of school buildings damaged by typhoons and calamities;
- Undertakes rapid assessment of damages caused by typhoons, floods and all other causes, in coordination with local DCCs and the R/DPFC and reports results to concerned offices;
- Assess structural integrity and stability of structures before occupying the same; and
- Recommends appropriate interventions for damaged structures;

4. Resources and Logistics Officer

The Resource and Logistics Officer shall take charge of resource mobilization, allocation and logistics support for the DRRMO. Under the Resource and Logistics Officer shall be the Fund Sourcing Team, Transportation Team and Supplies and Relief Team.

a. Fund Sourcing Team

- The team shall take charge of fund sourcing activities both from internal and external stakeholders of education;

- Coordinates and maintains an effective networking system with donor communities to complement, harmonize and synchronize humanitarian assistance and support during emergency situation;

- Determines the extent and kind of assistance to be provided to displaced families and individuals in the evacuation centers and source funding assistance;

- Facilitate release of financial humanitarian assistance during emergency situation and ensures its transparency, accountability and timeliness;

- Provides accounting and auditing rules and regulations relative to fund utilization in coordination with concerned agencies; and

- Does related work.

b. Transportation Team

- Takes charge of all mobilization procedures, provision of vehicles and transport facilities as deemed necessary;

- Determines the transportation needs and requirements;

- Assigns all available vehicles and transport units to the monitoring and damage assessment teams;

- Coordinates with counterpart transport team leaders and local transport groups for resource sharing; and

- Does related work.

c. Supply and Relief Team

- Coordinates with concerned agencies on the provision of supplies and relief goods to displaced families and individuals;

- Supervises relief operation, establishes relief and supply areas in the affected areas and consolidates list of recipients and supplies/relief goods still needed by evacuees;
- Maintains an inventory of non perishable goods and makes these available during emergency situation; and

- Does related work.

5. Database Management Team

The Database Management shall be taken charged by a Programmer as the head of the team and shall be assisted by five (5) encorders.

a. Programmer

- The main function of the database management team is to gather, consolidate, validate and analyze data caused by emergencies/calamities, and present its qualitative and quantitative impact on the education sector.

- Establish/Maintain a website for repository and retrieval of data on disasters/ calamities which can be used for information dissemination, policy formulation, resource allocation and decision-making.

- Designs worksheet/formats to be used in processing data caused by disasters;

- Monitors the utilization of disaster databases installed in the websites of the Regional/Division and updates the same whenever necessary;

- Provides technical assistance to the Officers of the DRRMO relative to the computerization of disaster related data; and

- Reviews/Evaluates submitted data/reports from the field.

b. Encoders

- Assists the programmer and officers of the DRRMO in processing disaster related data;

- Assists in the preparation of office orders, memoranda, communications and powerpoint presentations;

- Performs liaison work with other offices, follow-up on disposition of important documents;

- Coordinates with line government agencies on matters pertaining to data gathering, analysis, and presentation;

- Assists in the preparation of reports, checks, classifies official communications and maintains files of disaster related data; and

- Performs other tasks that may be assigned by the immediate supervisor or head of office.

Funding of Disaster Risk Reduction Management Activities shall be taken from the 5% of the total budget of the Department of Education set aside as a disaster management fund for disaster risk reduction, mitigation, prevention, prevention, response, rehabilitation, reconstruction and other works or services relative to disasters or calamities whether natural or human-induced.

The DepED Commission on Audit shall monitor and evaluate the use and disbursement of disaster management fund based on the disaster risk management plan as incorporated in the DepED Development Plans, Annual Work and Financial Plans.

Upon request and submission of damage and needs assessment report to the National Disaster Coordinating Council (NDCC), the National Calamity Fund appropriated under the General Appropriations Act shall be used for aid, relief, rehabilitation, reconstruction and other work or services in connection with calamities which may occur during the budget year or those that occurred in the past two (2) years from the budget year. Expenses under this shall include training of personnel and other pre-disaster activities and capital expenditures for pre-disaster operation, response, rehabilitation and other related activities.

The Quick Response Fund (QRF) from the contingency fund of the Office of the President is hereby constituted to support the initial and immediate disaster response operations and needs of the National Disaster Risk Reduction Management Office (DRRMO) and its participating agencies for the current year. The amount necessary for the continuous funding of the QRF shall be included in the Annual General Appropriations Act. No portion of the Quick Response Fund shall be used for the administrative expenses or as augmentation fund for regular agency programs, projects and activities not related to current calamities or disasters.

Regional/Division/District and School DRRMO with calamity and quick response fund allocations shall submit to the National DRRMO their monthly statements on the utilizations of these funds and make an accounting thereof in accordance with existing accounting and auditing rules and procedures. Priority allocations of both calamity and quick response fund shall be given to areas heavily affected by a calamity/disaster and were declared under state of calamity.

The DRRMO through the Chairman, shall submit to the Office of the President, National Disaster Coordinating Council (NDCC) and other concerned authorities within the first quarter of the succeeding year and every year thereafter an annual report relating to the progress of the implementation of disaster risk management programs.

Standard Operation Procedures for Mitigation and Prevention

Priority Actions

Risk Identification

The fundamental requirements are:

- High quality and detailed comprehensive hazard and vulnerability maps for major natural hazards need to be produced or updated;
- Knowledge enhancement and understanding of the nature and scale of impact of previous disasters and forms of vulnerability;
- Greater consideration of hazard-related issues in broader sustainable development and poverty reduction policies and programs of the Department;
- Appropriate, cost-efficient, post-disaster relief and rehabilitation efforts.

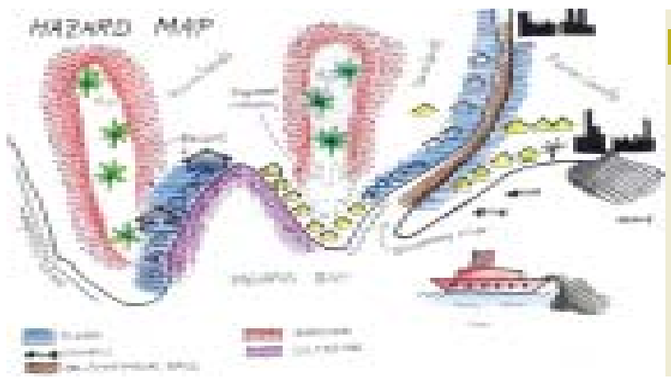
As part of the strategy to reduce risk, it is important not only to increase the focus on mitigation, but also on post-disaster support for early recovery and restoration to normal situation with resumption of teaching-learning activities.

Risk Reduction

Once the risk has been adequately identified, measures need to be taken to prevent, mitigate, and reduce the inherent risks.

The type of risk reduction measures to be implemented must be supported by:

- Appropriate institutional arrangements, including legislative and policy changes, as needed.
- Updating of governing policies, taking into account evolving roles of the central, regional, division and school levels;
- Tapping the education and emergency sectors, specifically utilities, into both emergency management strategic decision-making and operational contexts;
- Detailed review of institutional arrangements and capacities for disaster risk management to identify gaps and priorities;
- Adequate coordination and implementing capacity of the organized disaster risk reduction management office (DRRMO) from the Central,Regional, Division and school levels;



Hazard Mapping

Hazard mapping is the process of establishing geographically where and to what extent particular hazards are likely to pose a threat to people, property, infrastructure, and economic activities. Hazard mapping is one of the steps to identify risk.

- Greater organizational, management and task synchronization at both local and national levels;

- Resilience of the most vulnerable schools to hazard impact enhanced to help them cope with hazards when they occur;

- Emphasized participation of children and what they can do to help reduce risk.

Risk Sharing/Financing

The DepED bears the majority of costs caused by natural disasters. More effective options for financing disaster risk and relieving the burden of disasters from the Department is through the recent "cluster approach" *(see pages 52-53)*. Those schools without insurance must be encouraged to be insured. However, all schools must conduct regular inspection and maintenance of their facilities.

Warning Responsibilities

The management of each educational facility ensures that the warning signals can be received at the workplace / school rooms / offices. The school community must understand what the hazard warning signals are and what action is to be taken if the signal is given. This should be posted on the bulletin board and in conspicuous places where the school community will read it.

Crisis Communication Management Plan

This serves as a standard framework or guide during a disaster situation. The plan may be revised to adjust to the severity of the situation with consideration of the availability of spokespersons at that time and the necessary resources. It also helps DepED Officials and School Administrators to determine the Department's position and key message to the clientele.

What To Do Before the Disaster

The following are the preparations to be undertaken:

- Conduct risk assessment focused on the communication and exchange of information;

- Distribute an emergency directory of key officials that need to be contacted during a disaster;

- Conduct media or communication training of key spokespersons for public speaking (continuous). (Training of RDs, SDS, ASDS, Bureau Directors, Chiefs of all Division Offices, ASEC, USEC, Chief of Staff, Secretary);

- Familiarize speakers or spokespersons with the standard key messages official statements, press releases;

- Conduct a disaster/contingency Q and A Drill quarterly; and

- Update/reiterate or enhance the Disaster Risk Reduction Management Office (DRRMO) communications management policy.

What to do During the Disaster

- All disasters should be reported to the Chief of the Disaster Operations Center of the DRRMO;

- Designated Communications Spokesperson or his duly authorized representative only may release information to the media. Other DepED officials or personnel may not divulge to media, or to any person who may pass it to the media, information regarding confidential or security matters on the preparation against an impending human-made disaster, if such revelation will prejudice the preparation to meet said contingency;
- Responses to interviews should be proactive, responsive and action oriented; and
- At all times, if practicable, good media relations must be maintained, which helps to boost public confidence to the Department.

What to Do After the Disaster

Monitoring Stage / Impact Assessment

- Evaluate the response to the event and determine what needs to be improved that can serve as a guide for future incidents;

- Check if the responses brought negative impact and take remedial and corrective measures;

- Mobilize a monitoring team covering tri-media and other tools to check coverage, content treatment and any adverse reactions from other parties;

- Ensure that all members of the monitoring team are well-equipped with tools and facilities crucial to the conduct of their tasks during this phase;

- Secure all important documents and make them available;

- Document significant conversations, decisions, details and media questions in order to effectively evaluate emergency communication management;

- Furnish all members of the crisis communication team with additional materials gathered in the course of the monitoring;

- Ensure that all concerned individuals are kept up to date by promptly returning phone calls, issuing press statements (as needed), etc;

- Seek legal advice whenever necessary.

Handling Media Interviews

In DepED field offices, the Heads of Office serve as spokespersons for information required by media relative to his/her office's function concerning disaster risk management.

For purposes of media interview the following are the authorized spokespersons:

- Central Office: Hon. Secretary or authorized representative

- Regional Office: Director or authorized representative

- Division Office: Superintendent or authorized representative

- Schools: School Principals or Heads

In cases of impromptu, unannounced, unscheduled interviews where securing clearance from the Secretary or Head of Field Office is not possible, the spokesperson will only disclose information that is aligned with the Department or field offices' official statement, if any. If there is still no official statement, refer the media personnel politely to the Office of the Secretary / Head of Field Offices.

All interviewees shall only address the issue at hand and avoid opinions or speculations on the situation. Personal views are not appropriate to be given to the media.

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General Guidelines for the Communications Response Team:

- Be honest;
- Communicate clearly;
- Be polite and precise;
- Be compassionate;
- Relax and direct voice toward the interviewer;
- If the answer is not at hand at the moment, politely respond by saying that the matter will be addressed later;
- Messages reflect the DepED's stand, leadership role, and resource status.

Documentation and Filing:

- Keep news clippings for future reference; and
- Keep a record of all the chronological events during the situation.

Establishment OfA Disaster Operations Center (DOC)

A Disaster Operations Center shall be established at all levels, equipped with the necessary materials, survival and first aid kits, and a quick response fund to be spent whenever the need arises. In case there is no functional DOC in the affected area, the higher level DOC shall take charge.

Managing the DOC:

- The DOC shall be managed by the Disaster Risk Reduction Management Office.
- The DOC shall assess and evaluate all the activities of the teams under it.
- The DOC shall determine overall priorities.

Contingency Planning

Contingency planning is essential in every disaster control group in order to facilitate accurate disaster assessments. Planning the assessment methodology, identifying and briefing assessment teams and local contacts, allocating the necessary resources, and conducting drills are vital disaster preparedness actions that shall be undertaken by the disaster control authorities.

The six general functions of the preparedness process are to:

- Collect and maintain baseline and background data;
- know your personnel and material resources;
- Pre-identify likely problem areas and needs;
- Establish standing agreements for emergency coordination of staff, communications, transport, etc., among agencies and assisting organizations;
- Adapt the assessment and reporting forms and surveys to the needs of the school /locality; and
- Initiate training and briefing activities, and emergency drills, as appropriate.

Response Stage

Priority Actions During the Occurrence of Hazard

Emergency responses are measures taken immediately prior to, during and following disaster impact. They are directed towards saving life and protecting property and towards dealing with the immediate damage caused by the disaster. The quality of response measures greatly varies in accordance with the nature and extent of preparatory measures undertaken.

Phases of Response

First Impact Response
Priority actions during this period are:

- Countering the initial effects of disaster impact as rapidly and effectively as possible;
- Using all suitable resources in a coordinated manner;
- Providing urgent needs to stricken areas;
- Rehabilitating as fast as possible those facilities and systems which are of priority importance to the teacher-learning activities in schools.

During Impact Response

"During impact response" period is the vital bridge between the period when there is the shock and disruption caused by the hazard impact, and the period to normalize the situation.

This involves:

- Continuing certain relief services;
- Converting some of these relief activities into formal types of rehabilitation programs;
- Implementing temporary measures such as emergency clearance of debris, repair of educational facilities, restoration of utilities, etc.; and
- Assessing all post emergency phase activities and requirements and integrate them into a comprehensive recovery program.

Rescuing Trapped Individuals

- The DRRMO must summon the Search and Rescue Team, coordinate with the PNRC, Local Disaster Coordinating Council, and immediately start to extricate the victims through the help of the knowledgeable and authorized Search and Rescue Team;
- Activate the Incident Command System and establish first aid stations immediately within the vicinity of the crisis area to take care of the injured. Casualty posts shall also be established in the nearest school building or any unoccupied permanent structure that had withstood the hazard to take care of those who have developed shock, preparatory to their evacuation to the nearest hospital.
- Never transfer rescued victims directly to the hospitals. Shock must be controlled first to prevent loss of lives. Let the paramedics decide when to transfer the patient.
- School utilities like water, electricity and communication facilities must be restored as soon as possible.
- Accurate dissemination of information to the public shall emanate from the incident command center.
- Communications between operations center and field units (relief, demolition, search and rescue, medical) shall be maintained.
- Traffic movement must be controlled.

Shutdown Responsibilities

In case of an emergency, the Incident Command System shall give serious consideration to incorporating therein a provision on the shutdown of the school or office electrical equipment, machinery, and other electrical or gas appliances including but not limited to power and water supply, which may contribute to the emergency.

philippine drm system
5

When Schools Are Used as an Evacuation Center

Evacuation is the process of moving or transferring people from hazard threatened or stricken areas to a safe place or places.There are two types of evacuation: 1) precautionary, that is done prior to impact; and 2) post impact, which involves the movement of victims from hazard-stricken areas into safer surrounding conditions.

What is a School Evacuation Center?

It is a temporary shelter where survivors in emergencies can take refuge. It is a venue where evacuees can be helped in coordination with concerned government and non-government agencies in their basic needs.

- DepED officials may allow the use of the school as an evacuation center when there is no other safer place where the students/pupils can be accommodated.
- People from the community may be allowed to use the school as a temporary holding center.
- In case the school is used as an evacuation center, DepED officials and personnel shall be responsible for the preservation of the school facilities and properties for the duration the school is being occupied by evacuees, so that after the emergency period the school can resume operation as soon as possible.

Objectives of Evacuation

General: To save lives and properties, minimize suffering and deal with the immediate damage caused by an emergency.

Specific:

- To handle effectively evacuation before, during and after an emergency;
- To assist the displaced survivors for immediate attention by the concerned agencies.

Evacuation of School Personnel and Students

In case an imminent danger of a hazard threatens the school during classes with an immediate need to evacuate school personnel and pupils/students out of the school to a safer area, the following provisions shall be strictly observed:

Officials responsible for the orderly and safe evacuation movement of personnel and pupils/ students are:

- The Team Leader and members of the School Evacuation Team shall initiate the immediate actions.
- School Evacuation Team shall consult and coordinate with other government agencies in the locality as to where the safe area to evacuate out of the school the personnel and pupils/students
- All classroom teachers at the time the hazard is expected to occur; shall be responsible as Classroom Evacuation Leader of his/her classroom pupils/ students in their evacuation movement out of the school into the School Evacuation Team or DRRMO and LDCC designated safe area.



Important !

Evacuees must not return to disaster affected area until the area is declared safe. Procedures on evacuation differ according to the type of emergency.

- During such evacuation of pupils/students out of the school, Classroom Evacuation Leader shall coordinate with the School Evacuation Team and the DRRMO on the Evacuation movement
- Classroom Evacuation Leader of adjacent classroom with puypils/students whose teacher is not present, shall be responsible in joining them to his/her pupils/students in the evacuation movement out of the school.
- During evacuation movement out of the school and even in the safe area where pupils/students have been evacuated, the Classroom Evacuation Leader (classroom Teacher) and School Evacuation Team shall continue to be responsible for the care and safety of the pupils/students until their custody have been taken over by parents or guardians or relatives.

Prioritized Evacuation Movement of Personnel, Pupils/ Students, and properties out of the school and into safe area shall be in accordance with the following provisions:

- Grade I and II pupils, First Year Students, disabled and sickly or injured pupils/ students/personnel shall be first priority in evacuationmovement out of the school into designated safe area;
- Grade III and IV, Second Year Students, shall be Second priority in evacuation movement out of the school into designated safe area;
- Grade V and VI pupils, Third Year and Fourth Year Students, and aged teaching and non-teaching personnel shall be third priority in evacuation movement out of the school into designated safe area.

Listed below are priority actions that DepED shall take into consideration during evacuation:

- Inventory of available facilities and amenities;
- Activation of Disaster Operations Center (DOC);
- Activation of disaster welfare inquiry desk and NGO desk;
- Identification and visibility of the DRRMO;
- Registration of evacuees;
- Provision of basic requirements (nonfood/ food);
- Conduct masterlisting of evacuees;
- Post masterlist of occupants in their rooms;
- Assist evacuee identification by room leaders;



The School as an Evacuation Center

To ensure that the school can resume operation immediately after the crisis is over, school facilities and properties must be preserved while the school is being used as an evacuation center.

(Photo by AP)

- Make a profile of evacuees;
- Organize evacuees into work brigades/ committees;
- Assess other needs of evacuees (eligibility for service);
- Undertake/implement activities/services;
- Ensure proper management of resources;
- Special attention be given to long term process;
- Conduct consultations with evacuees;
- Assist families in preparing their rehabilitation plan;
- Initiate regular consultations with other service providers and NGOs, P0s. Present to them results of consultation with evacuees. Identify areas of support needed.

Facilities and Amenities Required in Evacuation Centers

- Water Facilities
  - Water pumps/artesian wells/ water tanks
  - Water containers
  - Potable water for drinking
- Lighting facilities or installation of electric power. If possible, gas lamps, flashlights, candles, matches and other indigenous lighting systems in the area shall be made available;
- Adequate comfort rooms and toilets;
- Space, materials, supplies for sleeping
- Mats or cartons for sleeping areas
- Blankets and mosquito nets;
- Stockpile for one week of relief supplies and other domestic items and materials;
- Storage space for stockpiled commodities;
- Space for an office which can accommodate at least a table and a few chairs for use of workers assisting the evacuees;
- Compost pits, empty big cans or drums and large plastic bags for garbage disposal; and
- Cooking areas and equipment, and dining areas.

Committees at the Evacuation Center

Committees at the Evacuation Center include but are not limited to:

- Committee on Information;
- Committee on Relief Operation;
- Committee on Water, Sanitation and Hygiene;
- Committee on Medical Services;
- Committee on Peace, Order, and Security
- Committee on Facility Maintenance
- Committee on Education and Spiritual Upliftment;
-)• Committee on Drills and Exercises, Recreation and Sports.

Systems and Procedures During School Evacuation

Priorities in school evacuation are the vulnerable groups such as elderly, children, disabled, pregnant women, and very sick people. The following systems and procedures are also important:

The Buddy-Buddy System:

The buddy-buddy system is a procedure in which two people, the buddies, operate together as a single unit so that they are able to monitor and help each other.

Emergency Warning System:

The emergency warning system provides an audible signal throughout the buildings and school compound to warn occupants of an emergency situation.

This device is an integral part of the office system and it is activated upon discovery of an emergency to alert occupants of an impending or on-going emergency. All occupants must know the meaning of the warning signal. Its effectiveness must be tested on a regular basis. There may be a public address system which is a centralized notification system that can be used to inform and instruct occupants in an emergency incident. It needs an alternate power supply in case the regular supply is interrupted.

Developing an Evacuation System and Procedures:

Each school or office must assign an evacuation team leader who directs the smooth flow of an evacuation during an emergency. The number of evacuation team members for each office or department or school, will depend upon the number of occupants to be evacuated. Level of alertness must be a part of the Contingency Plan and be understood by the evacuation team members and occupants. Specific instructions must be announced through the Public Address System and/or other means of warning. Signage indicating the exit ways must be clearly posted in key places. This signage must be luminous and/ or reflectorized, in standard size and posted at eye-level height.

An emergency lighting system must also be installed to the exit ways to guide the evacuees. This emergency lighting system must be capable to penetrate through smoke. As part of the Contingency Plan, the responsibility of whether or not to evacuate the personnel, information, equipment or operation, rests on the shoulders of the Head of the organized Disaster Control Group based on his personal assessment in line with the prevailing situation.

To avoid or minimize casualties and further damage, the decision to evacuate the facility shall be made as fast as possible. There must be pre-designed evacuation areas. However, if the designated evacuation area is no longer safe for the evacuees, then an alternate evacuation area must be a part of the Plan. Head counter/s must record all names of evacuees. A list of names of those missing, injured or transported to hospitals must be posted at the Information Desk. The Information Desk caters to inquiries of media, relatives, friends and others.

How to Prevent Panic

Panic is sudden, unreasoning, hysterical fear, often spreading quickly. It is conceivable that, despite pre-emergency preparation, a disorganized group may be on the verge of panic. Panic in emergencies is minimized by people who know how to respond to the emergency and have practiced the Contingency Plan.

DepED personnel should be prepared to deal with this in terms of the following principles:

- Provide assurance: Exert positive leadership. Reassure the group by giving instructions and information calmly and clearly.
- Eliminate Unrest: Dispel rumors. Identify trouble makers and prevent them from spreading discontent and fear.
- Demonstrate decisiveness: Suggest positive actions. Indicate what to do rather than what not to do.

Critical Incident Stress Debriefing

Critical incident is an event caused by natural or man-made hazards that has the potential of causing powerful reactions in the majority

who are exposed to it. Strong reactions if not discussed and understood can interfere with work and home life during and after the event.

Critical Incident Stress Debriefing (CISD) is a preventive stress management strategy designed to assist affected people in handling the resulting stress. Debriefing was originally developed to assist crisis response teams in recognizing and managing their own normal reactions to traumatic exposure. Later, it was used to assist victims, survivors and disaster relief workers as well. Through debriefing, individuals realize that experiencing severe stress during a critical incident is a normal reaction, and the stress is minimized.

The Committee on Medical Services in coordination with concerned agencies shall be responsible for the following functions:

- Assist victims to deal positively with the emotional effects of a severe event;
- Provide education about the current and anticipated stress response;
- Provide information and support for coping and stress management;
- Coordinate with the Health and Nutrition Center (HNC), Department of Health(DOH) and request assistance in the conduct of CISD for the victims.

For more information about CISD, refer to Appendix 3.

Chapter 6

Ensuring Continuity of Instruction



This chapter focuses on the child-rights based disaster risk management, alternative learning venues, alternative delivery of formal instruction, and emergency procurement system for rehabilitating school buildings and purchase of other instructional materials. This chapter provides for ensuring the continuity of instruction during the period when the classroom / school is not available for instructional purposes.

The Department of Education, as mandated by the Constitution is primarily responsible for the education and manpower development of the country and for the formulation, planning, implementation and coordination of the policies, plans, programs and projects in the areas of formal and non-formal education at the elementary, secondary and the alternative learning system. This mandate also include supervision of all basic educational institutions, both public and private, as well as the establishment and maintenance of a complete, adequate and integrated system of education. The Department is also in-charge of raising the standard of basic education, and administrative efficiency in the delivery of educational services that are relevant and in pursuance to the national development goals. The Department, as provider of basic education serves 19 million school children and envisions highly competent, civic-spirited, life skilled and God-loving Filipino youth who will be the future contributor towards the building of a humane, healthy and productive society.

In line with these mandates, the Department of Education (DepED) is now heading towards the complete decentralization policy through the implementation of the Decentralized Management Development Program (DMDP), a six month program that aims specifically to address the issues hindering the full roll-out of decentralization in DepED as contained in the R.A. 9155 otherwise known as the Governance of Basic Education. DMDP is a decentralization strategy designed not only to make the delivery of basic services more efficient and effective, but also to produce the best results for the basic education sector in terms of learning and management.

The policy on decentralization is being supported through the implementation of the School-Based Management (SBM), a key component of the department's Basic Education Sector Reform Agenda (BESRA). BESRA is a widely-accepted reform initiative which recognizes that schools, as the key providers of education, should be able to continuously improve by being empowered to make informed and localized decisions based on their own unique needs. As a component of BESRA, SBM on the other hand gives school heads/ Principals and their teachers a wide opportunity to create linkages with the local government and the private sector and be able to tap them based on the principle that the people directly involved and affected by school operations are the best persons to plan, manage and improve the school. This component aims to create an environment where all the people involved in the decentralization process not only agree but also commit to make the change happen by strengthening their capacity to perform their tasks under a decentralized set-up. The role of the national, regional and division offices is to make sure that all the necessary support structures are in place to aid the local stakeholders in managing the schools.

In view of the decentralization policy, only public secondary schools enjoy fiscal autonomy which leaves the majority of public elementary schools dependent on mostly centralized management set-up. In effect, public secondary schools are more independent and may formulate their own policies in mitigating the impact of hazards based on local situations.

Education of school children is most often affected when a disaster hits the community where the school is located. The school is often used as an evacuation center for affected families in the community. As an evacuation center it is no longer conducive to teaching-learning activities. However, it is the primary duty and responsibility of the school to continuously deliver instructional services to the school children as mandated by the following legal bases:

Legal Bases

Article XIV of the Philippine Constitution declares that "The State shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make such education accessible to all." Education is only one of children's rights that the Department has to provide, but is also a key to ensure the full realization of many other important constitutionally protected political, economic and social rights.

Presidential *Decree No. 603*. The Child and Youth Welfare Code identified in Article 2 – Rights of a child which guarantees the exercise of the following:

- Dignity and worth of a human being
- Right to a wholesome family life; well-rounded development, balanced diet, adequate clothing, sufficient shelter, proper medical attention, to be brought up in an atmosphere of morality and rectitude, education, full opportunities, protection against exploitation, care, assistance and protection, efficient and honest government and to grow up as free individuals in an atmosphere of peace, understanding, tolerance and universal brotherhood.
- Child rights-oriented community response and governance in the country.

Republic Act 4881, promulgated in 1967, "Affirms the duty of the State to support the family in the upbringing of their children to be useful men and women" and orders the creation of a Council for the Protection of Children (CPC) in every city and municipality. It tasked the CPC to "assure proper direction, supervision, and guardianship in the training, education, and other interest of its minor citizens".

The World Declaration on Education For All prescribes that Basic Learning Needs (BLNs) shall be made available to all by various means. BLN comprise both essential learning tools (literacy, numeracy, oral expression and problem solving) and the basic learning contents (knowledge, skills, values and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning. This level and form of education may be delivered to learners by way of schools or formal education or by way of alternative learning schemes e.g. informal and non-formal education.

In view of this declaration, continuation of education shall be provided to all including asylum-seekers and refugee children coming from countries affected by emergencies. The Department of Foreign Affairs shall determine asylum procedures in order to ensure that the right to education of these children are protected and enjoyed.

Guided by these mandates, the Department issued DepED Order No. 9, s, 2005 to institute measures at school level to increase engaged time-on tasks of the students and teachers in teaching and learning. The Department also formulated the School Improvement Plan (SIP) and all its components.

The School Improvement Plan (SIP)

All schools nationwide are required to implement a School Improvement Plan (SIP) as shown in *Figure 14* which contains standards and requirements for total school improvement. The school improvement plan takes into consideration mainstreaming disaster risk reduction concepts in the teaching-learning environment as well as the basic education curriculum.

Figure 15 indicates the SIP components as linked with the disaster risk reduction in schools.

In case of a disaster, it is essential to know the current situation of the school and its population, as in *Figure 16.* Data should be gathered in order to know the needs of every student/pupil in the damaged area. The following data should be determined:

- Number of school buildings damaged
- Extent of damage caused by the emergency situation
- Number of children in need of instruction
- Location of the target groups
- Titles and number of Instructional materials available
- Existing physical facilities that can be used for formal instruction.

Alternative Learning Venues

In the event of damaged classrooms/schools the following should serve as alternative learning venues to ensure the continuity of learning:

- Tents
- Makeshift Classrooms
- Covered Court/Gyms
- Chapel
- Barangay Hall
- Social Action Center
- All other alternative safe and adequate structures

For a private facility, school authorities shall initiate the preparation and signing of a Memorandum of Agreement (MOA) to ensure that such facility will be made available to the school in case of a disaster.

Alternative Delivery of Formal Instruction

Alternative delivery of formal instruction is an emergency response during a disaster. It refers to any activity that will ensure the continuity of student learning in the event that the classroom/ school is not available for instructional purposes. It is a mechanism that the school shall implement to ensure continuity of instruction during emergency situations.

This is in compliance with the NDCC policy contained in The Policy Guidelines on Child Rights-Based Disaster Management in cooperation with the Office of Civil Defense, Council for the Welfare of Children and the United Nations Children's Fund (UNICEF). The guidelines state that even during pre-disaster phase:

- The Department of Education (DepED) and the Commission on Higher Education (CHED) shall integrate programs/ activities on Public Information and Education Campaign (PIEC) specific for children concerning safety counter measures on emergency situations under its existing training modules and shall conduct PIEC regularly in high risks areas;
- DepED and CHED shall integrate disaster preparedness and management into their curricula;
- Concerned Local Government Units (LGUs) shall initiate a Disaster Safety Awareness Program for Children; and
- At an early age, a child shall learn disaster safety measures in times of emergencies.

figures



Figure 14:The School Improvement Plan (SIP)

figures

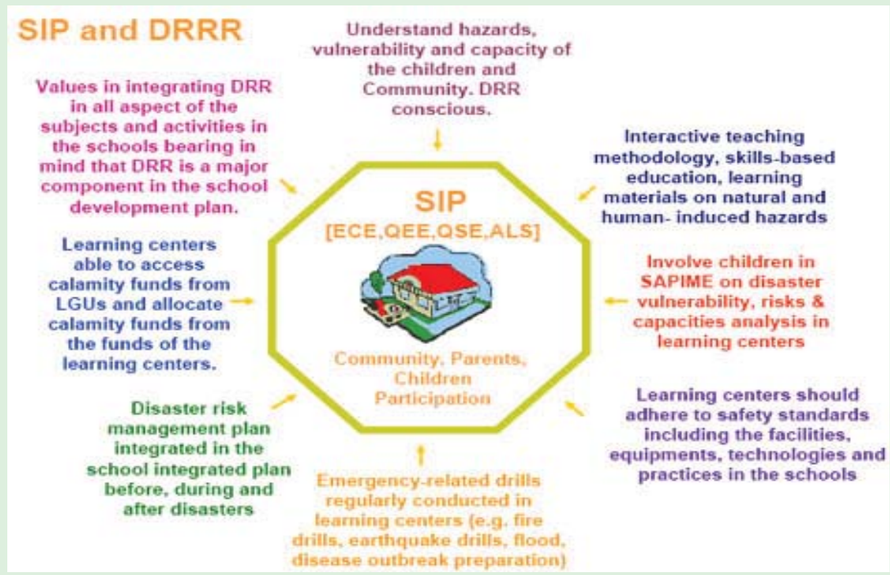


Figure 15:The School Improvement Plan (SIP) and DRR

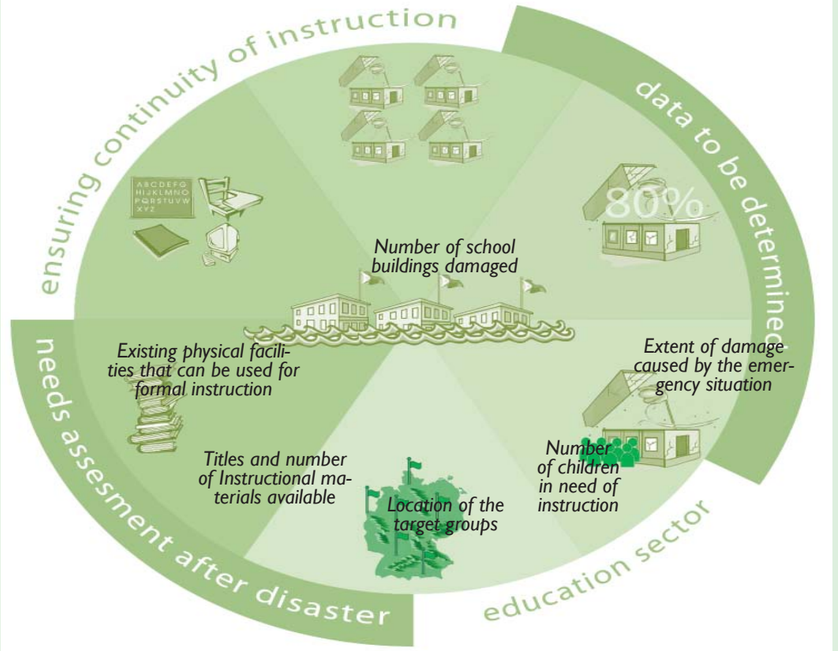


Figure 16: Needs Assessment After a Disaster

The Guidelines also state that during an emergency situation, DepED and CHED, in coordination with the Department of the Interior and Local Government (DILG) and local disaster coordinating councils (DCCs) shall provide recreational and educational activities and alternative learning sessions (ALS) to be held in the evacuation centers to address the learning needs of displaced children and out-of-school youth. There shall be continuing education of displaced children in the evacuation center and relocation site with due consideration for other culturally responsive education systems, such as the MADRASA Education Program for the Muslim population, having diverse socio-cultural orientations. The local Social Welfare Office shall also provide day care services for pre-school children.

The following are suggested available alternative instructional materials that schools may use during an emergency situation:

For Elementary:

- The Alternative Delivery Mode (ADM) for Grade IV - VI
- Improvised Writing Exercises, Mathematics Workbooks, Stories written on Manila Paper for Reading
- Alternative Leaning System (ALS)
- Day Care Services for Pre-School Children
- Other instructional materials available at the Division, Region and Central Office.

For Secondary:

- Effective and Alternative Secondary Education Modules (EASE)
- Distance Learning Modules (DLM)
- Available textbook materials
- Alternative Learning System (ALS)
- Other modes of delivery system available at other schools, Division, Region and Central Office.

Recommended Actions to Ensure Continuity of Instruction During Disasters

Preparedness and Mitigation (What to do before a disaster):

- Require every school to prepare a School Improvement Plan (SIP) integrating all the basic elements to provide for continuity of instruction.
- Conduct an inventory of existing and available alternative materials of all learning levels.
- Recommend to the Division Office the reproduction of identified alternative instructional materials.
- Ensure that each school, Division Office and Regional Office keep a file or copy of the existing and available alternative instructional materials for use in case of disaster.

Response (What to do during a disaster):
Every teacher at the school level shall

- Identify the learning competencies/ concepts to be covered during the period when classes are disrupted;
- Borrow adequate copies of the materials for the affected students;
- Orient the students and parents on what, when, why and how to use the given materials;
- Monitor the progress of the students during the period when classes are disrupted; and
- Coordinate closely with the parents and other teachers of the affected students to ensure that the children are guided with their assigned tasks.

Rehabilitation (What to do after a disaster):
Every teacher at the school level shall

- Conduct an inventory of damaged textbooks/equipment for possible replacement and/or procurement;
- Conduct an assessment to determine the progress of the student's learning. The assessment results will serve as the starting point of the teacher to continue the lesson;
- Assess the effectiveness and appropriateness of the materials being used by the students during this period of time;
- Recommend to the Division Office through the school head/district supervisor other alternative materials that will address the needs of the students; and
- Be responsible to account for and return borrowed materials to the Division Office for the use of other schools when the need arises.

Minimum Standards for Education in Emergencies (MSEE)

With institutionalization of the Cluster Approach in humanitarian response *(See Chapter 5, Section 3)*, the minimum standards for education in emergencies will also be adopted as suggested by the Inter-Agency Network for Education in Emergencies (INEE), one of the Education Cluster members. This is corollary to the Sphere Project developed in 1997 to address concerns related to quality and accountability in humanitarian responses. It created the Humanitarian Charter that emphasizes the "right to life with dignity" through setting minimum standards in the provision of water, sanitation and hygiene promotion, food security, nutrition and food aid, shelter, settlement and non-food items, and health services during emergency situations.

The MSEE set the following goals to be achieved during an emergency situation:

- A common starting point to reach a minimum level of educational quality and access in schools;
- A tool to improve coordination and enhance accountability and predictability;
- A tool for capacity-building and training;
- Aid to strengthen the resilience of Ministries of Education; and
- Tool to promote education.

These goals were conceptualized because during adverse situations there is a felt need for formal, informal, and non-formal education programs, based on the following important issues:

- Individuals do not forfeit their right to education;
- Education is a priority humanitarian response;
- A broad based desire to ensure a minimum level of quality access and accountability for education in crisis situations.

Emergency Procurement System for Rehabilitation / Replacement of School Buildings, Equipment and Fixtures

During emergency situations, school buildings, textbooks, instructional materials and other educational facilities are destroyed which results in disruption of classes. In the past, rehabilitation efforts were slow due to bureaucratic procedures in purchasing of the needed supplies and materials for rehabilitation, which contributed to prolonging the effects of the disastrous situation. In 2006, the Government Procurement Policy Board (GPPB) issued a circular to clarify the procurement process in cases of natural or man-made calamities. GPPB Circular No. 03-2006 *(Appendix 4)* dated December 6, 2006 was issued to identify the appropriate mode and procedure of procurement under Republic Act 9184 and its Implementing Rules and Regulations Part A in case of natural or man-made calamities.

In case immediate procurement is needed due to the occurrence of natural or man-made calamities, the alternative mode of negotiated procurement under Section 54.2(b) of RA 9184 and its IRR-A may be adopted in order to prevent prolonged damage to or loss of life and property and to immediately restore vital public services, infrastructure facilities, and other public utilities.

Under this mode, the procuring entity simply negotiates with a supplier, contractor or consultant of good standing, situated within the vicinity where the calamity or emergency occurred.

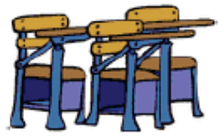
While it is the school's primary duty and responsibility to continuously deliver instructional services to students and at times it may serve as an evacuation center in times of calamity, ensuring safety of DepED properties should be given important considerations. These will be determined and discussed in the next Chapter.



Table 3: Minimum Standards for Education in Emergencies
(Source: Education in Emergencies, UNICEF, 2006, page 175)

Chapter 7

Ensuring Safety of DepED Properties



Educational facilities like school buildings, laboratories, equipment, instructional and non-instructional materials, supplies, and other properties are essential components of the learning environment. All these can be instrumental in raising the quality of education as well as continuing educational services during emergency situations.

This chapter deals with ensuring safety of DepED properties particularly school sites and buildings, facilities, equipment, fixtures, records, and other properties. It provides some information and practical tips to ensure that these properties are safe and secured.

School Sites and Buildings

School Sites

The location of a school is vital for school operation and development. Ideally, a school site must have access to a public road, preferably located on a quiet street and not shut away from main highways, nor by private property nor by dense grooves of tall trees. There should be no rivers and swamps, or irrigation ditches around school sites. Its immediate vicinity shall be free from any condition endangering the health and safety of school children. The contour of the land shall be preferably level and have no irregular boundaries. An agricultural land with sandy loam soil is the best site for a school as the topsoil is properly balanced to support vegetation and permits surface drainage without soil erosion. The subsoil provides a proper base for economical and substantial foundation of the buildings to be constructed. Ground area occupied by school buildings and other structures shall not exceed 40% of the site in order to provide adequate open space in compliance with the national regulations and standards pertaining to setbacks and distances between buildings.

Generally, existing school sites do not conform to the ideal description if their locations were acquired through donations or low cost purchase for purposes of establishing school in a community where there is no option in the selection of a school location.

To ensure that a school site and its vicinity will be safeguarded from hazards, a school mapping exercise shall be undertaken in all schools to provide a Geographic Information System - Based School Profile (GIS-BSP) which shows different features and identifes areas prone to hazards like landslide, soil erosion, floods, earthquakes and others. The school profile shall serve as baseline data for future establishment of new schools, resource mobilization, and prioritization of improvements and development.

School Buildings

The availability of adequate and conducive shelter for instructional activities is necessary to maximize teaching and learning process in schools.

School buildings shall be designed and constructed in accordance with DepED standards, including standards for resilience. A safe school Pambansa Bilang 344, (Accessibility Law);

The foregoing guidelines are intended to complement accepted architectural and engineering principles, and the provisions of the National Building Code of the Philippines, and other relevant rules, regulations and ordinances promulgated by the national and local agencies. It is also important that ergonomics, anthropometrics, thermal comfort, illumination, acoustics and colors be given due consideration.

Building Risk Reduction Requirements

In designing and constructing school buildings, safety and risk reduction measures shall always be considered, like the following:

Main Entrance

- The main entrance shall be located preferably on a secondary road and gates must be designed to swing in to the school property;
- Provide separate service entrance for the public/students;
- Main entrance shall provide enough clearance for fire trucks and medical vehicles.

Electrical Fixtures

- Require protective covering for all electrical wirings and fixtures;
- Install a fire alarm system that is affordable;
- Provide environment-friendly fire extinguishers;
- Report any defective electrical wiring and fixtures to experts;
- Hang curtains in the classrooms away from wall-mounted fans;
- Conduct periodic assessments of electric load capacity.

Stairs/Handrails

- Avoid smooth or polished step and floor surfaces and provide non-slip nosing to minimize the chance of slipping on stairs;
- Step treads should be not less than 0.25m deep and rise not more than 0.20m per step. They should be regular.
- Always provide a landing with railings between a doorway and stairways.
- Distance between railings shall be not more than 100 mm. (4 inches) so that pupils/students cannot squeeze through;
- For abrupt changes in floor elevation, preferably provide a ramp to avoid freak accidents;

Windows

Windows shall be provided with security grills and an emergency exit.

Doors/Exits

Classrooms shall always be provided with at least two swing-out doors at the opposite sides of the classroom.

Walls

Walls shall be smooth finished to prevent injury to highly active, playful, and mobile students.

Condemned / Unfinished Construction

Condemned or unfinished building structures and on-going construction, must be cordoned off with an "Off Limits" sign.

Sanitary Facilities

- Drainage canals shall be wide enough, covered, and provided with manholes for safety and sanitation purposes. Drain floors should be V shaped for good drainage;
- Location of the septic tank must be at least two (2) meters away from the building it serves. It shall be properly vented for proper release of gases. It must be at least 30 meters away from any source of water supply to avoid contamination.

Other helpful tips are:

- Conduct school mapping exercise at the school level.
- Undertake site appraisal including soil testing to determine appropriate building design and foundation.
- Review the Program of Works for the construction of school buildings by proper authorities.
- Ensure structural stability by following the requirements of the National Building Code on distances between buildings such as:
  - Eight (8) meters between one-storey buildings positioned side by side;
  - Ten (10) meters between two-storey academic buildings side by side;
  - Ten (10) meters between non-academic buildings;
  - At least ten (10) meters is suggested from a main building to the front gate;
- Greater distance than the minimum between school buildings is desired. Wider distance between buildings allows for adequate free space to be utilized for many school-related activities.



The LAPUS Building

The Learning and Public Use School (LAPUS) Building design is being applied by DepED to selected disaster-damaged schools being reconstructed in disaster prone areas. The Lapus Building can be used as an evacuation center during calamities and emergencies and is able to accommodate sixty-three (63) students or at least six (6) families per room.

- Strengthen, retrofit, or upgrade poorly built school buildings to withstand any possible calamity.
- Implement DepED Project A.S.S.I.S.T. (Assessment of Schoolbuildings' Structural Integrity, and Stability). This is a rapid inspection and evaluation by accredited technical volunteers (licensed civil engineers of the Department) trained by the National Disaster Coordinating Council (NDCC), the Association of Structural Engineers of the Philippines (ASEP) and the Philippine Institute of Civil Engineers (PICE) under the Disaster Quick Response Program to evaluate damaged structures affected by calamities, with the main objective being to providing secured learning environment to schoolchildren. The result of the assessment and recommendations must be reported to proper authorities. All buildings found to be unsafe for occupancy must be declared condemned.
- ***Recommend to appropriate authorities*** the provision of structures such as channels, catchments, basins, dams, levees and other structures to protect the school from mudflows, landslides and the like.
- Provide evacuation / exit plan to be posted in a strategic place in the building.
- Make funds available for insurance of newly completed school buildings and other insurable DepED properties.
- Undertake regular repair and maintenance of all school facilities and utilities, such as:
  - Regular inspection assessment and repair of school buildings.
  - Periodic check up of water supply system and potability of water.
  - Regular assessment of electrical systems and connections.
  - Regular inspection and maintenance of sanitary and sewerage systems.
  - Provision of other necessary utility such as emergency vehicle, battery operated radio, basic fire fighting tools, etc.

Records Management

Records Management is a systematic and secured safekeeping of vital records which contain pieces of information that serve as management tools for decision making and in the formulation of policies and programs by proper authorities. It is the lifeblood of an effective and efficient management of a school system. The school records contain important information about the profile and the performance of students, teachers, employees and the school as a whole which are necessary and indispensable for past, present and future references. Hence, the role of the school administrators and personnel is vital to ensure the safety of records. Likewise, it is their primary duty to reduce, if not to eliminate, the risk factors that will endanger any document in the school.

Classification of Records

Records Salvage Priorities

Salvage means the rescue of property from fire, flood, falling buildings, or other danger. Records Salvage Priorities refers to the identification of records which need to be saved first from any risks. It is essential that records managers be aware of the types of records in the workplace, their priority and location:

- Vital records: these are records which are irreplaceable and mission-critical.

ensuring safety
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They are usually associated with legal and fiscal matters such as original policy documents, current pension lists etc.

- Important records: these are records which are irreplaceable but could be reproduced only at considerable expense, time and labor.
- Useful records: these are records which, if lost, will cause some inconvenience but could be readily replaced.
- Non-essential records: these are records which are listed in disposal records for routine destruction.

helpful tips

Helpful Tips in Records Management

Validate the classifications by interviewing program managers and personnel who create records.

Apply good risk management principles in determining what records should be classified as vital by the public office, and keep them safely.

List the vital records that should include the following data:
- Identification number for each type of record;
- The name of the area responsible for record series or the electronic recordkeeping system containing vital records;
- The title of the series or electronic recordkeeping system;
- An indication as to why it is considered vital;
- The record format (is it paper or electronic, or another format?);
- All physical locations of originals and duplicates; and
- The frequency of update.

Safekeeping of Records According to its Media Format

Paper records
- Prepare vital records with long retention periods or which are generated in high volumes in microfilm form.
- Photocopy in plain paper vital facsimile transmissions
- File paper records in cabinets or drawers when not in use.

Microforms
- Store in separate cabinets and boxes microforms (film, fiche) created through different processes, e.g. silver halide, diazo and vesicular. Different types of films interact with each other and produce dangerous gases that destroy the microfilm images.

- Store off site security copies of microfilm.
- Handle the film by the edges to prevent fingerprint smudges.

Magnetic Media
- Back up computer information on a regular basis. Store back up information off site.
- Protect media and equipment with plastic covers to minimize water damage.
- Keep magnetic media away from all sources of risk.
- Re-wind data cartridges to beginning before removing them from the tape drive.
- Store data cartridges securely in their protective plastic cases.
- Clean regularly the tape drive to enhance its ability to accurately read data but never attempt to clean a data cartridge by touching the tape or the tape drive rollers with fingers or other objects.

Factors that Place Records at Risk

Fire
- Faulty electrical connections
- Negligence of school personnel to shut down/switch off appliances
- Laboratory mishap
- Smoking
- Use of fireworks, christmas lights, lanterns
- Others

Water
- Leaks in the water pipes, roofs/clogs in gutters
- Flash floods
- Negligence of personnel to close tightly faucets
- Others

Theft

- Unauthorized personnel handling records
- No logbook to record borrowers
- No inventory of records
- No security measure to enforce safety of records
- Others

Animal / Insect Invasion / Others

- Presence of termites
- Records room is used as a mess hall / dining room

Preventive Measures to Reduce Risks to Records

Protecting Vital Records

- Duplication – produce microform copies of accession records, use computerized data back-up.
- Off-site Storage - store back–up files in another storage room.

Records Disposition Schedule

- Follow strictly the guidelines of Records Management and Archives Office on the Disposition of records *(Please refer to Records Management Manual)*.

Tips to Avoid the Occurrence / Effects of Risk Factors

Fire

- Prohibit smoking, fires, and the use of fireworks in or around storage areas.
- Do not store records with chemicals, cleaning supplies, etc.
- Do not store records by a furnace, heaters or radiators.
- Comply with all local fire, electrification codes.
- Store flammable and combustible materials in a safe, cool place, out of sunlight and inside cabinets for hazardous materials
- Ask an expert to check regularly electrical connections.
- Limit and supervise the use of Christmas lights/lanterns.

- Ensure that pupils/students are under the supervision of their teacher when doing experiments with chemicals. Provide fire extinguishers in laboratories.

Water

- Identify all your drains and have them checked regularly. Repair leaks and check faucets.
- Regularly inspect storage areas to determine if they are susceptible to flooding or water leaks.
- Try not to store records in carpeted areas. Carpet retains water and prevents drainage.
- Try not to store records in areas that have exposed sewer types.
- Make hanging cabinets for flood prone areas.

Theft

- Identify and assign staff responsible for locking windows and doors at closing time. Authorize one person to be held responsible for records.
- Strict control of all building keys, with locks changed when keys are lost.
- Strict supervision of non-staff who enter the building, especially of cleaners and maintenance workers.
- Limited access to systems, either by the use of password or locks.
- Provide logbooks to record the borrowers' names.
- Conduct regular inventory.

Animal / InsectInvasion / Others

- Conduct building inspection to identify and block all potential points of rodent, animal or bird entry or to identify termite-infested area for treatment.
- Place strong, fine mesh screening over all necessary openings, such as windows or skylights, ventilators and screened doors for all external doorways.
- Ban eating in areas containing records or computers.
- Clean regularly and thoroughly ceilings, walls, gutters, floors, and all furniture.

Fixtures and Equipment

Fixtures and equipment are a vital part of a school building environment which is one of the primary concerns of the property custodian. They are essential ingredients that accentuate the human factors in designing a building. They can help create a sense of place, community, ownership, comfort, security, aesthetics and privacy.

Fixtures refers to facilities which are fixed or attached to a building as permanent appendages or as part of it, such as plumbing facilities, toilet bowls, lighting fixture, etc.

Equipment refers to materials which have a normal life span of two to five years that will help in carrying out its functions like chairs, tables, computers, laboratory equipment etc.

Property custodianship refers to the guardianship or safeguarding of government property by the person accountable, with utmost care and honesty. This includes proper inventory of properties, procurement, receipt, and equitable distribution of supplies, material and equipment.

In safeguarding the various DepED properties, particularly the fixtures and equipment, the following activities should be undertaken:

Storage

This refers to the scientific and efficient receipt, warehousing and issuance of materials and equipment for their best safekeeping. The Supply Officer/Property custodian is responsible for the planning and construction of a safe and well secured warehouse or storage area.

Best safekeeping means protecting supplies, materials and equipment against theft, fire, pilferage, and their deterioration. It ensures easy accessibility when needed. This could be undertaken through the provision of a safe and secured property/supply office through the installation of fire and water proof vaults and window and door grills.

Warehousing

It refers to a proper storage of goods, supplies, materials and other equipment. This includes proper documentation of the receipts and distribution.

Deliveries of supplies, materials and equipment must be accompanied with a Delivery Receipt (DR) and or Sales Invoice (SI) and must be inspected by the inspection committee before the items are accepted by the property custodian or supply officer. This is undertaken to determine the quality and quantity of supplies and materials procured. Deliveries from the division office to field offices must have the corresponding Memorandum Receipt (MR).

The warehouseman/storekeeper arranges the materials inside the stockroom in accordance with storage plans using the right materials in handling equipment. It is emphasized that supply materials and equipment for the field shall be delivered immediately. The supply officer and property custodian should always prepare a systematic warehousing plan.

Warehousing Procedures

- Receive the materials and equipment with delivery receipt
- Arrange the materials
- Reconcile inventories of bin cards stock/ property cards with physical count of stock on hand
- Safeguard the materials

Inventory Taking

Inventory taking is an indispensable procedure for checking the integrity of property custodianship. The physical count – taking of equipment and supplies serves as basis for preparing an accounting report for each quarter. The accounting and supply property units should reconcile their records. Physical stock should balance with those that are included in the inventory of supplies and materials based on the inventory report submitted by the inventory committee. Property should be entered into inventory separating those that are still usable/functional/repairable from those that are not usable and subject to condemnation or disposition.

The steps in inventory taking are:

- Create an Inventory Committee
- Conduct physical inventory taking with witnesses
- Reconcile the property inventory and accounting record
- Maintain the following property control records by the supply section:
  - *Bin Card Stock*
  - *Stock Card*
  - *Property/equipment card*
  - *Livestock Card*
  - *Report on the physical card of inventory*
  - *Report on the physical count of the property, physical and equipment*

Insurance of insurable DepED properties

The school through the supply officer or property custodian identifies all insurable properties and makes sure that these are insured under government or a private accredited insurance company subject to existing rules and regulations. Funds shall be made available for this purpose.

Other Considerations

Skilled Personnel

- Train permanent staff
- Hire/contract services of skilled personnel like electrician, carpenter, computer technician

Communication

- Install telephone lines and internet connections
- Make cell phone/two way radio available to accountable Officer
- Organize a disposal management and control committee
- Secure the emergency number of the following agencies in case of emergencies:
  - *DepED*
  - *DOH*
  - *DILG*
  - *DND – OCD*
  - *BFP*
  - *LGUs*
  - *PNRC*
  - *DSWD*
  - *PNP/AFP*
  - *DPWH*

- *BSP/GSP*
- *RADIO / TV STATIONS*
- *NGO'S / Volunteer Organizations*

Ensuring the safety of DepED properties is the primary responsibility of every personnel at the school level. Ensuring a conducive learning environment, adequate and appropriate equipment, instructional material and other supplies are significant in raising the quality of education. Likewise, a systematic management of records of results redounds to a sound judgment by proper authorities and for the formulation of appropriate programs and policies.

The next chapter will introduce you to the monitoring and evaluation of the program implementation of this Safer Schools Resource Manual.

Chapter 8

Monitoring & Evaluation of the Disaster Risk Management Implementation

Mainstreaming Disaster Risk Management in the School System

Development that is implemented without mainstreaming disaster risk reduction into all its aspects may result in disasters with varying degrees of damage to socio-economic aspects. Unless disaster risk reduction becomes part of the Department of Education's development plans and programs at all levels, progress in social and economic development will continue to be eroded by recurring disasters.

Mainstreaming is a process of assessing the implications of disaster risk on every planned development action – from policy to program implementation – in all practice areas from National, Regional, Division and School levels. This process enables disaster risk reduction concerns and experiences to become an integral dimension of the design, implementation, monitoring and evaluation of policies and programs. There is a need for a commitment from the highest level within the Department of Education as well as its organizational structures to spearhead the mainstreaming process.

Programs and projects must be able to: (1) Define entry points and develop tools to operationalize the policy and integrate disaster risk reduction into all practice areas; (2) Develop targeted disaster risk reduction projects; (3) Develop human resources capacity; and (4) Commit resources. With this framework, awareness within the Department is necessary that current risk reduction management will eventually lead to the achievement of the millennium development goals which include (1) eradicate extreme poverty and hunger; (2) achieve universal primary education; (3) promote gender equality and empower women; (4) reduce child mortality; (5) improve maternal health; (6) combat HIV/AIDS, malaria and other diseases; (7) ensure environment sustainability; and (8) develop a global partnership for development.

With the organizational structure and processes in place, and understanding the nature of the different potential hazards and what needs to be done before, during and after these hazards occur, the effectiveness and efficiency of the Disaster Risk Reduction Program can be ensured.

Like any program in DepED, the implementation of the Disaster Risk Reduction Program (DRRP) has to be assessed and monitored to ensure proper application, efficiency, and corrective measures/interventions.

Monitoring and evaluation of the DRRP focuses on the following aspects:

Information dissemination and advocacy campaign

Training by levels on:

- Utilization of the Safer Schools Resource Manual
- Developing a Disaster Risk Reduction Plan
- Organization of disaster risk reduction groups
- Potential hazards in the location
- Risk reduction measures (i.e. conducting fire/earthquake drills, First Aid)
- Safeguarding DepED properties and records

Disaster Risk Reduction Program Structural Organization

- Organization of disaster risk reduction groups by levels
- Roles and functions of persons involved in the program linkages with local / national / international agencies and other stakeholders

Status of Implementation of the Risk Reduction Measures

- Mitigation
- Preparedness
- Response
- Relief and Rehabilitation

Monitoring and evaluation should be conducted at least yearly, and the reports analyzed at each level receiving reports, to determine aspects that need corrective measures and/or improvement, and those that could be promoted as examples for other schools, divisions and/or regions.

Recommendations and assistance shall be provided in order to augment the capabilities of the schools, divisions and regions to undertake disaster risk reduction and eventually mitigate the devastating impact of disasters on lives and property.

Instructions on the Monitoring Scheme of the Implementation of the Disaster Risk Reduction Program of the Department of Education

- The DepED Central Office shall organize a team to monitor the Regional Offices throughout the country.
- The Regional Offices shall organize a monitoring team to monitor the Division offices within the Region.
- The Division Offices shall organize a team to monitor the schools, elementary and secondary, in the Division.
- The monitoring teams at every level shall use the instruments for monitoring and evaluation of the Safer Schools Resource Manual as specified below:
    - *Regional and Division Offices – Checklist A only*
    - *Schools (Elementary and Secondary) Checklist A, B, C & D*

The monitoring activity commences in the month of July to coincide with the Disaster Consciousness Month. The data obtained by the monitoring teams shall be collated at every level – Regional, Division and Schools, to come up with an overall picture of the status of implementation of the DRR Program of the DepED and submit the results to the Chairman of the Disaster Risk Reduction Management Office at the DepED Central Office.

Recognition shall be given through a fitting culmination program or through a memorandum to deserving offices/schools.

Monitoring and Evaluation Guidelines

Monitoring is the measurement through time that indicates the movement toward the objective or away from it. Monitoring is done for a specific purpose--to check on the process or object or to evaluate the condition or the progress toward a management objective--and that the results will effect an action of some kind.

As a general rule, monitoring programs should be based on accepted rigorous statistical sampling designs and pay particular attention to issues of precision and bias in data gathering . However, one must admit that true replication of measurements is often impossible and in some cases sample sizes are necessarily small. Bias in data gathering is often unavoidable owing to patterns of ownership, accessibility of areas, or limited sample techniques. And it may be that the questions being asked of monitoring data require only a general sense of a resource's status for a small area and thus a curbside observation of the site may suffice. Managers need to use the correct science and technology for the questions to be answered. But as pointed out by Holling (1978) and Walters (1986), conditions that limit optimal monitoring are no excuse not to establish monitoring programs. Rather, they should be stated explicitly in monitoring documentation and reflected as qualifications in any conclusions regarding the effectiveness of management actions. Thus flexibility is permitted allowing the type and detail of monitoring to be tailored to the specific situation as long as the consequences are recognized and publicized.

Using the Evaluation Data

The primary purpose of all *evaluation* is to improve decision making. Unless the information gathered is appropriate – as well as properly analyzed and interpreted, it will be of little value to the administrative and governing boards in future decision making. It is important that data collection be limited to data that are intended to be used, not just interesting to know. One of the most common errors in evaluation is the collection of data with no prior plan for how the data will be used. This is especially true of questionnaire data. If evaluation is properly implemented, it can be useful in correcting problems, improving the planning process, and obviating similar problems in the future. Evaluation can also point to the need for more adequate time and resources for better planning and can result in improved management and maintenance of educational facilities during normal and emergency situations.

Need for Monitoring and Evaluation

Evaluation and monitoring go hand in hand. Monitoring provides the raw data to answer questions. But in and of itself, it is a useless and expensive exercise. Evaluation is putting those data to use and thus giving them value. Evaluation is where the learning occurs, questions answered, recommendations made, and improvements suggested. Yet without monitoring, evaluation would have no foundation, have no raw material to work with, and be limited to the realm of speculation. As the old song says, "you can't have one without the other." A monitoring program should not be designed without clearly knowing how the data and information will be evaluated and put to use. We can not afford to collect and store data that are not used. Monitoring for monitoring's sake is monitoring that should never be done.

Managers need to understand that the design, development, and maintenance of monitoring and evaluation programs requires commitment and long term vision. In the short term, monitoring and evaluation often represents an additional cost and is particularly difficult to maintain when budgets are tight and where personnel are temporary or insufficient. Yet we must be clear that lack of consistent support for long term monitoring and evaluation will hinder progressive project/program management.

Need for Credibility and Flexibility

Anyone can produce data and try to impress people with them. But as managers, our duty and responsibility is to provide the citizens of the Philippines with the best information possible. Credibility with the public is essential. Monitoring data that are collected using the best scientific knowledge, have known precision, are of highest quality, and are as objective as possible will be viewed as most credible. This is a tall order to fill, yet provides a most worthy goal. Proper monitoring and evaluation are the way that managers can regain public trust that seems to have been lost in recent years in many areas.

Disaster Risk Reduction Program Implementation Assessment Checklist

(For Regional and Division Offices)

Check if the item is observed or provided for:

Basic Program Component

A. On Preparedness

1. Disaster Risk Reduction Group Organization

	a)	Organized a DRRG
	b)	The DRRG is properly organized in compliance with the DepED issuances and with the role and functions of each member understood and followed.
	c)	Conducted information dissemination and advocacy campaign as planned.
	d)	Members attended and participated in the regular and emergency DRRG meetings.
	e)	Established and maintained linkages with local/national/ international agencies and other stakeholders

2. Disaster Risk Reduction Plan

	a)	Developed Disaster Risk Reduction Plan, including hazard assessment.
	b)	Provided for component services such as training, evacuation, rescue, rehabilitation, etc.
	c)	Based the Plan on the worst case scenario.
	d)	Involved the community and other stakeholders in the preparation, implementation and monitoring of the Plan.
	e)	Conducted drills/dry runs and critiques in accordance with the plan.

4. Disaster Operation Center

	a)	Conducted trainings on risk reduction and other related courses. If any, please list. Use additional sheet if needed

Title of Courses	No. of Participants	Level of Training (Orientation, Basic, Refresher, Advanced)	No. of Hours	Sponsoring Agency Organization

	b)	Volunteered equipment and/or facilities for training purposes.
	c)	NGOs and other stakeholders support the training program. Which ones?
	d)	Conducted school level training on disaster risk reduction.

B. On Response Effectiveness

1. Damage Assessment and Needs Analysis (DANA)

	a)	Organized/put in a Disaster Operation Center.
	b)	Provided with the basic equipment.
	c)	Manned by personnel trained on Disaster Risk Reduction.
	d)	Provided information materials that can be disseminated.
	e)	Provided assistance whenever necessary

2. Search and Rescue
3. Fire Suppression
4. Emergency Medical Services

	a)	Organized a unit that conducts local damage assessment and needs analysis.
	b)	Equipped with instruments and materials for rescue operations.
	c)	Participated by the NGOs and other stakeholders.
	d)	Provided real time for reporting system.
	e)	Undertake the job on the "quick response" standard.
	f)	Provided data of center coverage (human and property)

	a)	Organized a unit that coordinates with the agencies for the search and rescue operations.
	b)	Equipped with communication equipment or other means of communication.
	c)	Volunteered equipment and/or facilities for the unit.
	d)	Reported on real time/near real time coordination.
	e)	Operated on "quick response" standards.
	f)	Equipped with technical knowledge on search and rescue.

3. Disaster Risk Reduction Trainings Conducted

	a)	Organized unit assigned to give the warning signal and to coordinate with the fire department and/or other agencies in case of fire.
	b)	Equipped with communication equipment or other means of communication.
	c)	Volunteered equipment and/or facilities for the unit.
	d)	Reported on real time/near real time coordination.
	e)	Operated on "quick response" standards.
	f)	Has knowledge on basic fire fighting.

	a)	Assigned a unit to administer First Aid and coordination with the hospitals and other health agencies for emergency medical services developed.
	b)	Equipped with communication equipment or other means of communication.
	c)	Volunteered equipment and/or facilities for the unit.
	d)	Reported on real time/near real time coordination.
	e)	Operated on "quick response" standards.
	f)	Has basic knowledge in first aid.

5. Evacuation

	a)	Assigned a unit to supervise evacuations and to coordinate with the agencies concerned in case evacuation is necessary.
	b)	Equipped with communication equipment or other means of communication.
	c)	Volunteered equipment and/or facilities for the unit.
	d)	Reported on real time/near real time coordination/evacuation and relief.
	e)	Operated on "quick response" standards.
	f)	Has available data at the evacuation center.

C. On Relief and Rehabilitation

	a)	Organized a group that provides for relief and rehabilitation services immediately after the disaster.
	b)	Trained the members of this group technically to administer and coordinate post disaster relief and rehabilitation.
	c)	Coordinated with NGOs, GOs, and local and foreign agencies for rehabilitation assistance when needed.
	d)	Volunteered equipment and/or installation for the purpose.
	e)	Tapped communities for "food for work" and volunteer rehabilitation services.

General Remarks

As a whole, the Disaster Risk Reduction Program implementation is:	
Name:	Signed:
Position:	Date:

Checklist on the Disaster Risk Reduction Preparations Undertaken by the School

(For Elementary and Secondary Schools)

Name of School: **Location:**

Check if such preparation was observed or done.

A. On the Preparation of the Disaster Risk Reduction Plan

	a)	Considered the risk assessment information (baseline and background data of the school and the community in relation to the different hazards. (School Mapping Information).
	b)	Assessed the conditions of the school buildings and other structures/ classrooms of the school.
	c)	Assessed the personnel and material resources of the school and community to undertake disaster risk reduction measures.
	d)	Assessed the needs of the faculty and community in planning for the training on disaster risk reduction.
	e)	Involved the teachers, community, and other stakeholders in the preparation of the Disaster Risk Reduction Plan.
	f)	Coordinated with NGOs, INGOs, agencies and other stakeholders to assist in developing the Disaster Risk Reduction Program.
	g)	Clearly identified in the school and community map safe places where the school and the community can go in case of particular emergencies such as: flood, earthquake, typhoons, fire, bombings, etc.
	h)	Clearly identified the persons and agencies to call for assistance in case of emergencies and how to contact them and who to contact.
	i)	Clearly defined the roles of the teachers and members of the organized Disaster Risk Reduction Group in case of emergencies.
	j)	Included general guidelines of what to do before, during and after the different kinds of hazard impacts experienced in the location.
	k)	Included in the Plan the schedule of activities, like training, drills, reinforcing buildings, repairs and etc. to prepare the school and the school community for any eventuality.
	l)	Disseminated the Disaster Risk Reduction Plan to the school, community and other stakeholders.

B. On Organization of the School Disaster Risk Reduction Group

	a)	Assessed the leadership qualities, training, and expertise of the teachers designated to form teams on:
		Security Supply Transportation Communication Warning Fire Brigade Rescue Medical Evacuation Relief and Rehabilitation Damage Control
	b)	Organized an Incident Command System in the school that can be activated in times of emergency with major organizational functions such as: Incident Command; Operations; Planning; Logistics; Finance/Administration; Strike Teams.
	c)	Formed the Disaster Assessment and the Needs Analysis Team; Search and Rescue Team; Medical Team; Fire Suppression Team; Relief and Evacuation Team and other Response Teams supported by the Auxiliary and Volunteer Groups of the NGOs and INGOs.
	d)	Defined the roles and functions of each team and its members.
	e)	Conducted capability training to all the members of the DRRG.
	f)	Identified the persons responsible to coordinate with NGOs, INGOs, agencies and other stakeholders in times of emergency.

C. On the Implementation of the Disaster Risk Reduction Measures

	a)	Followed the guidelines for mitigation and preparedness (before), response (during) and relief and rehabilitation (after) measures as listed in the Safer Schools Resource Manual (Chapters 2, 3, 4).
	b)	Adapted the assessment and reporting forms and surveys to the problems and needs of the school and the locality relative to disasters.
	c)	Sought the assistance of the local government, the parents, NGOs, INGOs, and other stakeholders in preparing the school to withstand disasters.
	d)	Established and maintained standing agreements with the NGOs, INGOs, communication, transportation and agencies that can give assistance before, during and after disasters.
	e)	Documented and filed all the chronological events during a calamity for future reference.
	f)	Equipped with the survival kits, equipment, materials and supplies needed in times of calamities.
	g)	Operated on the "quick response" standards.
	h)	Identified exits and evacuation sites known to the school community.
	i)	Undertaken provisions to ensure continuity of instruction.
	j)	Exerted efforts to protect DepED properties (buildings, fixtures and equipment and records)

Name:	Signed:
Position:	Date:

Checklist on the Disaster Risk Reduction Preparations Undertaken by the School

(For Elementary and Secondary Schools)

Name of School: **Location:**

Check if the item is complied or provided for:

A. Alternative Learning Venue
(for school heads/ physical facilities coordinators)

Provided available instructional venues such as:

	Tents
	Makeshift classrooms
	Covered court
	Barangay halls
	Social action center
	Other alternative safe and adequate structures

B. Alternative Delivery of Formal Education
(for elementary/ secondary teachers)

Provided the following:

1. For elementary pupils (elementary teachers)

	Alternative Delivery Mode (ADM) instructional materials at the District/ Division/ Regional office for the use of Grades IV – VI pupils
	Books/ manuals/ instructional materials for Grade I-III
	Alternative Learning System (ALS) modules for Grade I – VI pupils
	Day – care services for pre-school children
	Other modes of delivery system

2. For secondary school students (secondary teachers)

	Effective and Alternative Secondary Education Modules (EASE)
	Distance Learning Modules (DLM)
	Textbooks in all learning areas.
	Alternative Learning System Modules (ALS)
	Other modes of delivery system

C. Implementation (Elementary or Secondary Teachers)

1. Preparedness and Mitigation

	Prepared an implementation plan focused on the alternative formal delivery of instruction.
	Prepared an inventory of existing or available alternative materials in his/her learning areas upon request for reproduction.
	Possessed information of existing available alternative materials in the District/Division/ Regional office upon request through school heads/ district supervisor.
	Possessed information of available alternative materials kept at the Regional Office upon recommendation of schools through the Division Office.
	Other modes of delivery system.

2. Response

	Identified learning competencies/ concepts to be covered in the event of class disruption.
	Knew where to borrow/secure adequate copies of instructional materials for affected pupils/ students.
	Oriented pupils/ students, parents on what, when, why, and how to use alternative materials.
	Monitored progress of pupils/ students during those periods when classes are disrupted.
	Coordinated closely with parents and other teachers to insure continuous instructional guidance to children when disasters occur.

3. Rehabilitation

	Conducted an inventory of damaged textbooks/ equipment for possible replacement and/or procurement.
	Conducted an assessment to determine the baseline of pupils/students progress, the results of which will serve as starting point for the continuation of the lesson.
	Assessed the effectiveness and appropriateness of the materials being used by pupils/ students during those periods of time.
	Returned barrowed materials to the Division Office for the use of other schools when need arises.

Name:	Signed:
Position:	Date:

Checklists on Ensuring the Safety of DepED Properties

(For Division/Schools Physical Facilities Coordinators/Prop. Custodians)

Name of School: **Location:**
Check if the item is observed or provided for:

A. On School Site and Building

	1)	Conducted the school mapping exercise.
	2)	Undertaken site appraisal including soil testing to determine appropriate building design.
	3)	Identified in the school hazard map the kind of hazards he school is prone to.
	4)	Constructed the school building in accordance with approved standards.
	5)	Ensured structural stability of school buildings in terms of distances between buildings.
	6)	Considered the following requirement in designing a school building
	a)	Main Entrance Gate
		Main entrance or gate is located preferably along a secondary road.
		Provided separate serving entrance for school children.
		Provided enough clearance for fire unit and medical vehicle
	b)	On Electrical System
		Provided protective covering for all wirings and fixtures.
		Installed fire alarm system and fire extinguisher
		Repaired immediately defective electrical wirings and fixtures
		Conducted periodic assessment of electrical load capacity.
	c)	On Stairs/ Handrails
		Avoided smooth/ polished steps, provided non- slip nosing and flooring.
		Provided ramp for abrupt change in floor elevation.
		Provided landings with railings between doorways and stairways.
		Provided handrails on each side of stairway with more than 4 steps.
		Considered distance of railings for not more than 100mm.
	7)	**Provided the windows with security grills and emergency exits.**
	8)	Provided at least two (2) doors per classroom, not less than 2.10 meters high and 0.90 meters wide, capable of swing and opening at least 90 degrees.
	9)	Wide unobstructed corridors.
	10)	Provided smooth walls/partition surfaces to prevent injury to highly active, playful and mobile students.

(continued...)

	11)	Provided comprehensive covered drainage canal with wide covered manhole
	12)	Regular program to clear and clean drainage lines.
	13)	Constructed septic tank in proper location, at least 2 meters away from the building and 30 meters away from water supply source.
	14)	Provided water system with potable water supply.
	15)	Secured the following permits and licenses prior for construction of building:
		Land-Use Zoning Clearance
		Environmental Clearance (DENR)
		Building Permit
		Electrical/Sanitary Permit
		Other required permits and licenses.
	16)	Secured occupancy permit from the local engineering office.
	17)	Kept files of building plan of every completed building for future reference.
	18)	Provided cordon and signage for on-going, unfinished and condemned buildings.
	19)	Checked and strengthened or retrofitted poorly built school buildings to withstand any possible calamity.
	20)	Implemented DepED Project A.S.S.I.S.T. *(Assessment of School buildings' Structural Integrity, and Stability).*
	21)	Recommended to proper authorities the provision of structures such as channels, catchments, basins, dams, levees and other structures to protect from mudflows, landslides and the like.
	22)	Posted evacuation/exit plan on every floor of the building.
	23)	Provided funds allocation for insurance of newly completed school building and all other buildings.
	24)	Undertaken regular repair and maintenance of school facilities and utilities, such as:
		Conducted regular assessment and repair of school building
		Conducted a periodic check-up of water supply system and potability of water.
		Conducted a regular assessment of electrical systems and its connections.
		Conducted a regular inspection and maintenance of sanitary and sewerage systems
		Procured other necessary utilities such as emergency vehicle, battery operated radio, basic fire fighting tools, etc.

B. On Records and Records Keeping

	1)	Monitored temperature and humidity.
	2)	Provided safe storage of records.
	3)	Observed the fire prevention month.
	4)	Monitored water leaks.
	5)	Secured evacuation plan and emergency lights.
	6)	Provided a fire and flood proof vault for vital school records, 201 files, administrative complaints/cases and school site titles.
	7)	Built a well-fastened overhead cabinet for important documents.
	8)	Established and/or installed back up files (Electronic Filling System)
	9)	Constructed records storage for back-up files of vital documents.
	10)	Purchased Electronic Filing System.
	11)	Furnished a copy of back-up files for DepED Central/ Regional/ Division/ District/ School.
	12)	Conducted inventory of Records.
		Prepared list of all records of the department.
		Segregated records according to retention period.
		Color coded the important documents.
	13)	Disposed of records in accordance with DepED Records Disposition Schedule.
	14)	Followed strictly the guidelines of the DepED Records Management Operation Manual by all schools of the Department.
	15)	Observed strictly the guidelines on how to avoid the incidence of::
		Fire
		Water
		Theft
		Animal/ Insect invasion.
	16)	Observed and implemented the checklist on disaster prevention.
	17)	Followed strictly the methods on how to protect vital records as provided in the DepED Records Management Operation Manual.
	18)	Prepared and implemented the Records Recovery Plan.
	19)	Identified the records salvage priorities.
	20)	Organized a functional Disaster Response Team.

Checklists on Ensuring the Safety of DepED Properties

	1)	Constructed a storage area for safekeeping and protecting supplies, materials and equipment against theft, fire, pilferage, deterioration and ensuring accessibility when needed.
	2)	Installed a safe and secure property/ supply office through the installation of fire and water proof vaults and grills, windows and doors.
	3)	Implemented the proper procedures of systematic warehousing.
	4)	Followed strictly the procedures in inventory of property.
	5)	Procured and installed communication facilities such as telephone lines and internet connection.
	6)	Organized the Records Management Improvement Committee (RMIC).
	7)	Listed the emergency numbers of involved government agencies, LGU's, and NGO's, and contact persons.
	8)	Organised to Avail transportation during emergencies.
	9)	Have skilled and/or trained personnel.
	10)	Procured needed equipment and supplies.

Name:	Signed:
Position:	Date:

data gathering

Data Gathering Forms During Calamity or Disaster

There are three forms to be used in gathering data on the extent of damages brought by a calamity or disaster. These are called the **Rapid Damage Assessment Reports (RADAR)** which is to be filled up by personnel concerned in the regions, divisions and schools.

At the Regional level, the RADAR shall be prepared by the Regional Facilities Coordinator, signed by the Assistant Regional Director or the Chairman of the Disaster Risk Reduction Management Office (DRRMO), and shall be noted by the Regional Director.

At the Division level the RADAR shall be prepared by the Division Physical Facilities Coordinator, signed by the Assistant Schools Division Superintendent or the Chairman of the DRRMO and noted by the Schools Division Superintendent.

At the school level, the RADAR shall be prepared by the Industrial Arts Teacher or the Property Custodian and shall be certified by the School Head/Principal. The District Supervisor shall be provided with a copy of the report. It is important that contact numbers are written at the lower portion of the forms for validation and confirmation of data.

In the following pages are sample RADAR forms for the region, division and school levels.

radar form for schools

DepED Disaster Risk Reduction Management Office
RApid Disaster Assessment Report
(RA.D.A.R.)

Report on Damages Brought by:
As of:

Region:
School:

Division:
Address:

Building Description/Type	No. of Classrooms	Extent of Damage	Estimated Cost of Damage					No. of Affected	
			Building	Textbooks	Furniture	Computers	Others	TOTAL	Teachers	Students
Grand Total										

Is the school used as an Evacuation Center? Yes ☐ No ☐

No. of Classrooms Utilized as Evacuation Center	No. of Families Housed / Accommodated		
		Total No. of Male	Total No. of Female
TOTAL			

Prepared by:
(Industrial Arts Teacher / Property Custodian)

Noted By:
(School Head)

radar form for divisions

DepED Disaster Risk Reduction Management Office
RApid Disaster Assessment Report
(RA.D.A.R.)

Report on Damages Brought by:
As of:

Region: **Division:**

Name of School	Building Description / Type	No. of Classrooms	Estimated Cost of Damage						No. of Affected	
			Building	Textbooks	Furniture	Computers	Others	TOTAL	Teachers	Students
Grand Total										

Summary of school used as an Evacuation Center? Yes ☐ No ☐

Name of School	Address	No. of Classrooms Used as Evacuation Centers	No. of Families Housed / Accommodated	Total No. of Male	Total No. of Female
TOTAL					

Prepared by:
(DPFC)

Noted By:
(Asst. SDS/Chairman DRRMO)

radar form for regions

DepED Disaster Risk Reduction Management Office
RApid Disaster Assessment Report
(RA.D.A.R.)

Report on Damages Brought by:
As of:

Region:

Division	Municipality	Total No. of Schools	Total No. of Classrooms	Estimated Cost of Damage						No. of Affected	
				Building	Textbooks	Furniture	Computers	Others	TOTAL	Teachers	Students
Grand Total											

Summary of school used as an Evacuation Center? Yes ☐ No ☐

Division	Municipality	No. of Classrooms Used as Evacuation Centers	No. of Families Housed / Accommodated	Total No. of Male	Total No. of Female
TOTAL					

Prepared by:
(RPFC)

Noted By:
(Asst. Reg. Dir./Chairman DRRMO)

Appendix 1

History of Natural and Human-Made Incidents in the Philippines

All forms and kinds of hazards have been wreaking havoc to the education sector in terms of school properties, disruption of normal teaching-learning activities, and most of all, loss of innocent lives of school children. The following is a summary of damage caused nationally by the different hazards since 1994.

In 1994, typhoons, earthquakes, floods and lahar are the major natural incidents that claimed hundreds of casualties and injuries; and hundreds of thousands of families left homeless, and devastated millions of pesos of properties, while the rest of the natural incidents such as monsoon rains, landslides, storm surge and epidemic outbreak claimed less casualties and injuries but devastated millions of pesos of properties. Sea mishaps, armed conflict, shooting incidents are also major man-made incidents that claimed hundreds of casualties and injuries.

In 1995, devastation was caused by the natural incidents particularly typhoons, floods, and landslides that claimed many casualties/injuries and displaced thousands of families homeless and caused millions of pesos of damage to properties. Destructive effects were also caused by fire incidents that claimed a great number of casualties and more damages to properties as compared to other man-made incidents.

In 1996, natural incidents such as typhoons, floods and landslides contributed hundreds of casualties and injuries and thousands of families left homeless and millions of pesos of properties were damaged. Structural fire incidents were the very significant man-made incidents that occured which caused a lot of death, injuries and dislodged thousands of families homeless and damages to properties are evident.

Payatas Garbage Slide

On July 2000, the waste slope of the Payatas dumpsite in Metro Manila moved down like an avalanche, burying dozens of slum huts and part of the township under meters of waste, and killing hundreds of people.



In 1997 typhoons and floods claimed a big number of casualties and injuries and affected several hundreds of families homeless and damaged millions of pesos to properties. Structural fire incidents, vehicular accidents also claimed hundreds of casualties, injuries and displaced thousands of families and brought millions of pesos of damages to properties. The rest of the natural and man-made incidents claimed less of the same.

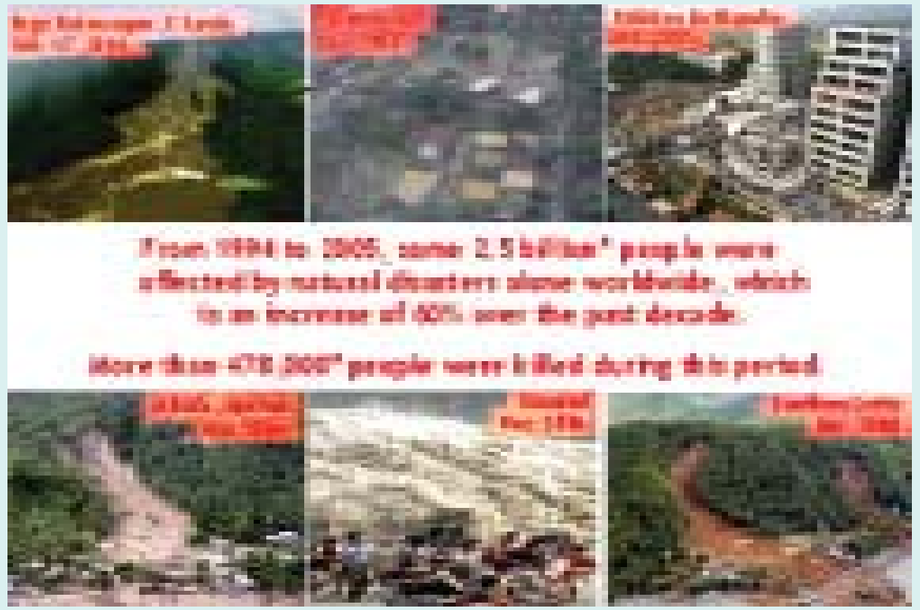
In 2000, garbage-slides, other landslides and floods were the natural incidents that brought hundreds of fatalities and dislodged and evacuated thousands of families and likewise damaged millions of pesos to properties. Complex emergencies, sea and air mishaps, bombing incidents, vehicular and fire accidents greatly devastated both human lives and millions of pesos of properties.

In 2001, tropical cyclones claimed more casualties and injuries and more families were left homeless compared to other incidents from nature which claimed less numbers of the same. Structural fire incidents, complex emergencies, bombing and grenade incidents, epidemic/disease outbreak also claimed several casualties and injuries and damage to properties.

In 2002, tropical cyclones was the number one destructive natural incident, followed by flash floods and landslides which also caused deaths and injuries, and displaced thousands of families and gutted millions of properties.

In 2003, landslides, tropical cyclones, and floods claimed hundreds of lives and injured and damaged millions of properties while the rest of the incidents claimed less destruction to human lives but greater damages to properties. Fire incidents, vehicular accidents, grenade explosions, complex emergencies/epidemic outbreak and gas-poisoning are the major incidents that claimed a large number of casualties and injuries and devastated millions of properties while

recent disasters



sea mishap is a minor man-made incident that claimed less of the same.

Tables 4 and 5 indicate tragedies from 1991 to 2006 triggered by extreme weather events such as typhoons and abnormal increase in rain fall. This list of tragedies includes the Legazpi Mudslide and the Guinsaugon, Leyte Landslide which the Center for Research on the Epidemiology of Disasters declared as 2nd and 3rd of the World's Deadliest Disasters of 2006, respectively. A total of 2,511 people were killed and almost 800,000 families were affected by these tragedies.

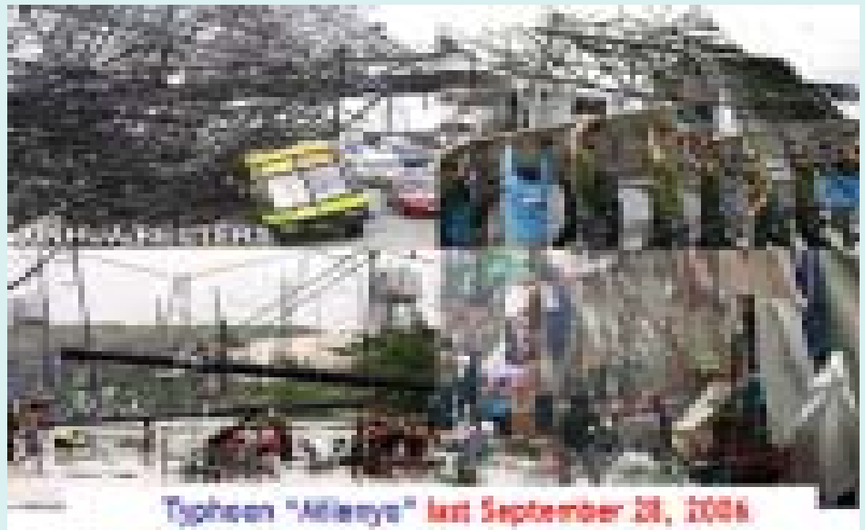
The following photos summarize the **History of Disasters in the Philippines**. These damages could have been reduced had the Filipino people internalized the need for coordinated and cooperative efforts to effectively avoid disaster situations, and be prepared before, during and after the occurence of any calamity.

recent disasters

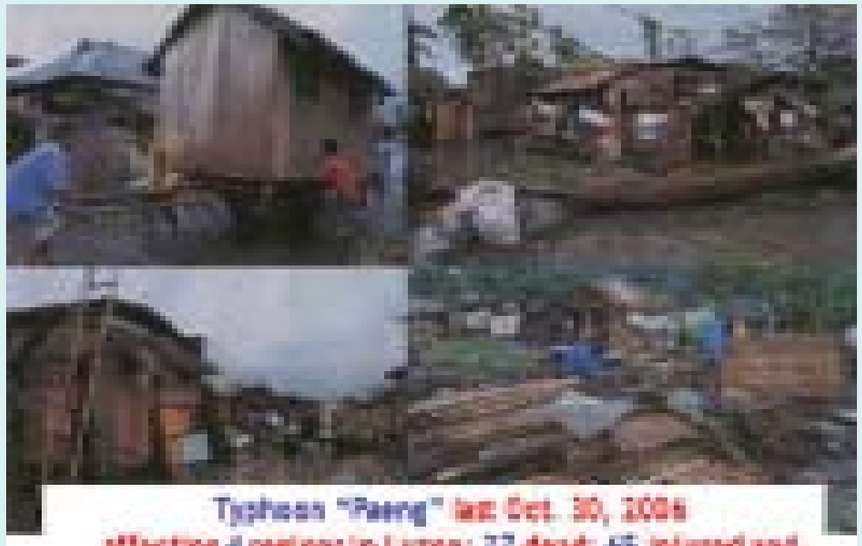
Yearly, the country experiences an average of twenty (20) tropical cyclones, half of these are destructive, including other weather hazards such as thunderstorm, heavy rainfall, southwest and northeast monsoons, cold front and ITCZ; is a host to 300 volcanoes, twenty-two (22) of which are active, together with active faults and trenches that are potential sources of earthquakes.



In 2004, the country experienced twenty-five (25) weather disturbances, four of these occurring successively in November and first week of December, which brought massive landslides and flooding in the towns of Real, Infanta and General Nakar, Quezon Province, Dingalan, Aurora and Gabaldon, Nueva Ecija



Typhoon "Milenyo" last September 28, 2006 affected 9 regions; leaving 184 dead; 536 injured; 47 missing and more than P4.5 B cost of damage



Typhoon "Reming" last Oct. 30, 2006 affecting 4 regions in Luzon; 27 dead; 65 injured and 23 missing; P 615,449,792.83 cost of damage



Typhoon "Reming" last November 28, 2004 affected 3 regions; leaving 734 dead; 3,360 injured; 762 missing and P 5,448,609,476.00 cost of damage



On February 17, 2006, another landslide hit Southern Leyte that almost wiped out the entire 480 hectares in Brgy. Guinsaugan, one of the 16 villages of the town of St. Bernard, leaving in its wake 154 dead, 38 injured, 410 registered survivors and 968 still missing



The country has also its episodes of human-made disasters such as urban fires, air & sea mishaps, and complex emergency, mostly in Southern Philippines because of the secessionist movement, coupled with its vulnerability to floods and other natural hazards.



The sinking of MT Solar I at Tumaran Point, Guimaras Island last August 11, 2006 has resulted in the spillage of 200,000 liters of industrial fuel oil, the largest oil spill in the country affecting 3 provinces and 18 municipalities with 3,357 families or 16,785 persons affected population

In June 21, 2008, MV Princess of the Stars with 849 passengers (121 crew, 724 passengers and 4 sea marshalls) while on her way to Cebu, capsized in the vicinity of Sibuyan, Romblon. Only 56 survived and 124 died, while others were missing.



Photos are from CNN

Table 4: Disastrous Typhoons in Terms of Damage

Year	Name	Areas Affected	Damages (Billions)
1990	T. RUPING	Central Visayas	10.85
1995	T. ROSING	Southern Luzon	9.30
1993	T. KADIANG	Central Luzon	8.75
1988	T. UNSANG	Southern Luzon	5.64
1984	T. NITANG	Northeastern Mindanao/Visayas	3.91
2001	T. FERIA	Luzon	3.51
1991	T. TRINING	Northern Luzon	3.47
2001	T. NANANG	Visayas	3.25
2003	T. HARUROT	Luzon	3.23
1995	T. MAMENG	Visayas	2.80
1988	T. YONING	Visayas	2.75
2004	T. IGME	Southern Luzon/Bicol	2.45
1993	T. MONANG	Southern Luzon	2.34
1985	T. SALING	Central Luzon	2.18
1992	T. MARING	Northern Luzon	2.16
1987	T. HERMING	Northern Visayas	2.06
2004	T. MARCE	Luzon	1.93
1984	T. UNDANG	Eastern Visayas	1.54
1990	T. ILIANG	Luzon	1.50
1994	T. KATRING	Luzon	1.43
1989	T. SALING	Southern Luzon	1.39
1989	T. GORING	Northern Luzon	1.36

Table 5: Disastrous Typhoons in Terms of Death

Year	Name	Region/s Affected	Death
1991	T. URING	Eastern Visayas	5,101
1995	T. ROSING	Southern Luzon	916
1984	T. NITANG	Southern Visayas/Northern Mindanao	900
1984	T. UNDANG	Visayas	895
2004	TD WINNIE	Southern Luzon	893
1987	T. SISANG	Southern Luzon	808
1990	T. RUPING	Central Visayas	508
1998	T. LOLENG	Southern Luzon	303
1993	T. MONANG	Southern Luzon	272
1995	T. PEPANG	Visayas	265
2001	T. NANANG	Visayas	236
1988	T. YONING	Visayas	217
2001	T. FERIA	Luzon	188
1981	T. DINANG	Southern Luzon	188
1988	T. UNSANG	Southern Luzon	157
1993	T. PURING	Southern Visayas	157
1995	T. MAMENG	Luzon/Visayas	133
1993	T. KADIANG	Central Luzon	126
1995	TS PEPANG	Luzon	116
2000	T. REMING	Central Luzon	114

Appendix 2

The Incident Command System (ICS)

During a disastrous incident, the Disaster Risk Reduction Management Office (DRRMO) will apply the Incident Command System (ICS), a standardized on-scene emergency management concept. It is specifically designed to allow its users to adopt an integrated organizational structure, equal to the complexity and demands of single or multiple incidents without being hindered by jurisdictional boundaries. It is an excellent means of determining how resources will be used, who will coordinate them and how information will be communicated using terminologies.

It is a model tool for command, control and coordination of a response, that provides a means to coordinate the efforts of individual agencies as one agency working out differences of opinion as they work toward a common goal of stabilizing the incident and protecting life, property and the environment. ICS however, is not a permanent organizational structure or secretariat, but rather a flexible core mechanism for effective coordination and collaboration.

Features of an Incident Command System

The Incident Command System (ICS) has many features:

- It establishes common terminology, and standards of organization, doctrine and procedures that enable diverse organizations to work together effectively;
- It exercises interactive management components, each of which contributes strength and efficiency to the overall system;
- The responsible official establishes policy, direction, parameters, and delegates authority to the Incident Commander;
- The responsible official is generally not at scene all the time but maintains contact as necessary.

Application of an Incident Command System

ICS can be used for:

- Planned Events
- Fire incidents
- Air, Land and Sea Mishaps
- Hazardous materials spills
- Mass Casualty incidents
- Natural Disasters (sudden onset or slow onset)
- Search and Rescue missions
- Biological outbreaks
- Acts of Terrorism
- Long-term relief efforts

ICS Capabilities

ICS is a system capable of:

- Providing for a single management system of multi-jurisdictional incidents;
- Allowing modular expansion and contraction depending on the size and complexity of the incident;
- Being used for any type of incident;
- Being structured to include any type of resource including police, military, technical experts NGOs and international resources.

Eight Primary Elements of ICS

- Common terminology
- Modular organization
- Integrated communications
- A unified command structure
- Consolidated action plans
- A manageable span of control
- Designated incident facilities
- Comprehensive resource management

The Basic ICS Concepts

- Coordination and support to serve the needs of the command function – generally located away from the site / at the DOC / EOC.
- Command is the direct management of the on-scene operations.

Reasons to Transfer Command

- A more qualified person assumes command;
- Incident situation changes or makes good management sense;
- Increasing complexity; and
- Normal turnover of personnel on long incidents.

Functional Responsibility

- Command - overall responsibility
- Operations - direct tactical actions
- Planning/Intelligence - collect / analyze data, prepare incident action plan
- Finance/Administration - cost accounting and procurement

In An Incident Using Unified Command:

The ICS management process:

- Allows all agencies that have jurisdictional or functional responsibilities for the incident to jointly develop a common set of objectives and strategies; and
- Participating agencies retain their authority, responsibility, or accountability.

Figure 20 shows how an incident using a unified command is managed.

It also shows how the unity and chain of command are applied:

- Unity of Command – means that every individual has a designated supervisor
- Chain of Command – means that there is an orderly line within the ranks of the organization with lower levels subordinate to, and connected to, higher levels

figures

Figure 17: Command vs. Coordination
This figure illustrates the link between command and coordination using the ICS

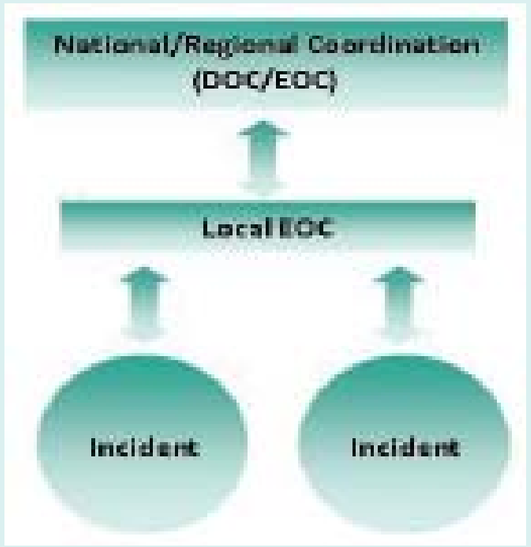


Figure 18: Incident Command System Major Organizational Functions

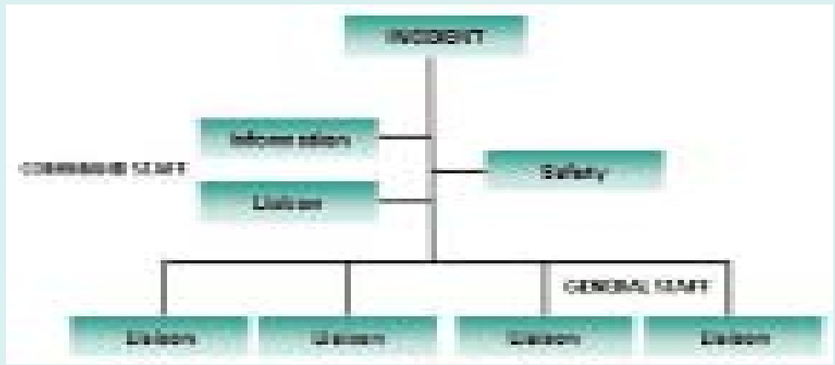




Figure 19: Incident Command System Organization

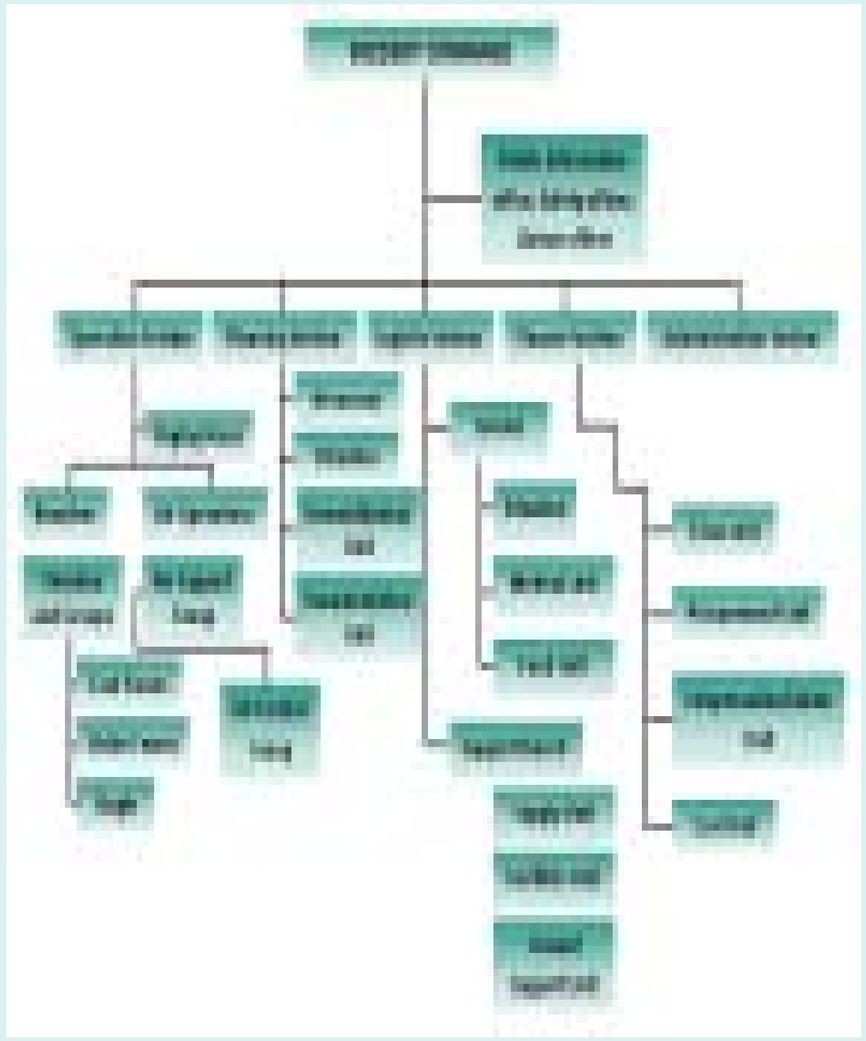
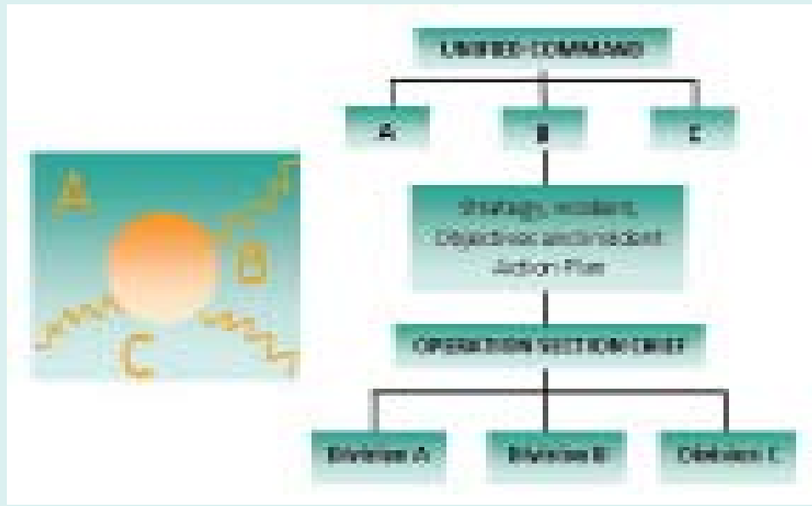


Figure 20: Incident Management



Figure 21: Managing an Incident Using a Unified Command



Appendix 3

Critical Incident Stress Debriefing (CISD)

A **Critical Incident** is an event caused by natural or man-made hazards that has the potential for causing powerful reactions in the majority who are exposed to it. Strong reactions if not discussed and understood can interfere with work and home life during and after the event.

When there are critical incidents, there are always victims. They may be categorized into:

- Direct victims - those killed or injured
- Indirect victims - family, friends, co-workers and those identified with the direct victims
- Hidden victims - crisis workers, volunteers, disaster managers and staff, police, firemen, hospital workers

Critical Incident Stress Debriefing (CISD) is a preventive stress management strategy designed to assist affected people in handling normal stress. Debriefing was originally developed to assist crisis response teams in recognizing and managing their own normal reactions to traumatic exposure. Later, it was used to assist victims, survivors and disaster workers as well. Through debriefing, individuals realize that experiencing severe stress during a critical incident is a normal reaction.

CISD is a tool that can:

- Assist victims to deal positively with the emotional effects of a severe event;
- Provide education about current and anticipated stress response;
- Provide information and support for coping and stress management.

CISD is conducted through sharing-reflection sessions that are confidential.

The objectives of CISD is for participants to:

- Share experiences, feelings, reactions during and after a critical incident;
- Learn and identify current and anticipated stress responses;
- Identify and discuss coping skills for reducing stress;
- Formulate and discuss contingency plans.

There are different kinds of reactions to critical incidents as can be gleaned from *Table 6.*

CISD Process: Sharing of Facts and Feelings

1. Clarifying Facts of the Critical Incident

Before sharing individual experiences on the critical incident, it is important to clarify exactly what happened. A resource person or the facilitator can inform the groups about overall facts and details surrounding the incident.

2. Confidentiality Agreement

Confidentiality should be observed to make the session helpful. The participants will also feel more comfortable in sharing their experiences. Confidentiality means that what has been said in the session will not be relayed to other people by either the facilitators or others present. Consult the group if they agree with this rule.

3. Guide Before, During and After Sharing

Before Sharing

Begin individual sharing by focusing on what happened and how people felt during and after the incident. Encourage discussions by taking on the mindset that there are no right or wrong answers or ideas. Let participants feel free to experience their feelings, thoughts and reactions. If others may not be willing to share, let them just listen and feel comfortable.

Do a short relaxation exercise following these steps:

- Close your eyes, slowly breathe in and then out.
- Continue this for three to four breaths;
- Then, slowly recall to mind scenes from the critical incident either from recent experience or the remote past.

In the sharing, each person will describe:

- What happened to him/her during the critical incident
- How did she/he feel then?
- How does she/he feel now?
- While sharing, that person may also recall another severe incident or life experience. If she/he wants, she/he may also share this.

After the Sharing

Thank the people for their openness and willingness to share. Take note of similar and unique responses. Relate these strong reactions to other people's reactions exposed to the same incidents. Encourage participants to confront their stress by noting that people normally react in the same way and cope in several ways.

Closing Group Sharing

Sharing a critical incident often brings back or seems to recreate the critical incident in one's mind and body. As a result, tension may be re-experienced. Relieve this tension by another round of breathing exercises.

Table 6: Different Kinds of Reactions to Critical Incidents



Appendix 4

NDCC Circulars / DepED Orders / Memoranda



b) Procedure

In line with the existing mandates of the national government agencies under the LGU, and local government units (LGUs) under RA 10121, and in accordance with the implementation of policies and guidelines set forth in the NDCC Circular Number 1A, it shall be the responsibility of the State to provide special protection to children from risks and hazards of the prevailing disaster situations and to provide relief and rehabilitation assistance based on the child's needs and requirements.

Affirming the above responsibility of the State, all national government agencies and local government units (Municipalities, Cities and Provinces) are hereby directed to integrate child rights-sensitive relief, base responsibilities under their existing mandates based on the Comprehensive Emergency Management Framework (mission, capabilities, response and rehabilitation) to ensure efficient delivery of basic services to displaced children during disaster situations.

b) Funding Sources

To effectively carry out the above projects, portions of NDRF, municipal equalization fund/Quick Response Fund and LGU Calamity Fund as the LGUs, shall be allocated for child-related programs/projects and may also avail NGOs and international funding institutions. The DSWD, DepED and DepH-H for the additional funding of such projects.

II. Monitoring /Reporting

The local DCCs shall institutionalize a child-sensitive monitoring system using the attached standard forms I, II, and III (Annex A) to keep track of the location of displaced children and to document cases of missing children, level of nutrition, psychosocial and educational activities as well as incidental appropriate measures to be taken as necessary.

The local DCCs' damage assessment reports on displaced populations shall include a separate entry on children. A consolidated format is attached (Annex B) to facilitate the food and nutritional requirements of displaced children.

The submission of reports shall follow the normal channel of reporting, from the barangay to the concerned municipality and then to the provinces and to the region.

The Office of Civil Defense shall furnish the Council for the Welfare of Children (CWC) with a copy of the report on displaced populations, highlighting children among other information of disaster operations, for consolidation purposes.

The concerned LGUs shall conduct regular surveys and masterlisting of children, utilizing the prescribed format (Annex C). The data shall include basic demographic information such as names, ages and socio-economic profile (skills, health and physical conditions).

The RBCCs shall form a periodic monitoring of the status of children housed at evacuation centers and submit recommendations as necessary to ensure that their needs and requirements are attended to by the concerned agencies.

The respective DCCs' Committee on Response shall conduct a semi-annual evaluation and assessment of policy guidelines set forth in the NDCC Circular 1A to test the local DCCs' standard of effectiveness.

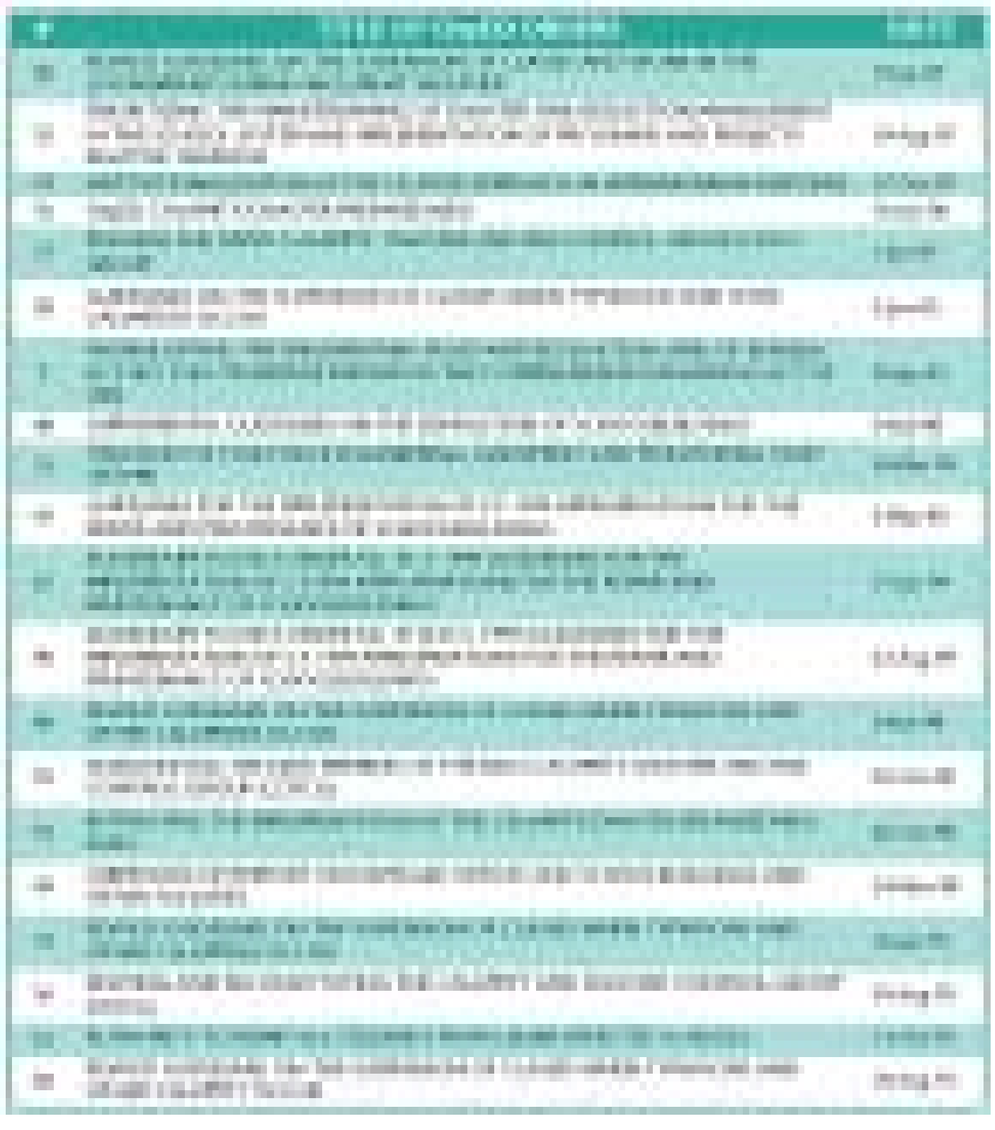
Please be guided accordingly.

ANTELMO J CRUZ, Jr.
Secretary, DSWD
and





LIST OF DepED ORDERS, MEMORANDA, ISSUANCES ON DISASTER RISK MANAGEMENT



#	TITLE OF DepED MEMORANDA	DATE
288	TRAINING OF TRAINORS ON DISASTER RISK REDUCTION AND ORIENTATION ON THE UTILIZATION OF THE DISASTER RISK REDUCTION RESOURCE MANUAL	11-Jun-08
6	DECLARING A STATE OF NATIONAL CALAMITY	8-Jan-07
12	CONDUCT OF ECHO TRAINING ON THE SCHOOL MAPPING EXERCISE AND ORIENTATION OF THE GIS-BASED SCHOOL PROFILE SYSTEM	10-Jan-07
13	CREATION OF A TASK FORCE ON DISASTER PREPAREDNESS THROUGH EDUCATIONAL MULTI-MEDIA (DP EM-MEDIA)	10-Jan-07
100	MAINSTREAMING DISASTER/RISK REDUCTION CONCEPTS IN THE SECONDARY CURRICULUM	13-Mar-07
175	CREATION OF A TECHNICAL WORKING GROUP (TWG) ON THE PREPARATION OF DepED CALAMITY, DISASTER AND RISK MANAGEMENT AND CONTROL OPERATIONS MANUAL	19-Apr-07
205	CONDUCT OF SIMULTANEOUS EARTHQUAKE DRILL IN PUBLIC AND PRIVATE SCHOOLS NATIONWIDE	6-Jun-06
213	GUIDELINES IN THE IMPLEMENTATION OF THE CALAMITY ASSISTANCE AND REHABILITATION EFFORTS (CARE) IN TYPHOON STRICKEN AREAS	22-May-07
232	PREVENTING H-FEVER IN SCHOOLS	12-Jun-07
235	2007 NUTRITION MONTH CELEBRATION	13-Jun-07
256	JULY 2007 NATIONAL DISASTER CONSCIOUS NESS MONTH (NDCM) OBSERVANCE	29-Jun-07
284	CONDUCT OF THE CY 2007 2ND QUARTER EARTHQUAKE DRILL	20-Jul-07
291	NATIONAL ORIENTATION ON THE USE OF DepED DISASTER RISK REDUCTION RESOURCE MANUAL	26-Jul-07
48	OBSERVANCE OF SAFETY MEASURES IN SCIENCE LABORATIES	30-Nov-06
71	IMPLEMENTATION OF THE KIDDIE/JUNIOR FIRE MARSHAL (K/JFM) PROJECT NATIONWIDE	22-Feb-06
205	CONDUCT OF SIMULTANEOUS EARTHQUAKE DRILL IN PUBLIC AND PRIVATE SCHOOLS NATIONWIDE	6-Jun-06
219	IMPLEMENTATION OF MEASURES TO ENSURE THE SAFETY OF SCHOOLCHILDREN IN PUBLIC AND PRIVATE SCHOOLS	9-Jun-06
221	SUPPLEMENTAL GUIDELINES ON THE CONDUCT OF SIMULTANEOUS EARTHQUAKE DRILL IN PUBLIC AND PRIVATE SCHOOLS NATIONWIDE	16-Jun-06
231	ASSESSMENT OF THE SCHOOLBUILDING'S STRUCTURAL INTEGRITY AND STABILITY (ASSIST) NATIONWIDE	20-Jun-06
249	2006 DISASTER CONSCIOUSNESS MONTH	30-Jun-06
256	ADDENDA TO DepED MEMORANDUM NO. 231, S. 2006, (Assessment of the Schoolbuilding's Structural Integrity and Stability (ASSIST) NATIONWIDE	4-Jul-06
336	PREVENTIVE/MITIGATION MEASURES TO LESSEN THE IMPACT OF CALAMITIES/ DISASTERS	26-Sep-06
362	SCHOOL MAPPING EXERCISE	6-Oct-06
428	FORMULA KONTRA PAPUTOK CAMPAIGN	15-Dec-06
194	NATIONAL EARTHQUAKE DRILLS IN PUBLIC SCHOOL	8-Jul-05
226-A	IMPACT ASSESSMENT OF THE NATIONAL EARTHQUAKE DRILL IN PUBLIC SCHOOLS DepED CENTRAL OFFICES	5-Aug-05
280	ROAD SHOW ON SCHOOLS ELECTRICAL AND WATER FACILITIES ASSESSMENT IN PUBLIC SCHOOLS	27-Sep-05
246	2004 DISASTER CONSCIOUSNESS WEEK	2-Jun-04

#	TITLE OF DepED MEMORANDA	DATE
448	RE-ORIENTATION CONFERENCE ON THE IMPLEMENTATION OF CITIZENSHIP ADVANCEMENT TRAINING (CAT) IN PUBLIC AND PRIVATE SECONDARY SCHOOLS	24-Nov-04
457	CREATION OF COMMITTEE FOR THE FORMULATION OF GUIDELINES FOR RANDOM DRUG TESTING OF DEPED PERSONNEL	26-Nov-04
477	INFORMATION CAMPAIGN FOR EL NINO PHENOMENON	28-Dec-04
30	YOUTH FOR ENVIRONMENT SUMMER CAMP 2003	5-Feb-03
33	YOUTH SMOKING PREVENTION (YSP) PROGRAM	2-Apr-03
59	REVISED GUIDELINES ON THE SUSPENSION OF CLASSES WHEN TYPHOONS AND OTHER CALAMITIES OCCUR	23-Jul-03
63	GENERAL GUIDELINES ON RANDOM DRUG TESTING OF HIGH SCHOOL STUDENTS	4-Aug-03
116	THE INTERNATIONAL EARTH DAY CELEBRATION	4-Apr-03
174	ENVIRONMENT MONTH CELEBRATION	4-Jun-03
175	2003 NUTRITION MONTH CELEBRATION	4-Jun-03
216	2003 WORLD ENVIRONMENT DAY ESSAY WRITING CONTEST	4-Jul-03
233	2003 DISASTER CONSCIOUSNESS MONTH	17-Jul-03
260	DISSEMINATION OF NATIONAL COMPUTER CENTER (NCC) ICT ADVISORY RE PREVENTIVE MEASURES TO CONTAIN AND STOP FURTHER SPREADING OF COMPUTER VIRUS	4-Aug-03
334	10nth DEPED-RCBC SHORT STORYWRITING CONTEST ON ENVIRONMENTAL PROTECTION AND CONSERVATION	9-Sep-03
338	INTERNATIONAL MONTH FOR THE PRESERVATION OF THE OZONE LAYER	9-Sep-03
342	2003 INTERNATIONAL COASTAL CLEAN-UP (ICC)	11-Sep-03
343	NATIONAL MARITIME WEEK CELEBRATION	11-Sep-03
426	2003 DRUG ABUSE PREVENTION AND CONTROL (DAPC) WEEK	4-Nov-03
432	2004 LIGTAS TIGDAS CAMPAIGN	7-Nov-03
451	WORLD AIDS DAY	17-Nov-03
68	REVISED IMPLEMENTING GUIDELINES FOR THE SCHOOL-BASED REPAIR AND MAINTENANCE SCHEME (SBRMS)	11-Apr-02
104	OBSERVANCE OF CY 2002 DISASTER CONSCIOUSNESS MONTH	19-Jun-02
233	PRECAUTIONARY MEASURES TO PROTECT SCHOOLCHILDREN AND EMPLOYEES FROM ALL FORMS OF TERRORISM	22-Oct-02
241	NATIONAL DISASTER COORDINATING COUNCIL (NDCC) ADVISORY ON BOMB THREATS AND EXPLOSIONS	25-Oct-02
262	OBSERVANCE OF SAFETY MEASURES BEFORE AND DURING NATURAL AND MAN-MADE DISASTERS IN SCHOOLS AND DECS OFFICES	27-Aug-01
510	AMENDMENTS TO DECS MEMORANDUM NO. 394, S. 2000	31-Oct-00
242	NATURAL DISASTER CONSCIOUSNESS WEEK	15-Jun-99
459	DISASTER AWARENESS, PREPAREDNESS AND DRILLS	22-Oct-99
510	AMENDMENTS TO DECS MEMORANDUM NO. 394 S. 2000	31-Oct-99
127	REMINDING THE SCHOOLS AND OFFICES OF THE FIRE SAFETY MEASURES	27-Mar-98
248	REVITALIZING THE CALAMITY AND DISASTER CONTROL GROUPS	11-Jun-98
268	NATURAL DISASTER CONSCIOUSNESS WEEK	24-Jun-98
425	VULNERABILITY AREAS OF THE LA NINA PHENOMENON	12-Oct-98
38	IMPLEMENTATION OF FIRE SAFETY MEASURES	14-Feb-97
360	DISTRIBUTION AND UTILIZATION OF DECS-DOST PAGASA MATERIALS ON NATURAL HAZARDS	13-Oct-95
376	APPEAL FOR ASSISTANCE TO TYPHOON- STRICKEN AREAS	6-Nov-95

#	TITLE OF DepED MEMORANDA	Date
240	"AFTERCARE IN THE AFTERMATH AND UNDERSTANDING THE QUAKE WITHIN" BY WAYNE A. MOSES	4-Oct-90
254	SOME SAFETY REMINDERS DURING AND AFTER EARTHQUAKE	24-Oct-90
268	INCREASING PUBLIC AWARENESS AND PREPAREDNESS ON GEOLOGICAL DISASTERS	12-Nov-90
110	CALAMITY /DISASTER PREPAREDNESS PLAN	1-Jul-86
76	NATURAL DISASTER CONSCIOUSNESS WEEK	8-Mar-89
16	CREATION OF MEC TASK FORCE ON REHABILITATION OF SCHOOLS IN CALAMITY AREAS TO BE KNOWN AS REHABS	20-Apr-82
112	ADDITIONAL GUIDELINES FOR THE SCHOOL SAFETY PATROL PROGRAM	15-May-80
108	CONTINGENCY PLAN ON CALAMITY/DISASTER AND OTHERS OF SIMILAR NATURE	9-May-80
94	TRAFFIC SAFETY EDUCATION	30-Mar-79
42	DEC CALAMITY/DISASTER PREPAREDNESS PLAN	21-Feb-77

#	TITLE OF DepED ISSUANCES	DATE
	TRAINING ON DISASTER RISK REDUCTION MANAGEMENT IN THE SCHOOL SYSTEM, ORIENTATION ON EMERGENCY PREPAREDNESS AND RESPONSE PLANNING	17-Oct-07
	CONDUCT OF THE 4TH QUARTER EARTHQUAKE DRILL IN ALL SCHOOLS (PUBLIC AND PRIVATE) AND ALL DEPED OFFICES AND ATTACHED AGENCIES	18-Oct-07
	TITLE OF DepED BULLETIN	**DATE**
4	PHILIPPINE TIME-BOUND PROGRAM (PTBP) FOR THE ELIMINATION OF THE WORST FORMS OF CHILD LABOR (WFCL)	17-Sep-03

Appendix 5

How to Read Maps

maps



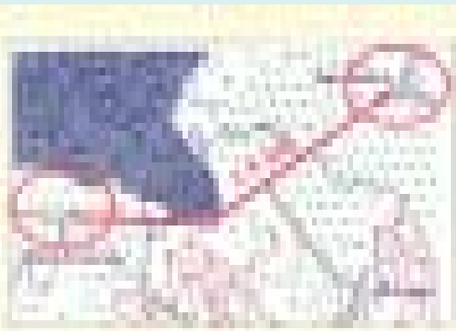
maps



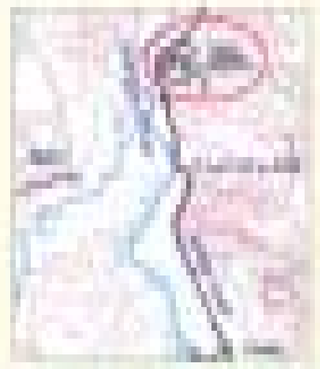


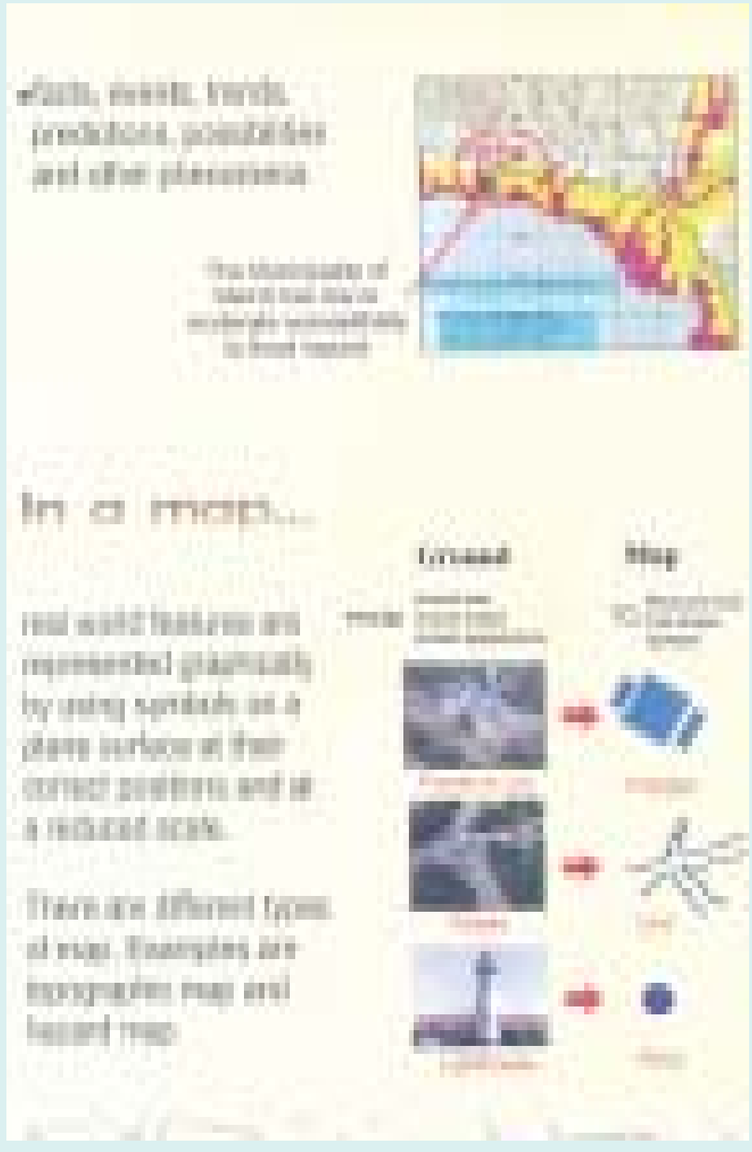












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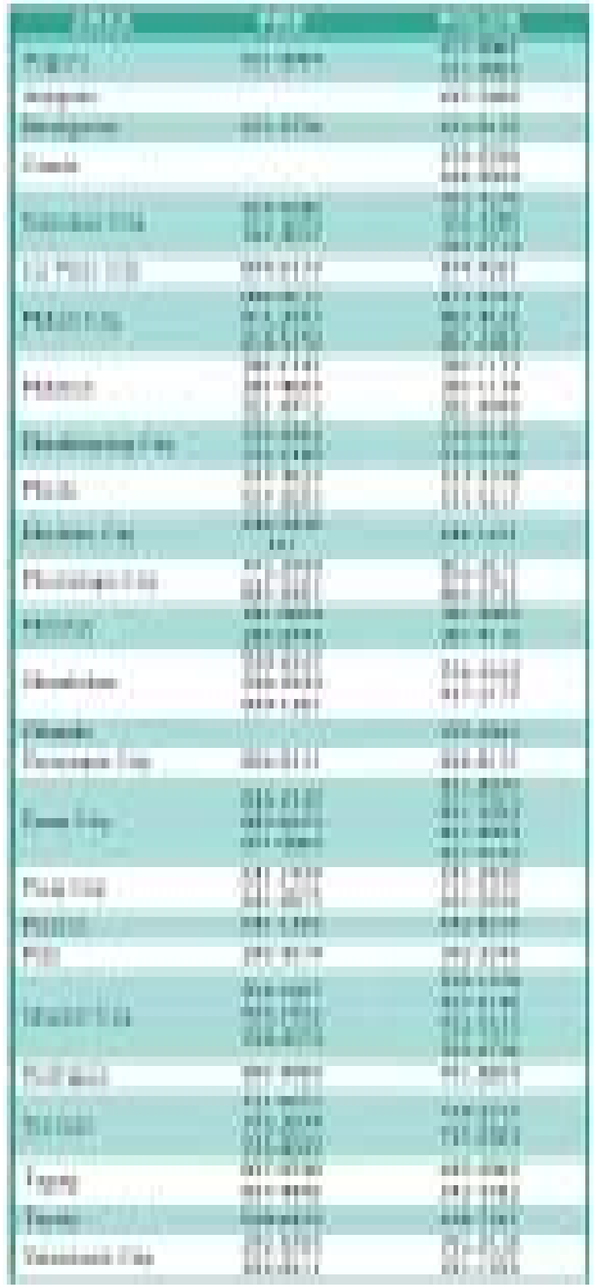
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emergency numbers

List of National Disaster Coordinating Councils (NDCC) Phone Numbers per Region

Region	Phone Numbers	Location
NCR	02-9113038 02-9115061,64	CAMP AGUINALDO
1	072-8882384	LA UNION
2	078-8441630	CAGAYAN
3	045-9613701	CAMP OLIVAS PAMPANGA
4	043-7234248	BATANGAS
5	052-4815031	LEGASPI
6	033-3369353	ILOILO
7	032-2536162	CEBU
8	053-3235301	TACLOBAN
9	062-9916361	ZAMBOANGA
10	088-2330295	BUTUAN
11	082-2332022	DAVAO CITY
12	064-4212879	COTABATO
CARAGA	085-8156345	CARAGA
ARMM	064-4212879	ARMM
CAR	074-4445298	BAGUIO CITY



Emergency and Important Phone Numbers for Metro Manila

Important Phone Numbers
CIVIL DEFENSE OPERATION CENTER *(for extreme emergencies caused by disaster or calamities like typhoons, floods, earthquakes, etc.)* **911-5061**
PATROL 117 **117**
BANTAY BATA **163**
KAPUSO FOUNDATION **928-4299**
MERALCO **16-211** **631-1111**
MANILA WATER COMPANY **1627**
MAYNILAD WATER SERVICES **1629**
NATIONAL POSION CONTROL **524-1078**
MMDA **136**
ASSN. OF VOLUNTEER FIRE CHIEFS AND FIREFIGHTERS OF THE PHILS. INC. **160-16**
ASSN. OF PHILIPPINE VOUNTEER FIRE BRIGADES INC. **522-2222**

resources

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PAG-ASA
http://www.pagasa.dost.gov.ph/

Hyatt Hotel
http://www.rapidstar.org.uk/image/hyatt04.jpg

Landslides
http://newsimg.bbc.co.uk/media/images/
http://wwwhscript.com

Floods
http://www.abc.eznettools.net

El Nino
http://www.rfu3.da.gov.ph

Fire
http://www.img.timeinc.net

Typhoon Reming
http://www.in-australia.org.au

notes

notes



Republic
of the Philippines

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of Education

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