

SCHOOL-BASED VIOLENCE PREVENTION IN URBAN COMMUNITIES OF LATIN AMERICA AND THE CARIBBEAN



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.5 Disaster Risk Reduction in the Latin American and Caribbean School Environment





Preface & Acknowledgements



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This School-Based Violence Prevention Toolkit was produced by a team at the World Bank led by Bernice van Bronkhorst (Senior Urban Specialist, LCSUW), Ximena Anwandter (Violence Prevention Specialist, Consultant, LCSUW/LCSSO), and Lorena Cohan (Social Development Specialist, LCSSO) with extensive background research and technical input from Joan Serra Hoffman (International Violence Prevention Expert, World Bank Consultant), and under the overall guidance of Guang Chen (Sector Manager, LCSUW) and Maninder Gill (Sector Manager, LCSSO).

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This Toolkit is composed of the following five publications: 1) Practical Guide (a primer on violence and violence prevention, the role of schools and communities in preventing violence, a five stage method for the design and implementation of a school-based violence prevention program and the recommendations from the piloting workshops in Colombia and Nicaragua); 2) Tools (a variety of selected tools to assist in developing the school-based violence prevention action plan); 3) Case Studies (successful, evidence-based school violence prevention practices); 4) Safe School Spaces (a practical tool for the design of safe schools from the CPTED/environmental design perspective); and 5) Disaster Risk Reduction

in the Latin American and Caribbean School Environment (key elements for reducing schools' vulnerability to disasters).

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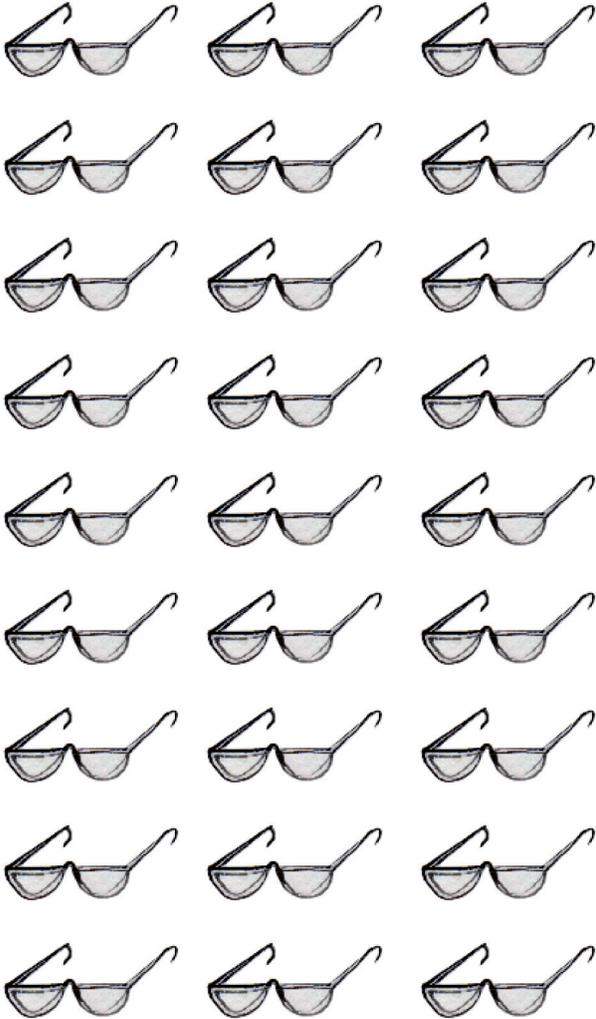
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INTRODUCTION

We inhabit a living, changing planet. On the one hand, climate change is becoming increasingly visible, giving us a glimpse of a world of unsuspected consequences. On the other hand, threats of natural origin are the subject of daily concern; these stem from the earth's dynamics both in the atmosphere and within the planet, based on which these threats are catalogued according to their hydrometeorological and geological origins.

These threats eventually materialize, unleashing potentially damaging events such as tropical storms, hurricanes, droughts, tsunamis, volcanic eruptions, forest fires, etc. Their inevitable presence transcends local and sometimes national boundaries and constitute a potential and ongoing external risk factor for human settlements located in their path or their area of influence.

These natural manifestations are elements that merit our attention since their possible consequences can be devastating: the loss of human lives, injuries, material damages, the interruption of social and economic activities, environmental degradation, etc., are the marks of their presence when they impact populated areas. The magnitude and extent of damages will depend greatly on the capacity to address the characteristics of a determined event and on how long it takes to respond in its aftermath. This intrinsic risk factor is called vulnerability; the event

whose impact creates a severe interruption in the functioning of a community or society and causes human losses and significant material losses is called a disaster.

Daily efforts are conducted at global, regional, national and local levels to reduce the risk of disasters to which most of world's population is exposed. However, despite having been able to decrease the number of human lives lost, paradoxically there has been an increase in the affected population, totaling hundreds of millions of people each year. This can be understood if we analyze it from the viewpoint of factors such as climate change and vulnerability that point to an increase in the amount, magnitude and recurrence of damaging events such as hurricanes. Another factor is the increased vulnerability that is generated by such things as the implementation of incorrect land occupation models, the steady increase in the urban population, the increase in levels of poverty and marginality, a disproportionate reassessment of the constructed environment, and the use of technologies that cause environmental degradation and ecosystem depletion, which negatively impact any development plan forecast.

The search for strategies that allow this reality to be modified unquestionably assigns a key role to education in the achievement of proposed objectives. This is because the aims are to: exert an effect on this reality by understanding the factors and causes of disaster risks, at external and internal levels; change

DISASTER RISK REDUCTION STARTS AT SCHOOL



the population's perception, appreciation, attitude and implication about them both collectively and individually; promote the creation of a different culture of risks and disasters; and build and strengthen the capacities of all stakeholders, combining local, national and regional strengths and resources, to increase their resilience.

Under this approach, education must address the issue from a broad, integrated and integrating perspective; risk management from and to the education sector should be understood as a set of policies, guiding principles, strategies and courses of action that address the issue from at least three areas of development:

First, the promotion of the inclusion of disaster risk reduction in curriculums in the various levels and modalities present in Latin America educational system, regardless of the methodological strategy used to address this subject. This requires the adequate monitoring of teachers as well as of teachers in training, and of the preparation of teaching materials, methodological guides and textbooks, among other resources that aid in addressing the subject in the classroom.

Second, the assurance of safe spaces for the conduction of the teaching-learning process, even under emergency and disaster situations, incorporating vulnerability reduction criteria in the different processes of school building services, including furniture and equipment.

Third, the preparation of educational communities to deal with possible emergency and disaster situations, promoting, among other aspects, the preparation, implementation and evaluation of school protection plans that are integrated with the institutional plans of educational centers, to guarantee user safety and the continuity of educational services under emergency and disaster situations.

In order to provide information on the practices carried out in the Latin American context and thus to exert a positive effect on disaster risk reduction in the education sector at regional, subregional, national and local levels, this publication documents the experience of risk reduction in the school environment in the Central American and South American Regions; the latter refers specifically to the Andean Subregion (both in the countries themselves and in the city of Bogotá, Colombia). Thus, the aim is to contribute to the development of citizen awareness, specifically that of the educational community, in terms of its role in the formation of safer schools.

The publication is based on the results obtained through three projects implemented by different institutions in the abovementioned geographic areas.

These are: the "Strengthening of Local Risk Management in the Central American Education Sector" Project, conducted under the framework of the ECHO V Action Plan/Central America and executed by the Central American Coordinating Office for Education



and Culture (SICA/CECC) with technical support from UNICEF's Regional Offices for the Americas (UNICEF/TACRO) and the United Nations International Strategy for Disaster Reduction (UNISDR); the Support for Disaster Prevention in the Andean Community Project (PREDECAN), adopted by the Andean Committee for Disaster Prevention and Response (CAPRADE), under the framework agreement between the European Community and the General Secretariat of the Andean Community; and the Risk Reduction Project of the Bureau of Emergency Response and Prevention (DPAE) of the Office of the Mayor of Bogotá, Colombia.

Finally, in this publication we also wish to recommend, as a practical reference guide, the recent publication "Índice de Seguridad de Centros Educativos" ("Index of School Safety"), prepared in Guatemala with GFDRR resources. This index constitutes a basic tool to evaluate a school's level of safety with respect to its surroundings, infrastructure and functionality. The document is available at: <http://conred.gob.gt/>



1 Terminology

For the purpose of making available a glossary of terms that enables the subsequent establishment of a common language on disaster risk reduction, the following are the basic definitions promoted by the Secretariat of the United Nations International Strategy for Disaster Reduction (UNISDR). These have been constructed by taking into consideration multiple international sources and comments by experts, and are constantly being revised and are periodically updated.

Acceptable risk

The level of loss a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions. In engineering terms, acceptable risk is also used to assess structural and non-structural measures undertaken to reduce possible damage at a level which does not harm people and property, according to codes or “accepted practice” based, among other issues, on a known probability of hazard.

Biological hazard

Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Examples of biological hazards: outbreaks of epidemic diseases, plant or animal contagion, insect plagues and extensive infestations.



Photo: National Oceanic and Atmospheric Administration (NOAA)

Capacity

A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.

Capacity building

Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk. In extended understanding, capacity building also includes development of institutional, financial, political and other resources, such as technology at different levels and sectors of the society.





Photo: www.planetanoticia.com/Eruption of Chaitén volcano in Chile.



cope using its own resources. A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.

Climate Change

The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean state or variability of the climate for that place or region. Changes in climate may be due to natural processes or to persistent anthropogenic changes in atmosphere or in land use. Note that the definition of climate change used in the United Nations Framework Convention on Climate Change is more restricted, as it includes only those changes which are attributable directly or indirectly to human activity.

Coping capacity

The means by which people or organizations use available resources and abilities to face adverse consequences that could lead to a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions. The strengthening of coping capacities usually builds resilience to withstand the effects of natural and human-induced hazards.

Disaster

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to

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. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

Disaster risk reduction

The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

The disaster risk reduction framework is composed of the following fields of action, as described in ISDR's publication 2002 "Living with Risk: a global review of disaster reduction initiatives", page 23:

- Risk awareness and assessment including hazard analysis and vulnerability/capacity analysis;
- Knowledge development including education, training, research and information;
- Public commitment and institutional frameworks, including organizational, policy, legislation and community action;
- Application of measures including environmental management, land-use and urban planning, protec-



Photo: Ines Marcano.



Photo: Intermon-Oxfam/IDDI.

tion of critical facilities, application of science and technology, partnership and networking, and financial instruments;

- Early warning systems including forecasting, dissemination of warnings, preparedness measures and reaction capacities.

Emergency management

The organization and management of resources and responsibilities for dealing with all aspects of emergencies, in particular preparedness, response and rehabilitation. Emergency management involves plans, structures and arrangements established to engage the normal endeavors of government, voluntary and private agencies in a comprehensive and coordinated way to respond to the whole spectrum of emergency needs. This is also known as disaster management.

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. Geological hazard includes internal earth processes of tectonic origin, such as earthquakes, geological fault activity, tsunamis, volcanic activity and emissions as well as external processes such as mass movements: landslides, rockslides, rock falls or avalanches, surfaces collapses, expansive soils and debris or mud flows. Geological hazards can be single, sequential or combined in their origin and effects.

Hazard

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity, frequency and probability.

Hazard analysis

Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behavior.

Hydrometeorological hazards

Natural processes or phenomena of atmospheric, hydrological or oceanographic nature, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hydrometeorological hazards include: floods, debris and mud floods; tropical cyclones, storm surges, thunder/hailstorms, rain and wind storms, blizzards and other severe storms; drought, desertification, wildland fires, temperature extremes, sand or dust effects.





State of Vargas, Venezuela. 1999. Photos: Urban Platform.

storms; permafrost and snow or ice avalanches. Hydrometeorological hazards can be single, sequential or combined in their origin and effects.

Mitigation

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Natural hazards

Natural processes or phenomena occurring in the biosphere that may constitute a damaging event and may cause death or injury, material damage, interruption of social and economic activity, or environmental degradation. Natural hazards can be classified by origin, namely: geological, hydrometeorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

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. Depending on social and technical feasibility and cost/benefit considerations, investing in preventive measures is justified in areas frequently affected by disasters. In the context of public awareness and education, related to disaster risk reduction, changing attitudes and behavior contribute to promoting a “culture of prevention”.

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 risk. Recovery (rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures.

Relief/response

The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term or protracted duration.

Risk

The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Conventionally risk is expressed by the notation Risk

= Hazards x Vulnerability. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability. Beyond expressing a possibility of physical harm, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes.

Technological hazards

Danger originating from technological or 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. Some examples: industrial pollution, nuclear activities and radioactivity, toxic wastes, dam failures; transport, industrial or technological accidents (explosions, fires, spills).

Vulnerability

The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. For positive factors, which increase the ability of people to cope with hazards, see definition of capacity.



Photo: Intermon-Oxfam/IDDI.



The website of the Regional Unit for the Americas of the United Nations International Strategy for Disaster Reduction (UNISDR) provides additional information on other terms related to disaster risk reduction and information on the process of revising the definitions.
<http://www.unisdr.org> (in English)
<http://www.eird.org/> (in Spanish)



2 Regulatory and Reference Framework

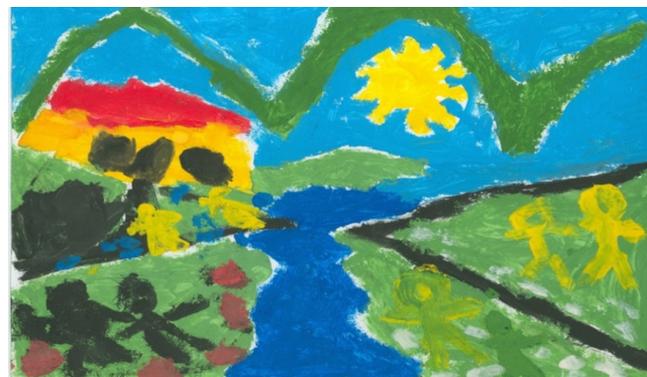
Disaster risk management is understood as the set of decisions and knowledge developed by societies and communities to implement policies and strategies and to strengthen capacities in order to reduce their vulnerability and thus the impact of hazards and the magnitude of the disasters that cause them. To channel this approach, education becomes the predominant means to generate this new culture of risks and disasters and to develop the necessary skills at all levels of society.

- Millennium Development Objectives
- World Declaration on Education for All
- Hyogo Framework for Action
- Hemispheric Action Plan to Reduce the Education Sector's Vulnerability to Socio-Natural Disasters (Plan de Acción Hemisférico para la Reducción de la Vulnerabilidad del Sector Educativo a los Desastres Socionaturales, EDUPLANhemisférico)
- INEE. Minimum Standards for Education in Emergencies

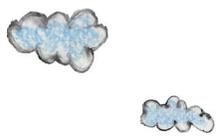
This view is reflected in a significant number of documents that have been endorsed by nations at global, regional and subregional levels, under the auspices of multiple international cooperation agencies, including the United Nations and other international agencies and NGOs.

Knowledge and understanding of this broad frame of reference allow us to discover valuable tools for use in the field of disaster risk reduction, from a global and local perspective, and particularly that of schools.

With this in mind, a summary of key documents is presented. Many of the documents are of global and multisectoral interest and lay the foundations of key aspects for risk reduction from an environmental perspective. They include:



UNICEF/EIRD/Red Cross/Plan Internacional/DIPECHO. Drawing and coloring contest "Disaster reduction starts in school". Ages 5 to 6 Category. Alberto Reyes, Panama, 1st place.

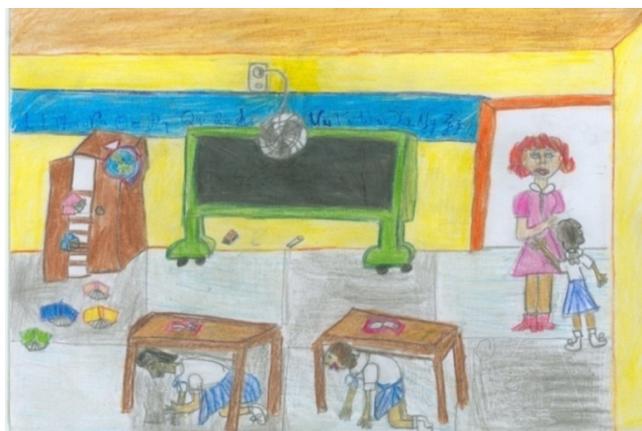


1.

MILLENNIUM DEVELOPMENT OBJECTIVES.

At the United Nations Millennium Summit, held in New York City in September 2000, the leaders of participating countries agreed to establish a framework for activities to fight poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. This framework established 8 measurable objectives, with deadlines to 2015, divided into 20 targets and more than 60 indicators. School-based disaster risk reduction is fully consistent with two of the Millennium Objectives: eradicating extreme poverty and hunger and achieving universal primary education.

With regard to the former objective, as poverty and hunger are eradicated, communities' vulnerability will decrease and societies will be in a stronger position to cope with disasters. In terms of universal primary education, if through schools boys and girls are able to learn about and understand their surroundings and the hazards implicit in them, handle those elements that make them vulnerable and at the same time learn to protect themselves from natural or technological events that occur repeatedly, this will certainly have an effect on reducing the causes and consequences of disaster risk through a more critical, analytical and participatory outlook in which each individual is able to create changes in his surroundings without jeopardizing the resources of future generations.



UNICEF/EIRD/Red Cross/Plan Internacional/DIPECHO. Drawing and coloring contest "Disaster reduction starts in school". Ages 7 to 9 Category. María Rebekah Reyes, Trinidad, 1st place.

The complete text of the 2008 Millennium Development Objectives Report 2008 is available in .pdf format on the United Nations Development Programme (UNDP) website:
<http://www.undp.org/>





2. WORLD DECLARATION ON EDUCATION FOR ALL.

The World Education Forum was held in the city of Dakar in 2000, under the auspices of UNESCO, UNDP, UNICEF, UNFPA and the World Bank, with the aim of defining a strategy to achieve the vision of “education for all” which was outlined 10 years earlier in the World Declaration on Education for All, held in Jomtien, Thailand.

In the 2,000-word document, “Dakar Framework of Action, Education for All: Meeting our Collective Commitments,” a key recommendation was made for the education sector with regard to its role in disaster risk reduction: education under emergency situations should be included from the very beginning of the country’s development process, and should not be considered a “relief” activity.

3. HYOGO FRAMEWORK FOR ACTION.

At the World Conference on Disaster Reduction, held in the city of Kobe, Japan, in 2005, 168 governments adopted a 10-year plan to achieve a safer world in the face of natural hazards. The key objective of the Hyogo Framework for Action (HFA) is to considerably reduce the losses caused by disasters in terms of human lives and social, economic and environment assets of communities and countries by 2015.

This plan offers a series of guiding principles, contained in three strategic objectives and five priority courses of action, to achieve vulnerable communities’ resilience to disasters.

The third course of action is specifically related to the education sector. It proposes: “To develop greater understanding and awareness through the use of knowledge, innovation and education to build a culture of safety and resilience at all levels.”



The complete text of the document “Education for All: Meeting Our Collective Commitments” is available in .pdf versión on the website of the United Nations Educational, Scientific and Cultural Organization (UNESCO):
<http://www.unesco.org/>

The website of the Regional Unit for the Americas of the United Nations International Strategy for Disaster Reduction (UNISDR) provides additional information on other terms related to disaster risk reduction and on information regarding the process of revising the definitions:
<http://www.unisdr.org> (in English)
<http://www.eird.org/> (in Spanish)

4.

HEMISPHERIC ACTION PLAN TO REDUCE THE EDUCATION SECTOR'S VULNERABILITY TO SOCIO-NATURAL DISASTERS (EDUPLANHEMISFÉRICO).

In the hemispheric context, under the auspices of the Organization of American States (OAS), the Panamerican Health Organization (PAHO/WHO) and the International Decade for Natural Disaster Reduction (IDNDR) declared by the United Nations General Assembly, the Hemispheric Action Plan to Reduce the Education Sector's Vulnerability to Socio-Natural Disasters (Plan de Acción Hemisférico para la Reducción de la Vulnerabilidad del Sector Educativo a los Desastres Socionaturales, EDUPLANhemisférico) was proposed in Caracas in 1997 as a strategy aimed at the continent's countries.

The Plan's key objective is to support the development and implementation of activities aimed at reducing the vulnerability to natural disasters both inside and outside the education sector. This takes place under the principle that society as a whole is responsible for preventing and reducing the effects of natural events that have direct and indirect impact on the continuity and quality of education. Therefore, emphasis is placed on three thematic areas:

- Academic aspects
- Buildings
- Public participation

The thematic area of “academic aspects” includes strategies aimed at including in academic programs and in professional programs of various disciplines, subjects related to reducing the vulnerability of schools at preschool, primary, middle and high



UNICEF/EIRD/Red Cross/Plan Internacional/DIPECHO. Drawing and coloring contest “Disaster reduction starts in school”. Ages 10 to 12 Category. Kara Gay, Grenada, 1st place.

school levels, adapting the program to each country’s variables of vulnerability.

The thematic area of “buildings” establishes the maintenance and adjustment of educational buildings in the sector as a whole, according to natural hazards, so that the processes of planning, design, work execution, repair, reconstruction and maintenance are modified in terms of the safety of these buildings. In terms of physical safety, the structural, non-structural and functional aspects of schools can be used.

Finally, the thematic area of “public participation” promotes the development of emergency and disaster preparedness through ministries of education, schools, universities and other agencies in order to generate specialized organizational plans aimed at providing support for training and consultations, as well as community-level operational support.

The executive summary of EDUPLANhemisférico is available in .pdf format on the Organization of American States (OAS) website:
<http://www.oas.org/>

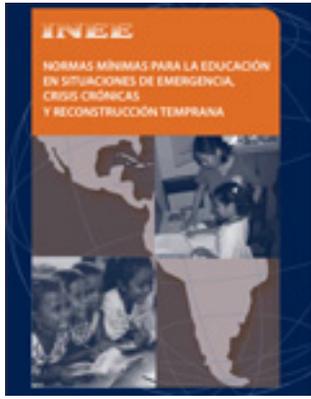
5. INEE. MINIMUM STANDARDS FOR EDUCATION IN EMERGENCIES, CHRONIC CRISES AND EARLY RECONSTRUCTION.

The Inter-Agency Network for Education in Emergencies (INEE) is an open, global network composed of governments, nongovernmental organizations, United Nations organizations, donor institutions, professionals, researchers and individuals from the affected areas, who work together under a humanitarian and development framework with the objective of ensuring the right to education in emergencies and during post-crisis reconstruction.¹

The Minimum Standards for Education in Emergencies were developed by INEE through a broad process of collaboration and consultation. They constitute a manual of international standards so that all people—children, adolescents and adults—can have the right to be able to continue their education in emergencies and during early reconstruction processes.

The handbook offers a set of minimum standards, key indicators and guidance notes for community action in the context of education, from the development of education programs to their implementation and continuity, as well as government and community support.

1. <http://www.ineesite.org/>



The standards are divided into five categories:

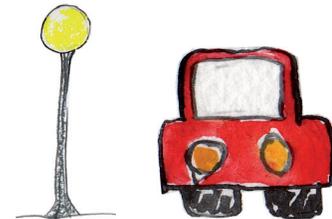
- Minimum standards common to all categories
- Access and learning environment
- Teaching and learning
- Teachers and other learning personnel
- Education policy and coordination

The standards are designed to be used as a response to situations ranging from disasters to armed conflicts, but they may also be used in preparedness efforts and in humanitarian aid.²

The website of the Hispanic Community of the Inter-Agency Network for Education in Emergencies (INEE) provides additional information on the Network and on how to become a member:
<http://www.ineesite.org/>

The Spanish translation of the Minimum Standards for Education in Emergencies, Chronic Crises and Early Reconstruction is available in .pdf format on the UNICEF website:
<http://www.unicef.org/lac/dipecho/>

2. Minimum Standards for Education in Emergencies, Chronic Crises and Early Reconstruction. Introduction. (Las Normas Mínimas para la Educación en Situaciones de Emergencia, Crisis Crónica Y Reconstrucción Temprana. Introducción).



3 Disaster Risk Reduction and the Education Sector

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Disaster risk reduction, for and from the education sector, is proposed at global level through three areas of development that have been evolving and maturing as key courses of action, as established in EDUPLANhemisférico:

- Curriculum
- Educational infrastructure, including structural and non-structural safety
- School safety preparedness and plans

It is only through the planning, development, application and evaluation of policies, standards, strategies, plans, projects and actions in these three areas that high exposure to risks can be reduced and the resilience of our nations and communities to disasters can be increased. Thus, it is important to work in an ongoing, simultaneous and coordinated manner, under a multi- and trans-disciplinary approach, with the political, institutional, technical and financial support and coordinated efforts of ministries of education, national civil protection and disaster response systems, civil society stakeholders, communities, international agencies, NGOs and especially the active participation of teachers, children and adolescents.



Photo: Ines Marcano.

1.

CURRICULUM AND TRAINING.

The curriculum should be considered the essential means to address disaster risk reduction in the context of development, strengthening the creation of a culture of prevention that builds capacities in order to increase the resilience of individuals and communities in the event of disasters. One of the key objectives should be to make the curriculum an agent for reducing vulnerability. The issue should be included in all levels and types of formal education, in an integrated, ongoing manner, not as an occasional element that is often the result of external pressures which cause the issue to be raised in the school in an isolated or temporary manner.

Achieving the objective proposed under this area of development requires the complementarity of other actions that facilitate the process of teaching and learning about this subject in the classroom. These include:

- Inclusion of the subject in the curriculums of schools and universities where teachers are trained
- Inclusion of the subject in ongoing teacher training
- Development of sufficient support material to address the subject in the classroom

1.1. GUIDELINES FOR TEACHERS

It is recommended that the subject of disaster risk management be addressed in the classroom through the use of an active, participatory methodology. First, the learning experiences to be conducted must be identified and, depending on the grade or year, the subject and the circumstances of the school and its surroundings, any necessary modifications and ad-



justments should be made. Once the time is planned and the teaching materials needed to conduct the activities are prepared, it is recommended that the following phases be followed:³

- **Address knowledge:** Discussion should be promoted among students on the specific subject to be addressed and its relationship with the immediate surroundings, home, school, community, as well as with the country and the planet.

Example: Concept of risk. What do we know about risk? The teacher can ask this question and encourage students to answer by didactically guiding and analyzing their opinions.

- **Expand information:** Promote research and other complementary activities for exploring knowledge at individual and group levels: bibliographies, visits, interviews, observations, etc.

Example: The group defines a strategy. Workshop: Seek the definition of risk in documents; identify threats and vulnerabilities in the school, home and community; make observation on each place.

- **Apply learning:** The information generated through research and other exploratory activities should be channeled and complemented by the teaching, turning it into knowledge for students through discussion, explanation, comparison, analysis, synthesis, etc.

3. *Manual for Teachers of Basic Education (Preschool, Elementary and Middle School). Disaster Risk Prevention. ECHO, UNICEF, PLAN, USAID/OFDA/LAC, JICA, CECC/SICA, CEPREDENAC, SENACYT, MEDUCA. SINAPROC. 2009.*



Example: Students submit their reports, conclusions and impressions on the proposed subject. Next, the teacher expands the information that is relevant for the group, and also conducts a review of each step and its components. Students, at individual or group level, then select a problem related to their circumstances and surroundings, based on which they will carry out work in which they present solutions and illustrate them with available resources, showing that they are capable of demonstrating what they have learned through their research.

- **Assess learning:** Through individual or group exercises, it is suggested that the teacher provide students with the opportunity to assess the level of learning achieved on the subject addressed and establish the corrective actions to achieve an acceptable level of performance.

Example: the teacher shows students various landscapes of their community, in which they mark threats with the letter T and vulnerable areas with the letter V and explain them.

1.2. EXAMPLES OF LEARNING ACTIVITIES:⁴

Subject: Risk maps

Level: Preschool (ages 4 to 5) and Primary School (1st and 2nd grades)

Objective: To construct a risk map of the community and school as a whole.

Information: The risk map, which aids in understanding the community and the school, encourages awareness in order to undertake prevention and mitigation efforts and thus eliminate or reduce the effects of a possible adverse event.

4. *Disaster Risk Prevention. ECHO, UNICEF, PLAN, USAID/OFDA/LAC, JICA, CECC/SICA, CEPREDENAC, SENACYT, MEDUCA. SINA-PROC. 2009.*

Suggested materials: paper, crayons, putty, scissors, cardboard, sand, dirt, water, construction paper, natural elements, watercolors, sawdust.

Suggested procedures: Conduct a walk through the community to identify risky areas and safe areas, and visit support institutions. Discuss observations, highlight the riskier and safer areas visited. Prepare a map (a drawing or small model) with the above-mentioned materials and the teacher's support. Students can place elements, draw, trace or link points on the risk map, indicating risky places, safe places and the available support institutions.

Evaluation: Present a dramatization on risky and safe places in the community and simulate how they would act in case of an emergency. Contribute solutions and responses according to the risks stated.
Preschool areas: Socio-affective development, psychomotor development, language and cognition.
First and Second Grade Subjects: Language, social sciences, natural sciences, art education, physical education, values and morals.

Subject: Risk Management.

Level: Primary (7th, 8th and 9th grades)

Objective: To analyze risk factors in order to eliminate or decrease (prevent and mitigate) the occurrence of a possible disaster.

Information: Conceptual framework of the subject (disaster, emergency, hazard, vulnerability, risk, resilience, etc.), historical background in the locality and the country.

Suggested materials: Newspaper clippings, shapes, photos, experiences, videos, interviews, brochures, other sources of information.



E.B. Valentín Valiente. Cariaco earthquake, 1997. Venezuela.

Suggested procedures: Analyze concepts related to risk management, based on a critical and reflective attitude; walk through the school and detect possible risk factors; analyze and discuss in groups videos, newspaper clippings and other information; organize visits to institutions that deal with the environment, hydrometeorology, civil protection, fire stations, etc.; write reports on the subject; prepare murals, posters and other graphic resources on the subject; invite parents to participate in activities such as talks, forums and presentations.

Evaluation: Evaluate each activity in a diagnostic, formative and summarized manner, observing changes in student conduct and involving the school, family and community.

7th, 8th and 9th grade subjects: Language, social sciences, natural sciences, art education, physical education, history, geography and civics.



2. SAFE SCHOOL INFRASTRUCTURE.

School buildings constitute the countries' largest network of public buildings. They are also spread throughout each country's geography, which makes them vulnerable to a full array of possible threats.

If we add to this external risk the numerous internal factors present in educational infrastructure (such as insufficient resources for the sector, selection of inadequate sites for constructing schools, failures or omissions in studies and projects, poor construction practices, inadequate construction materials, lack of maintenance, end of buildings' useful life, vandalism, etc.), we may conclude that a high percentage of the student population spends most of the day in spaces that do not ensure safety in the event of a disaster or the right to continue their education in emergency or disaster situations.

Thus, the incorporation of disaster risk reduction criteria in national and regional policies on school buildings is an ethical mandate and not a recommendation that may or may not be adopted. This subject should therefore be a priority for the education sector of all countries of the region. Vulnerability reduction considerations and criteria should be incorporated in all processes that deal with the subject of educational infrastructure.⁵ The aspects to be included are:

5. In Guatemala, a tool has been designed to measure the safety of schools in structural, non-structural and functional terms. For further details, see Annex entitled, "Index of School Safety".



- Preparation and updating of national regulations and specifications for school buildings and facilities;
- Planning that encompasses aspects such as needs analysis, risk analysis, sources of financing, etc.
- Design of projects for the construction, expansion, repair and retrofitting of new or existing buildings;
- Work execution, including the application of new technologies, construction systems, inspection and supervision, etc.
- Preventive and corrective maintenance.

Other important aspects should also be addressed, such as:

- Inter-institutional coordination among the numerous public and private agencies that sometimes serve the school building, establishing a governing agency in charge of overseeing compliance with regulations;
- Community participation within educational infrastructure management through information and training strategies on technical aspects of service to the school building in general and on disaster risk management in particular;
- The establishment of protocols and procedures for timely damage assessments and needs analyses of school infrastructure following the occurrence of a disaster, by agencies responsible for caring for the school building;
- Preparation of reconstruction plans that respond efficiently to the needs of replacing, expanding, rehabilitating and equipping of the educational facility affected by a disaster, without replicating prior vulnerability, whether due to its location, design or construction features.

It is important to highlight the fact that the Global Facility for Disaster Reduction and Recovery (GFDRR) has published the Guidance Notes on Safer School Construction, which include four components:

- a. General information and discussion points, which highlight the need to build safe schools and include best practices, principles, strategies and challenges;
- b. Suggested steps for the construction of safe schools, which highlight key points for the planning and reinforcement of school buildings, as well as the instruments to guide their use;
- c. Compilation of basic design principles to address different hazards, which highlight the requirements to be taken into consideration in order to improve schools' level of protection against earthquakes, heavy rains, floods, landslides and fires; and
- d. Bibliography and case studies for detailed, specific information that may be of interest to the user of the Guidance Notes.

Because the infrastructure component is very important and defines a school's level of safety, it is suggested that the GFDRR's Guidance Notes on Safer School Construction be taken into consideration, because the efforts made in their preparation complements what is summarized in the present document and applies to new and existing buildings.



Structural reinforcement project. Photos: FEDE-ME

2.1. GUIDELINES FOR TEACHERS⁶:

The safety of a school building and of those inside it at the time of a damaging event depends on structural factors, including: the site where the school is located, the building, furniture, equipment and quality of maintenance provided. The following aspects are therefore essential:

- **Verify threats to the site where the school is located.**

- **Evaluate the school building:** Verify whether it has been designed and constructed taking into account the type of natural dynamics to which it will be continuously or sporadically subjected. In some cases, depending on the size, complexity and cost, it may be necessary to seek the opinion of an expert who aids in the evaluation. (If possible, the construction process should also include adequate technical advisory services). For example:

- **In a seismic zone,** the school's architectural design and structure should meet the regulations and requirements that ensure it is earthquake resistant.

6. (afe school on safe ground). ISDR, UNICEF, Central American Office of Educational and Cultural Coordination, European Commission. 2008

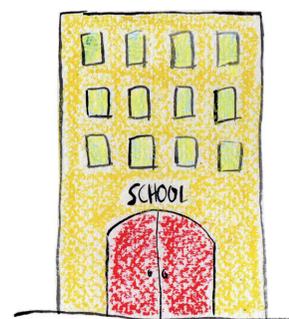
- **In a zone subject to hurricane and strong winds,** the design and construction of roofs, water tanks, posts or other elements belonging or attached to the structure should allow them to withstand the effects of this type of hazards, or should be installed in such a way that they can be removed in an easy and preventive manner if necessary.

- **In a floodprone zone near a body of water,** the school building should be far enough away from areas of flooding or elevated enough to keep the recurring rise in water levels from becoming a disaster.

- **In a zone where it rains frequently or intensely,** the building should have adequate drainage and sewer systems for the high levels of rainfall that may be expected. This factor should also be considered during the design of corridors, windows and other architectural elements.

- **In a zone near volcanoes,** the roofs, terraces, canals, drainage and similar elements of the building should be designed and built to withstand the additional load they will have to bear in such a case. They should also have features that facilitate the quick clearing or removal of the load.

- **The school should not only be able to withstand the effects of these and any other type of events without collapsing,** but the design should also include adequate evacuation routes, doors that in case of emergency can be opened without obstacles toward the evacuation route, safe meeting places free of secondary hazards such the falling of facades, posts, electrical cables, etc.



• **Verify the features and location of furniture and equipment:** In addition to the common features that all furniture, equipment and other items for use by children of different ages should have (such as the absence of sharp edges and other elements that can cause injuries or other trauma; use of nontoxic, nonflammable paint and other materials, etc.), the furniture with which a school is equipped should contribute as much as possible to reducing the vulnerability of its users if a hazard occurs.

- In a seismic zone, the design and materials with which tables and desks are made should be able to be used as protective elements in case of an earthquake (in other words, one or more children can seek protection under each of the tables or desks used in the classroom, and these should be resistant to a certain level of impact).

- Verify the location of furniture, equipment, supplies and other teaching materials, so that if a threat such as a hurricane or earthquake occurs, they do not generate additional hazards (such as falling on children or obstructing evacuation routes). Book-cases and other large furniture should be adequately attached to walls; the placement of heavy objects on the upper parts of furniture should be avoided; cabinets, glass cases and other furniture that hold glass containers, chemical products or materials that may cause any harm should have systems that keep the doors from opening and the materials or containers from escaping. These containers should be those recommended for the type of substances that they contain.

• **Ensure the timely and adequate maintenance of the school building:** Both real estate and personal property may have been correctly designed, cons-

tructed and selected, but the lack of maintenance causes the features that made them safe to deteriorate. Thus, they must receive necessary, timely maintenance.

• **Verify that the school is provided with the required emergency equipment** such as fire extinguishers, hoses, first aid kits and other items needed to provide adequate and timely assistance to people who may be injured in the event of a threat or to control an emergency.

• **Verify that the school has emergency lighting and signs:**

- **Lighting:** The building should have an emergency lighting system that is activated if electricity is cut off for any reason.

- **Signs:** School buildings must have adequate signs that easily identify evacuation routes, the safest places if an emergency or disaster occurs, the location of emergency equipment, etc. The location of these plates or signs should be the result of a technical inspection of buildings by trained personnel, not an arbitrary decision.



School safety drill. Photo: Ministry of Education, Guatemala.

3. SCHOOL SAFETY PREPARATIONS AND PLANS.

This area of development includes two types of action. On the one hand are school safety plans and their inclusion in schools' educational projects. On the other hand are preparations by ministries of education that should be conducted in a timely manner to ensure that the school-aged population has the right to education in emergency and disaster situations.

In both cases, it is important to remember that the major factor affecting disaster risk management is vulnerability. This is the internal risk factor of countries, institutions, communities and individuals that we can act upon through processes of prevention and mitigation and by building capacities that will make us increasingly resilient. However, it is impossible to do this with the external risk factor, natural hazards, since it is impossible to avoid the probability that a tropical storm may occur, or that such a storm may become a hurricane or cyclone. There is the ever-present probability that the amount of energy released daily by the tectonic plates that crack and mold our planet will generate an earthquake of destructive proportions. Therefore, prevention and mitigation are not enough: we must also prepare ourselves to cope with disasters when they affect our surroundings.

3.1. SCHOOL SAFETY PLANS:

Countless institutions at international, national, departmental and local levels provide training, teaching materials, technical assistance and general support to educational communities for the preparation, execution and evaluation of school safety plans. These include the International Federation of Red Cross and Red Crescent Societies (IFRC), UNICEF, USAID/OFDA, NGOs, civil protection and disaster response systems, firefighters, volunteer rescue groups, etc. Although each has developed its own methodologies, strategies and tools, in general terms the preparation of a school safety plan should follow the steps below:

- **Motivate the educational community (principals, teachers, students and parents):**

Subject to information from and in coordination with Ministry of Education authorities, the interest of the educational community should be promoted. The objective of this step is to provide information on the advantages and importance of conducting the process of preparing a school's emergency and disaster response plan. The subsequent success of the plan depends on this initial step since it makes it possible to raise the awareness of stakeholders and obtain their support and participation.

- **Organize the educational community:**

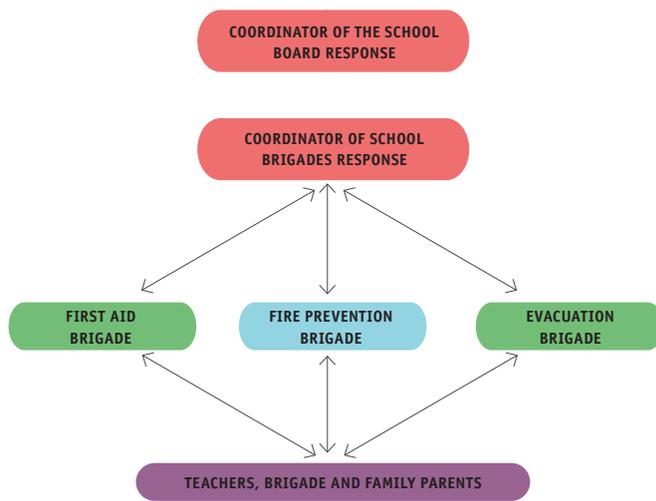
With the authorization of the Ministry of Education's municipal or departmental authority, the School Safety Committee should be organized. It should be formed by members of the school's managerial and administrative staff, teachers, students and parents. In turn, the committee will organize the different School Safety Brigades that will support it. It is



recommended that institutions with expertise in emergency and disaster response, such as the Red Cross, Civil Protection, and firefighters, be invited. Their expertise is very useful and will contribute to making the process of organizing emergency response as complete and practical as possible.

studies and maps of hazards in the area, risk maps and other information that they may have and that may be useful for this purpose.

To identify and then proceed to identify the hazards and vulnerabilities of the school and community, the Vulnerability and Capacity Assessment (VCA) of the International Federation of Red Cross and Red Crescent Societies can be used, for example. The VCA is a handbook that uses various participatory tools to understand the local population's level of exposure to (and its capacity to withstand) natural phenomena. This tool allows the community to identify and understand the risks that should be considered priorities, and to propose actions that contribute to disaster reduction (VCA 2006). This participatory diagnostic also helps the community to recognize and develop its existing capacities and resources (human, material, institutional and economic), which should be taken into account at the time of planning the response and formulating the risk map.



Source: International Federation of Red Cross and Red Crescent Societies, 2009.

• **Identify the school's hazards, vulnerabilities, capacities and resources:** After becoming familiar with the terminology used for disaster risk reduction, members of the educational community should reflect on the concepts and their possible relationship to the school and its surroundings. This is the starting point for identifying different types of threats that may affect the region where the school is located. It is recommended that this activity be conducted with the support of institutions with expertise in emergencies and disasters, such as universities, the Red Cross, Civil Protection, and firefighters, among others, which can make available to the community

Several examples of natural threats:

- Active geological faults that can generate earthquakes
- Tsunamis as a consequence of nearby or distant tidal waves
- Active volcanoes and their potential eruptions (and collateral effects)
- Hurricanes
- Strong winds
- Electrical storms
- Unstable slopes with the threat of landslides
- Floods

Several examples of manmade threats:

- Trucks with hazardous materials passing in front of the school

Es momento que identifiquemos las Amenazas que ponen en peligro al Centro Educativo y sus personas.

 1. Sismo <input checked="" type="checkbox"/> SI <input type="checkbox"/> NO	 7. Incendios Forestales <input checked="" type="checkbox"/> SI <input type="checkbox"/> NO
 2. Inundación <input type="checkbox"/> SI <input type="checkbox"/> NO	 8. Derrame de Tóxicos <input type="checkbox"/> SI <input type="checkbox"/> NO
 3. Deslizamiento <input type="checkbox"/> SI <input type="checkbox"/> NO	 9. Aguas Contaminadas <input type="checkbox"/> SI <input type="checkbox"/> NO
 4. Erupción volcánica <input type="checkbox"/> SI <input type="checkbox"/> NO	 10. Vías de Tránsito peligrosas <input type="checkbox"/> SI <input type="checkbox"/> NO
 5. Huracán <input type="checkbox"/> SI <input type="checkbox"/> NO	 11. Zonas insalubres <input type="checkbox"/> SI <input type="checkbox"/> NO
 6. Incendio <input type="checkbox"/> SI <input type="checkbox"/> NO	 12. Explosiones <input type="checkbox"/> SI <input type="checkbox"/> NO

MANOS A LA OBRA

Trabaje identificando las amenazas y vulnerabilidades de su centro educativo. (Pase al Cuaderno de Trabajo, Ejercicios 1 y 2)

Fuente: Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja, 2009.

- Dangerous traffic routes
 - Unhealthy zones
- Several factors that determine vulnerability:⁷
The positive or negative answer to these questions will determine the different vulnerabilities in the school–community nexus and the way to reduce them:
- Where is the school located in relation to identified hazards?
 - How is the school constructed?
 - Is its structure earthquake-resistant?
 - Are the roofs able to withstand strong winds, additional weight due to ash accumulation, heavy downpours, hail, etc.?
 - It is known when the school was built and who designed, calculated and constructed the building?
 - Has the building been well maintained?
 - Have modifications been made that could have affected its structural resistance? (For example: construction of an additional floor, demolition of walls and columns, etc.)
 - Do laboratories and other enclosures where chemical products or flammable materials are stored have special locks?
 - Does the school's budget include the resources needed to put the plan into operation?
 - Are there mechanisms that allow resources to be obtained outside the school budget?
 - Does the economic status of members of the school community make them particularly vulnerable to hazards?

- Does the school have active groups or organizations, such as parents' committees, ecological or environmental groups, sports clubs, musical groups, etc.?
- Do parents play an active, decision-making role in the school community?
- Among directors, teachers and students, are there leaders with positive attitudes and real influence on the school community?
- Do teachers and students possess and demonstrate a sense of ownership with regard to the school community?
- Do the directors and teachers belong to the community?
- Does the school have complete information on each student (home address and telephone number, parents' work addresses and telephone numbers, etc.)?
- Are the school community's aspirations and needs taken into account by authorities?
- Do the contents of the different subjects and the methodologies used to teach them help the students to have a greater understanding on the dynamics of their surroundings and to participate in building a more sustainable relationship with them?
- Does education include community memory in its curriculum?
- Are the teaching possibilities of the immediate surroundings used?
- Does education help the school community to construct and adopt a "culture of prevention"?
- Does the school community recognize and practice values and attitudes such as solidarity, democracy





and participation?

- Do parents assume their responsibility for the education of their children and the proper functioning of the school community?
- Is the ecological environment in which the school community operates in a proper state of conservation, or is it a source of hazards and vulnerability?
- Do the different members of the school community understand the dynamics of their natural surroundings?
- Does the equivalent of a school committee for risk management exist and operate in the institution?
- Are there enough people with the necessary training to organize drills, direct evacuations, perform first aid, move the wounded, prevent and control fires and carry out other necessary activities in an emergency situation?
- What autonomy do school facilities have in terms of water reserves, electricity supply, sanitation services and communications?
- Does the institution have equipment and supplies such as first aid, fire extinguishers and communications devices?
- Does the institution have the physical and logistical capacity to support the surrounding community in the case of an emergency or disaster?
- What capacity does the institution have to support members of the educational community whose families have been affected by a disaster?
- What capacity would the school have in order to "normalize" academic activity as soon as possible, even under temporary conditions, following a disaster?

7. For more information on this methodology go to: http://www.proventionconsortium.org/themes/default/pdfs/CRA/What-is-VCA-en_meth.pdf

8. *Safe school on safe ground.* ISDR, UNICEF, Central American Educational and Cultural Coordination Office, European Commission. 2008

HOW TO IDENTIFY RISK:⁸

Risk is the result of the concurrence of a certain threat with factors of vulnerability or weakness that affect the school community's capacity to withstand, without injury, the effects of said threat ($R = f(A, V)$). The identification of risks consists of our wondering, "what would happen if..."

For example, what would happen if there were an earthquake:

- Of what magnitude? (let's remember that magnitude indicates the energy released and is measured on the Richter Scale)
- At what depth? (let's remember that the closer the earthquake is to the surface, the greater the damage for communities near the epicenter)

We can ask the same type of questions about other threats, such as a volcanic eruption, a flood, a landslide or cave-in, a fire, a blizzard, an electrical storm, an armed attack, etc. Let's remember that the factors that make a community and its assets vulnerable to certain threats are not necessarily the same as those that make them vulnerable to others. For example, a wooden building may not be vulnerable to earthquakes but may be highly vulnerable to fires; or a building located on a part of a mountain that is not vulnerable to floods may be highly vulnerable to landslides.

It should be kept in mind that the nature of risk is changeable, and therefore this analysis needs to be updated periodically. What represents a serious risk today may be insignificant tomorrow, and vice versa.





HOW TO IDENTIFY RESOURCES:⁹

The school community will surely have many people who are able to be involved in reducing or mitigating the various vulnerability factors and the large amount of resources to make the plan available.

- Trained and motivated people
- First aid supplies
- Equipment to avoid and control fires
- Physical spaces available or adaptable to care for and classify the wounded, shelter victims, and protect the most vulnerable (children, elderly and handicapped persons)
- Means of transportation
- Telecommunications equipment (landline and cellular telephones, radiophones, amateur radio operators, Internet)
- Billboards, sound equipment and other means of local information
- School bulletin
- Video and photographic equipment
- Computers, software and persons trained to use them
- Megaphones, flashlights, various tools
- Economic resources available in times of emergency
- Water reserves
- Energy autonomy (electrical plant, gas reserve, etc.)
- Reserves of foods and beverages (school store)
- Information on: school community census, municipal emergency plan and persons responsible, meaning of notices and warnings, scientific information and instructions by authorities, resources that parents can contribute.



PREPARE THE RESPONSE PLAN:

To prepare the overall school safety, the following steps should be considered:

- Prepare a “risk map” (based on a diagnostic of hazards and vulnerabilities).
- Prepare a “map of capacities and resources”.
- Make of list of actions that allow the community to turn its vulnerabilities into capacities.
- Make a list of the resources needed to carry out the actions and analyze which of them can be done with existing local resources and which would require external financing.
- Prepare a diagram of the school.
- Prepare a strategy/action plan that includes targets, specific objectives, activities, expected results, and persons in charge of implementing the prevention, mitigation and preparation strategy. (As part of the strategy’s actions, determine how to strengthen existing capacities and resources).
- Prepare a timetable for the execution of the designed prevention, mitigation and preparation actions (Gantt charts are recommended for this purpose); plan the response and recovery strategy, including the design of the warning system (and evacuation procedures depending on the type of threat or emergency). The warning system may use, for example, bells, the marching band’s drum, whistles, or even one piece of metal that strikes another.
- Strategies in case the school is used as a shelter.
- Strategies for continuing education following the occurrence of an emergency or disaster.



9. Safe school on safe ground. ISDR, UNICEF, Central American Educational and Cultural Coordination Office, European Commission. 2008.





EVALUATE (SIMULATION AND DRILL)

Simulations and drills are exercises that are used to train personnel, evaluate the School Safety Plan and make the necessary modifications in terms of detected weaknesses or omissions, and minimize the time needed for the institution (in this case the school) to respond efficiently and effectively to the emergency. These require prior planning, design and organization in terms of the objective to be achieved.

Disaster simulations are an exercise that develops a model representing a real situation such as an earthquake, hurricane or other type of disaster, as well as associated decisions. It is a technique aimed at the active involvement of teachers and participants. It is also an approach or means of entry for training in a situation that generally represents a problem situation, and is therefore useful in the interdisciplinary development of the teaching-learning process. It is an essentially dynamic technique based on changing circumstances and demands flexibility in thinking and responses, which should be adapted to the circumstances that arise at different times. The simulation places the participant in a tense situation so that he feels the direct impact of decision making. In summary, a simulation exercise requires participants to become "actors in a play," playing roles that are a reflection of a real situation or experience, and making decisions relevant to their role. Each will have a defined role that will be assigned at the start of the exercise, in accordance with a pre-established program.

There will be a coordinator whose duties are to:

- a) coordinate actions;
- b) distribute roles;
- c) control and vary the time and rate of actions;
- d) provide information;
- e) intervene in order to produce changes in the group's actions;
- f) have consultation material or data that participants may request and that are needed for decision making;
- g) observe and analyze everything that occurs during the exercise;
- h) submit a final report.

The group will also have an observer who will record how situations are handled, the decisions made and the group's conclusions on each important aspect. The observer will aid the coordinator in conducting the exercise, in the subsequent analysis and discussion, and in the final report.

At the end of the simulation exercise, a wrap-up meeting will be held to express experiences and mistakes, as well as their consequences and ways to correct them. Next, a final report will be prepared, containing the most important aspects, which will be sent to the corresponding authority (PAHO/WHO 1983). The simulation is normally conducted at a meeting table and is extremely useful because it does not require a large amount of resources.

Drill: This is a practical exercise that is more complex and costly in terms of its planning, design and execution. It makes it possible to evaluate the capacity developed to conduct response efforts such as evacuating personnel, administering first aid, extinguishing outbreaks of fire, managing shelters, and providing education in emergency or disaster



situations, among many other possibilities.

There are three types of drills: scheduled, surprise and workplace. In scheduled drills, all participants know when these will be conducted, the idea and procedures, and should practice beforehand. In contrast, participants are not familiar with when surprise drills will be conducted. To carry out this type of drill, all participants should fully understand their missions and duties beforehand. Drills should not be conducted without the conduction of conducted prior, scheduled drills.

Drills should be well organized and coordinated so that each participant can play his role and understand the activities he must carry out. Each participant should be able to answer the following questions: What should I do? How should I do it? What should I do it with? When should I do it?

There should be several training sessions for scheduled drills, such as:

- 1) Explanation of what each participant has to do;
- 2) Separate, partial practices by each section or group of participants (including simulators);
- 3) General, integrated practice by the entire school, ensuring that all personnel envisaged in the plans participate, or at least that key leaders participate, with representatives from all sections.

People who play the roles of victims in a drill should also be well trained. It is best if they are from the community that will be assisted. If the type of disaster to which the community is exposed is known beforehand, it is first necessary to ensure that all personnel are well informed, and second, activities must be well focused on the damages that such a disaster may cause. This should be done based on the

initial diagnostic.

In planning the drill, it should be kept in mind that its success depends not only on the organizers but also on participants' prior understanding, dedication, discipline and preparation.

Besides pretending based on the type of effect imagined, simulators should have the appropriate makeup. This preparation should also coincide with the type of injury the simulator supposedly has, so that the team in charge of providing first aid and classification can correctly identify the injury.

It is important that each participant in the drill receive a brochure with instructions on:

- a) general information, including the possibility of a disaster;
- b) organization and conduction of the drill;
- c) activities to be conducted;
- d) timetable;
- e) specific procedures for each section or work group (evaluation group, first aid and evacuation, emergency services, etc.)

It should be kept in mind that educational institutions by themselves cannot cope with disasters. Thus, in the case of drills, cooperation or coordination with other agencies or institutions (Civil Protection, Red Cross, firefighters, etc.) should be envisaged.

Other documents should be prepared as annexes to the plan, such as:

- a) diagrams of the school and of the disaster zone;
- b) means of communication, indicating itineraries to be used in accordance with priorities;





c) population in terms of age groups.

The evaluation of the drill makes it possible to critically assess its development and outcomes, and should be aimed essentially at analyzing whether:

- a) the organizational measures considered in the plan were met in a timely and appropriate manner;
- b) the response in the disaster zone was adequate and efficient;
- c) the evacuation was conducted in accordance with the plan.

If photographic, video or similar equipment is available, it should be used especially when mistakes are made, in order to show the errors to participants. Once the exercise has concluded, participants will meet to draft a summary, placing emphasis on mistakes made (PAHO/WHO 1983).

- **Correct and provide feedback:** After having conducted a simulation or drill on the process of response preparedness, or having tested the plan once a real emergency or disaster occurs, we must identify weaknesses and gaps in the School Safety Plan and take corrective measures to improve it. This process should be participatory and give rise to new simulation and drill exercises in order to test the corrective measures.

- **Systemize:** This is the process of recording activities and their outcomes and analysis, and of explaining the plan's development, with the aim of contributing to improve the plan's proposal and management.

3.2. PREPARATIONS BY MINISTRIES OF EDUCATION:

The education sector in Latin America has been strongly affected by disasters in recent decades. The weighting of significant losses and damages in schools, due to minor or major events, is normally conducted under the terms used by other sectors: for example, loss of human lives, injuries, partial or total losses and damages to infrastructure, furniture, equipment and teaching materials. However, it would be worthwhile to use a different approach that is more in line with the objectives of education itself.

Thus, other variables intrinsic to the sector could be included, such as indicators that gauge the number of class hours lost as a consequence of the disaster; the disaster's impact on the quality of education, the number of children and adolescents whose right to education was affected, as well as their right to receive the benefits of the numerous social programs provided through the school because it is being used as a shelter. Many educational communities are affected collaterally since, although their schools have not necessarily been damaged by the disasters, they are being occupied by the affected families.

Moreover, in most cases ministries of education lack pre-established strategies to ensure that students can quickly return to classes in alternative locations, and to ensure that school buildings used as shelters are returned quickly and in good condition so that they can be used for their normal purposes.

In view of this, the incorporation of disaster risk reduction criteria in the education sector's national and regional policies should include pre-disaster preparation in two areas:

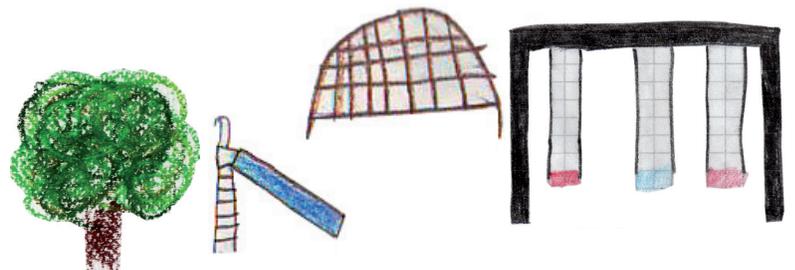
1. Criteria for self-protection during the occurrence of a disaster, and evacuation of and care for victims



following the event; and

2. Criteria that ensure the right to education in emergency and disaster situations, through preparedness by the education sector and the school itself. With the aim of restoring education services as soon as possible after the event, the following courses of action are identified:

- Incorporate school emergency in the schools' educational designs;
- Train managerial/administrative staff, teachers, students and other members of school communities in school safety and the various related issues;
- Schedule simulations and drills in the official school calendar as systematic activities to evaluate school emergency preparations and plans;
- Promote strategies by the education sector to immediately restore education services in the event of an emergency or disaster, taking into consideration: alternate curriculum strategies, identification and mobilization of substitute teachers, teaching materials and resources in emergencies, and adjustment of alternative school facilities;
- Promote the use and implementation of Minimum Standards for Education in Emergencies (INEE).



4 Disaster Management in the Central American School Environment

The Central American Region extends from Guatemala and its border with Mexico to Panama and its border with Colombia. It is composed of seven countries: Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. As a region, it has been repeatedly affected by large-scale natural disasters. These disasters are caused in part by the geological and hydrometeorological characteristics inherent to the countries' geographic location. They are expressed essentially by constant seismic and volcanic activity and the seasonal presence of tropical cyclones and hurricanes, especially in the Caribbean Basin. These, along with other adverse factors such as exposure to the effects of El Niño and La Niña, are exacerbated by the strong political, economic, social and environmental vulnerability that persists in the countries of the isthmus as a result of a cumulative risk process generated by the ongoing implementation of inadequate development policies.

In light of this situation, in 1993 the Central American Countries signed the "Regional Plan for the Reduction of Natural Disasters in Central America ("Plan Regional para la Reducción de los Desastres Naturales en América Central", PRRD), which contains, as a sectoral response, the "Central American Plan for Education on Risks and Disasters" ("Plan Centroamericano de Educación sobre Riesgos y Desastres", PCERD).

In order to provide information on efforts aimed at contributing to reduce disaster risk from the Central American educational standpoint, this section presents the "Strategic Educational Framework for Disaster Risk Reduction in Central America", signed by the region's Ministers of Education under the framework of PCERD and PRRD, and a summary of the document "Systemization of Educational Best Practices for Risk Management in Central America", prepared under the framework of the DIPECHO V Action Plan for Central America.



Photo: MINEDUC.



1.

STRATEGIC EDUCATIONAL FRAMEWORK FOR DISASTER RISK REDUCTION IN CENTRAL AMERICA:

The broad path taken in the development and application of strategies for disaster risk reduction in the educational sphere of institutions such as the Central American Coordinating Office for Education and Culture (Coordinación de Educación y Cultura de Central America, CECC), the Coordination Center for Natural Disaster Prevention in Central America (Centro de Coordinación para la Prevención de los Desastres Naturales en América Central, CEPREDENAC), as well as institutions such as the Central American Integration System (Sistema de Integración Centroamericano, SICA), together with the Ministries of Education and the national systems for risk reduction and emergency and disaster response of the region's countries, have generated a mutually agreed regional view of the subject. Under the framework of the DIPECHO V project, "Strengthening of Local Risk Management in the Central American Education Sector", this facilitated the preparation of the "Strategic Educational Framework for Disaster Risk Reduction in Central America", signed in 2008 by education sector ministers and authorities of the Central American countries and the Dominican Republic. Stemming from this framework, the parties also agreed to urge agencies of the Ministries of Education of CECC member countries to use it in the definition of policies and actions related to the subject.

OVERALL OBJECTIVE:

To help the countries strengthen public and private policies, programs and projects aimed at forming a culture of disaster risk prevention and reduction and of resilience in the education sector, as an essential

and integral part of the sustainable, secure development process of the Central American region.

CURRICULUM AND TEACHER TRAINING:

Specific objectives:

- To promote the inclusion of the subject of disaster reduction in the curriculums of the various levels and modalities of formal education in the region's countries;
- To promote the production and reproduction of support materials for the teaching and learning processes, associated with disaster risk reduction;
- To evaluate the process and outcomes of the development of the proposed curriculum model;
- To design ongoing training strategies that facilitate the approach to teaching this subject.

Strategic areas:

- Standardization of minimum content required by curriculum teams;
- Standardization of the knowledge, abilities and skills that should be included in students' education;
- Generation of ongoing training strategies for curriculum teams with regard to the subject of disaster risk reduction;
- Incorporation of the subject of disaster risk reduction in all levels and types of curriculums;
- Standardization of minimum content to be incorporated in teaching and educational materials;
- Production of support materials for the teaching and learning processes associated with disaster risk management;
- Production of support materials for the teaching and learning processes in initial teacher training;
- Production of support materials for the teaching and learning processes associated with ongoing tea-

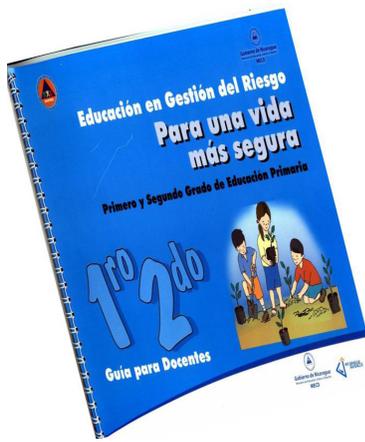


Image: Ministry of Education, Nicaragua.



Problems related to locations in high-risk areas. Photo: MINEDUC.

cher training;

- Production of guidelines for self-assessment of curriculum development processes in schools;
- Evaluation of the impact of introducing the subject of disaster risk reduction in the curriculum;
- Standardization of minimum knowledge that should be incorporated in initial and ongoing teacher training;
- Incorporation of the subject of disaster risk reduction in the curriculum of initial teacher training centers.
- Ongoing incorporation of the subject of disaster risk reduction in teacher training activities.

SAFETY IN SCHOOLS' PHYSICAL INFRASTRUCTURE

Specific objectives:

- To promote the development and application of policies aimed at strengthening the management of schools' physical infrastructure in order to reduce their vulnerability;
- To strengthen processes intrinsic to the management of schools' physical infrastructure;
- To strengthen inter-institutional coordination;
- To promote community participation in planning, design, work execution and school building maintenance;
- To develop processes of dissemination and training on technical aspects of school infrastructure management.

Strategic areas:

- Integration of the subject in legal aspects that govern the management of schools' physical infrastructure;
- Incorporation of disaster risk reduction in the institutional framework responsible for schools' physical infrastructure;
- Strengthening and development of strategies for the incorporation of disaster risk reduction in the planning of schools' physical infrastructure;
- Strengthening and development of strategies for the incorporation of disaster risk management in the design of schools' physical infrastructure;
- Strengthening and development of strategies for the incorporation of disaster risk reduction in the construction of schools' physical infrastructure;
- Strengthening and development of strategies for the incorporation of disaster risk reduction in the maintenance of schools' physical infrastructure;
- Promoting and facilitating coordination among public agencies at local, national and regional levels, private enterprise and international agencies;
- Promoting and facilitating coordination between ministries of education and institutions that participate in the processes of managing schools' physical infrastructure;
- Establishing the knowledge, abilities and skills that educational communities should have with regard to the subject of disaster risk reduction in schools' physical infrastructure;
- Production of teaching materials, methodological



Construction system for floodprone areas. CENI-FE–Ministry of Education, Costa Rica.

guidelines and other printed and multimedia resources to support training processes for educational communities;

- Training of educational communities to participate effectively in disaster risk reduction in schools' physical infrastructure;
- Training of managerial, technical and administrative staff in charge of schools' physical infrastructure on disaster risk criteria.

SCHOOL PROTECTION PREPARATIONS AND PLANS

Specific objectives:

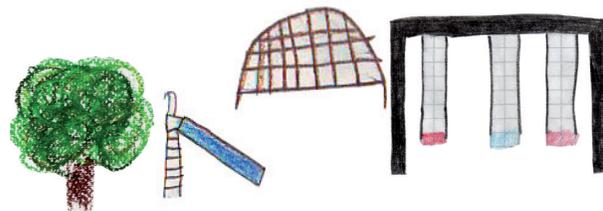
- To integrate school protection plans in schools' institutional plans;
- To be sure that the education sector's preparations for emergencies and disasters ensure the continuity of the teaching-learning process;
- To promote the conduction of simulations and drill in schools.

Strategic areas:

- Promotion of strategies for the incorporation of school protection plans in schools' institutional plans;
- Development of tools for self-assessment of the impact on school protection plans. Training and promotion of educational communities' participation in school protection plans, incorporating them in schools' institutional plans;
- Definition of criteria and measures dealing with

needs for adjusting the curriculum, training of teachers to cope with possible psychological trauma in children and adolescents, need for the use of complementary learning packages (HIV/AIDS, gender issues, control of possible epidemics), use of alternative locations for learning, and support materials that generally ensure not only the continuity of education but also quality education in emergencies and disasters;

- Institutionalization of the use and implementation of Minimum Standards for Education in Emergencies (INEE Standards) to ensure the right to education during emergencies and disasters;
- Standardization of the processes of planning, organization, development and evaluation of simulations and drills in schools;
- Training of facilitators for the planning, organization, development and evaluation of simulations and drills.



File and document “Systemization of Educational Best Practices for Risk Management in Central America”. UNISDR(EIRD), UNICEF, CECC, CEPREDENAC, ECHO.



2. SYSTEMIZATION OF EDUCATIONAL BEST PRACTICES FOR RISK MANAGEMENT IN CENTRAL AMERICA.

The Systemization of Educational Best Practices for Risk Management in Central America is contained in the project “Strengthening of local risk management in the Central American education sector,” under the DIPECHO V Action Plan. Its content is the outcome of the identification and compilation of significant experiences promoted and executed by various stakeholders belonging to or associated with the education sector and to the emergency preparedness and response agencies of the region’s countries.¹⁰

Based on the contents of this tool, which was conceived for the purpose of sharing knowledge and skills, the progress achieved by the region’s countries on disaster risk reduction is presented below. The progress achieved by the region’s countries with which this document deals (Costa Rica, Guatemala, Honduras, El Salvador, Nicaragua and Panama) is classified according to the three areas of development for risk management by the education sector, which are highlighted throughout this publication (inclusion in curriculum, educational infrastructure and school emergency plans), focusing, as the case may be, on sectoral policies, processes, instruments, methodologies and materials developed. (Note that the information on the various countries is highly variable and thus not all sections contain complete information).

10. *Systemization of Educational Best Practices for Risk Management in Central America*. UN/ISDR, UNICEF, CECC, CEPREDENAC, ECHO. Introduction.

The experiences and materials presented below have been developed strictly on the basis of the contents of the document “Systemization of Educational Best Practices for Risk Management in Central America”, which is available as a digital file on the website of the United Nations Children’s Fund (UNICEF): <http://www.educacionenemergencias.org/>

SECTORAL POLICIES

COSTA RICA.

- The policy of the Ministry of Education is aimed at disaster risk reduction, under the sectoral plan entitled, “National Education Plan for Risk and Disaster Reduction.” This plan is conducted through promotion and execution coordinated with the country’s departmental offices and with schools. The plan has the following focus areas: 1. Curriculum Development, aimed at the issuance of guidelines for incorporating this issue in primary, secondary and university syllabuses; 2. Promotion and Sustainability for the improvement of school safety; 3. Improvement of Educational Infrastructure; and 4. Skills Development and Training, aimed at the training of school safety teams.

GUATEMALA.

- Formation of the National Education Roundtable for disaster risk management in 2006, with the support of UNICEF and UNESCO;
- Decentralization of the Ministry of Education’s disaster risk management by assigning greater responsibilities to the Offices of Community Services and to the Educational Development Units in the country’s 22 departments;
- Ministerial Agreement (being processed) to institutionalize this issue;
- Official teaching tools for education on disaster



risk reduction applied to the national context;

- Inclusion of the subject in the curriculum at all levels.

HONDURAS.

- Preparation of the Draft Environmental Education Law (Environmental and Health Education Program);
- Strengthening of the Departmental and District Bureaus of Education;
- Formation of an Emergency Committee in the Secretariat of Education;
- Appointment of Environmental Education Coordinators at departmental and municipal level.

EL SALVADOR.

- Under the Educational Reform framework, El Salvador presented Plan 2021, whose overall objective is “to educate in order to form the county we want”. This plan was conducted through national and international consultation by different sectors: educational community, political parties, NGOs, private enterprise, adolescent students in jails, etc.);
- Strategic area 2: Effectiveness of primary and middle-school education. Its priority is to avoid situations of risk and decrease vulnerability within schools, with the participation of members of the educational community;
- A National Committee, composed of well-known Salvadoran experts, was formed for the purpose of monitoring Plan 2021. The National Commission will be required to submit annual reports.

INCLUSION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM.

Both prior to and in parallel with the initiatives and agreements that have enabled the enactment of strategic plans and frameworks for disaster risk reduction in the region, numerous national initiatives were conducted. The following is a summary of the different approaches taken by Ministries of Education with regard to curriculum, highlighting the process, instruments and methodologies developed.

COSTA RICA - INCLUSION IN CURRICULUM.

Process

The initial contributions dealt with transversality, inclusion in curriculum and definition of key thematic areas. Currently, this subject is part of the 2004–2008 National Environmental Education Strategy. The Ministry of Education has promoted the adoption, by executive decree, of the National Education Week for Risk and Disaster Prevention, to be held the second week of October each year. This national week’s objective is to promote educational efforts to build a culture of risk and disaster prevention and calls for the conduction of the following activities:

- Preparation of a regional program of activities to be conducted in all primary and secondary schools by regional authorities;
- Conduction of activities related to risk and disaster prevention in all primary and secondary schools;
- Giving an award to schools whose preparation and execution of plans are exemplary.

Instruments and methodologies

- Campaigns for signage and information in schools, in case of evacuation;
- Campaigns to raise the awareness of students and





teachers on the subject of preventing and reducing risks and disasters;

- Contests for drawings, essays, songs and poems about education to prevent risks and disasters;
- Mapping of risks and vulnerable areas in the school and in regional bureaus;
- Institutional and community signage campaigns;
- Formulation of risk reduction plans;
- Placement of murals with recommendations on risk and disaster prevention;
- Preparation of evacuation plans;
- Activity guidelines: Information on tsunami threat. The brochure is aimed at the 2nd cycle of basic education.

GUATEMALA - INCLUSION IN CURRICULUM.

Process

- Social demands;
- Signing of peace agreements;
- Design of educational reform;
- Preparation of the overall framework for changing the curriculum;
- Preparation of the National Basic Curriculum and guidelines for curriculum development;
- Preparation of educational standards;
- Measurement and evaluation of subjects in curriculum;
- Teacher training and skills updating on the National Basic Curriculum;
- Process of validating the National Basic Curriculum. It is cross-cutting and contains information on disaster risk reduction.

Instruments and methodologies

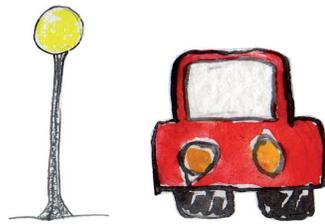
- Linkage of the National Basic Curriculum with the culture of disaster prevention;
- Contextualization of the subject of disaster risk prevention;

- The subject presented in the National Basic Curriculum was internalized and experienced;
- Organization of school committees for risk reduction;
- Perception of risk through the conduction of drills;
- Provision of teaching materials in participating schools (manuals and guidelines);
- Response plans prepared in each school;
- Signage in schools;
- Organizational manual of school committees for disaster reduction;
- Teacher guidelines for psycho-social support to children and adolescents in disaster situations;
- Teacher guidelines for flipchart use: handling natural or provoked disasters (supervisions only);
- Flipchart: handling natural or provoked disasters (supervisions only);
- Departmental reports.

HONDURAS - INCLUSION IN CURRICULUM.

Instruments and methodologies

- **Brochure:** "Lirio presenta: unidos salvamos al río" ("Lirio presents: let's save the river together"), Municipality of San José, coloring book showing the importance of protecting the river from pollution and of reforesting riverbanks. It teaches about children's responsibility for caring for nature and therefore reducing risks;
- **Brochure:** "Riesgo por desastre en nuestra comunidad Josefina" (Risk of disaster in our San José community"), Municipality of San José, aimed at children under age 10;
- **Manual:** "Educando a las niñas y los niños en la cultura de la prevención" ("Educating children about the culture of prevention"). Honduran Secretariat of Education and Save The Children. The manual has five sections. The first is an introduction that asks ques-



tions and proposes tasks dealing with concepts of disasters (including capacities). The second refers to concepts about the “disaster cycle”. The third refers to hazards and places emphasis on fires. At the end, a brief reference is added on the vulnerability and capacities of schools to cope with emergencies. The fourth refers to the school plan. The fifth deals with prevention measures.

- Methodological guidelines for risk management. Secretariat of Education and USAID/OFDA. The guidelines develop subjects in the Honduran education curriculum dealing with natural and social sciences, aimed at the first three cycles and corresponding grades. They include complementary information for each area. The aim is to guide teachers in incorporating aspects of risk management in the development of subjects in the curriculum.

NICARAGUA - INCLUSION IN CURRICULUM.

Process

An analysis of the existing bibliography on risk management was used and later contrasted with study programs through a technical committee and roundtables with civil society. Next, a process was conducted to prepare a design for each of the materials, according to the different levels of learning, until their final preparation.

Proposal for the “Incorporation of Risk Management” in the Curriculum:

Preschool:

- Levels II and III: Conducted in a gradual, ongoing and articulated manner, with emphasis on the key subject: I discover and care for my environment.

Primary:

- 1st and 2nd Grades: Language
- 3rd and 4th Grades: Natural Sciences

- 5th and 6th Grades: Environment and Natural Resources

Secondary:

- 7th to 10th Grades: Civic, Ethic and Social Education; Geography

Teacher training:

- New subject entitled, “Teaching Method for Risk Management”

Adult education:

- Levels II and III. At both levels, in thematic areas and learning units.

Instruments and methodologies

- Preparation and printing of 9 Methodological Guidebooks for teachers and 9 Activity Notebooks for students;
- Set of 16 full-color prints for preschool.

EL SALVADOR - INCLUSION IN CURRICULUM.

Process

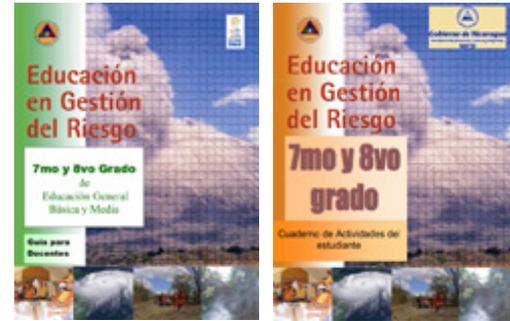
- The teaching diagnostic was conducted;
- Project and subject content, teaching charts and class scripts were established according to diagnostic results; teaching materials and the technical delivery of the methodology and instruments to be used were prepared;
- Implementation of curriculum: academic strengthening, professional development for teachers.

Instruments and methodologies

- Use of records, guidelines and checklists for school students, and their applicability;
- Correlation of objectives, core subjects, taking into account methodologies for accelerated and alternative classes.

Materials





- Development of content for students, guidelines for new and experienced teachers and for parents.

PANAMÁ - INCLUSION IN CURRICULUM.

Process

Use of methodology for the process of creating and strengthening capacities, for the phases of knowledge transfer and use of tools.

Instruments and methodologies developed

- Manual of the School Safety Course (CUSE), brochure, videos, CD and banner;
- Experiences by the presenter;
- Risk Management Manual;
- Ongoing dynamic workshops.

SUPPORT MATERIALS: INCLUSION IN CURRICULUM

“Risk Management Education: Activity Notebook for Students and Guidelines for Teachers”. SINA-PRED and MECD. Nicaragua.

Both the Guidelines for Teachers and the Activity Notebook for Students are available for all grades of primary and middle school general education. The Guidelines for Teachers offer information and methodological strategies to easily conduct the process of teaching and learning about risk management, from the viewpoint of the safety and sustainable development of communities. The Activity Notebook offers primary and middle school

students information and activities adapted to each level and grade.

“Aprendamos a Prevenir los Desastres” (“Let’s Learn How to Prevent Disasters”). EIRD, UNICEF. Costa Rica.

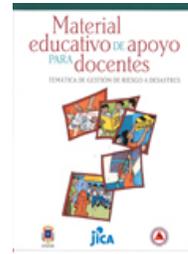
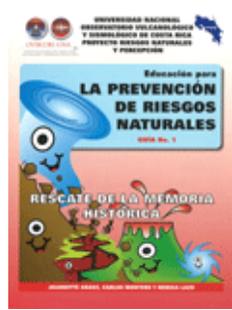
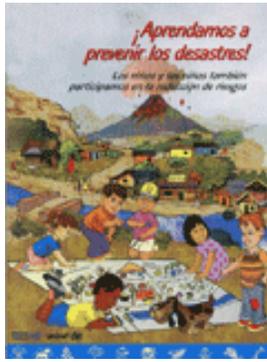
Aimed at children ages 8 to 12, it offers fun learning about disasters while encouraging them to participate in their community to reduce the impact of these events.

“Hacia una cultura de prevención de desastres: Guía para docentes” (“Toward a culture of disaster prevention: Guidelines for teachers”). Panamerican Health Organization; UNESCO; Radio Netherlands Training Center, (RNTC). Costa Rica.

These guidelines offer teachers a series of aspects to motivate students and encourage the creation, strengthening and growth of a culture of disaster prevention.

“Cuaderno de actividades para Estudiantes en Formación Docente” (Activity Notebook for Teachers in Training”). SINAPRED and MECD. Nicaragua.

This activity notebook is designed for the last year of teacher training and contains all activities needed to collectively build development strategies in a unified, planned manner. In this notebook, students will find information and activities to promote a cul-



ture of disaster prevention, mitigation and response inside and outside the classroom. This will help them to realize that disasters can be avoided, or can be prevented with education and effort, and to prepare themselves to cope with any danger that threatens their safety or that of their community or surroundings.

“La Prevención de Riesgos Naturales. Guías 1 y 2, y Taller de Riesgos Naturales y Percepción” (“Natural Risk Prevention. Handbooks 1 and 2, and Workshop on Natural Risks and Perception”). Costa Rican Institute for Volcanic and Seismological Research and Observation (Instituto de Investigación Observatorio Vulcanológico y Sismográfico de Costa Rica, OVSICORI-UNA).

Handbook 1 encourages children to collect information from people in their community who have experienced a natural disaster. It is a means of transmitting experience and knowledge about risk prevention. Handbook 2 complements the “Guidelines for the preparation of risk perception maps” in cycles I and II of basic education, and is a means of transmitting experience, information, knowledge and a culture of conducting family risk prevention plans. Through the use of a puzzle called “Costa Rica and Regional Tectonics”, the workshop offers an introduction to the study of tectonic plates as a means to understand the country’s large-scale seismic and volcanic activity and its topography.

“Información sobre la Amenaza de Tsunamis” (“Information on the Threat of Tsunamis”). Activity Guide and Teaching Guide. National Commission for Risk Prevention and Emergency Response, University of Costa Rica, Municipality of San José, Ministry of Public Education, JICA. Costa Rica.

The aim of the activity guide is to promote basic information for students and teachers on the threat of tsunamis. The purpose of the teaching guide is to deepen understanding of the origin, definition and phases of a tsunami, in order to provide educators with simple, useful information that can be transmitted through classroom teaching techniques.

“Material Educativo de Apoyo para Docentes” (“Educational Support Materials for Teachers”). National Commission for Risk Prevention and Emergency Response, University of Costa Rica, Municipality of San José, Ministry of Public Education, JICA. Costa Rica.

Under the framework of the project “Community Management of Disaster Risk in Barrio Corazón de Jesús and Los Aserrines, Cantón Central of San José”, teachers who assist the children in these localities were provided with a theoretical, conceptual and methodological tool on the subject of disaster risk management.

SAFETY IN SCHOOLS' PHYSICAL INFRASTRUCTURE.

The regional "Central America School Retrofitting Program" ("Programa de Readecuación de Escuelas de Central America", PRECA) was promoted by the Organization of American States (OAS) through its Department of Sustainable Development. The Risk Management Program is included in EDUPLANhemisférico's area of physical infrastructure; its objective is to create a sustainable process that contributes to reducing schools' vulnerability to the danger of class interruption resulting from extreme natural events of hydrometeorological, wind, seismic and volcanic origin. The program seeks to strengthen national and local capacities for modifying vulnerable primary and secondary schools, optimizing the use of local resources, construction materials, labor and financial resources, in harmony with the environment and protecting development processes. Likewise, the program seeks to strengthen the education sector's risk management capacity. This includes the identification of vulnerabilities and the evaluation of risks, in a comprehensive manner, and financial management in order to optimize international cooperation, the availability of services and products in national and local markets, and the use of national budgets.

The program's aim is to prepare and conduct actions to reduce the effects of natural disasters on the education sector, and to identify infrastructure elements whose potential damages, in the case of a natural event, must be anticipated by means of preparation and response measures. PRECA will make it possible to adjust decision making with respect to educational infrastructure, based on greater understanding of the vulnerability to and possible consequences of disasters.¹²



PRECA's activities support:

- Policies to reduce vulnerabilities;
- Planning process for the use of information on natural hazards;
- Projects to mitigate damages.

The program's implementation involves:

- Ministries of Education;
- National agencies for the execution of educational infrastructure;
- Regional agencies;
- International technical cooperation and financial agencies.

The OAS/DSD supports this program through technical assistance, the organization of training workshops and the preparation of technical documents. Teaching materials include the definition of national programs, the preparation of strategies, the preparation of evaluation-based technical documents, and the conduction of efforts in the field.¹³

The complete text of the document "Central America School Retrofitting Program" (PRECA), 2008, is available in .pdf format on the website of the Organization of American States (OAS):
<http://www.oas.org/>

12. *Natural Disaster Risk Management in the Education Sector in the Central American Isthmus.* Pablo González y Rosa Trejo, Organization of American States, Sustainable Development Department, Risk Management Program. August 2008.

13. *Natural Disaster Risk Management in the Education Sector in the Central American Isthmus.* Pablo González y Rosa Trejo, Organization of American States, Sustainable Development Department, Risk Management Program. August 2008.



COSTA RICA - INFRASTRUCTURE SAFETY.

Process

The National Education Plan for Risk and Disaster Reduction (Plan Nacional de Educación para la Reducción del Riesgo y los Desastres, PLANERRYD) is being conducted through a General Coordination Team composed of different agencies of the Ministry of Public Education. These agencies include the National Center for Schools' Physical Infrastructure (Centro Nacional de Infraestructura Física Educativa, CENIFE), in conjunction with EDUPLANhemisférico and the Regional Strategic Framework. One of the plan's three areas of focus is school infrastructure. Its objective is to improve safety conditions in school facilities through the implementation of new nationwide programs and projects dealing with the regulations, planning, design, construction and maintenance of the school facility and the reduction of its vulnerability to disasters, and also to ensure the sustainable use of physical facilities, furniture and equipment.

Instruments and methodologies

- Technically propose the improvements and actions needed to ensure the safety and sustainability of each school's facilities;
- Evaluate schools affected by natural disasters;
- Recommend construction plans and make proposals for improvements and new works in damaged school buildings;
- Provide the necessary resources and advisory services to conduct the works;
- Create a nationwide Digital Information System on Schools' Physical Infrastructure (Sistema de Información Digital sobre la Infraestructura Física Educativa, SIFE), with two basic components for decision making: Diagnostic Inventory and School Mapping. SIFE already includes the implementation of the national diagnostic inventory;

- Assist in the review and implementation of School Safety Plans in public and private schools;
- Carry out the Resolution of the Office of the Minister of Education, issued in 2005, to plan and use piles to construct vital new works in schools located in areas affected by periodic flooding;
- Under the PRECA framework, the National Diagnostic project has begun, with the aim of determining.

GUATEMALA - INFRASTRUCTURE SAFETY.

- The Ministry of Education establishes processes to evaluate damages to school infrastructure and the strategy to assist children in affected areas. The Development Councils focus attention on disaster reduction.

HONDURAS - INFRASTRUCTURE SAFETY.

- The Ministry of Education has a Master Plan for Schools' Physical Infrastructure.

NICARAGUA - INFRASTRUCTURE SAFETY.

Process

Project for the structural reinforcement of schools and shelters, conducted in coordination with municipal authorities.

Participants include the municipal delegations of the Ministry of Education, mayors' offices, secondary school students (by contributing the ecological hours envisaged in the syllabus), and parents who, despite having their own jobs, support school reinforcement efforts. Support was provided by nongovernmental organizations that deal with the subject of risk management, and by the Middle East Technical University in Ankara, Turkey, which provided technical and methodological inputs and helped monitor



the process.

Instruments and methodologies

- The structural reinforcement methodology is a reference point for the development of a large-scale reinforcement strategy;
- The fact that the technology has been applied to shelters reinforces the subject of safe shelters and schools.

EL SALVADOR - INFRASTRUCTURE SAFETY.

Process

The Ministry of Education (Ministerio de Educación, MINED), through the National Bureau of Infrastructure (Dirección Nacional de Infraestructura Educativa, DNIE), established regulations to control the quality and safety of school infrastructure works. The contract documents stipulated aspects such as the mandatory preparation of a Quality Control and Work Safety Plan. This plan must be approved by supervisory agencies prior to the start of the works and must serve as guideline for the various activities and functions to be performed.

Instruments and methodologies

The plan's phases to ensure the implementation of quality control and operational safety are:

- A full review of contractual documents;
- The builder must appoint a civil engineer and/or architect exclusively to oversee the project's quality and safety;
- Before starting the work, the contractor must submit the Quality Control and Work Safety Plan;
- During the construction process, the contractor and supervisor will hold preparatory meetings prior to all construction processes;
- Plan verification: the supervision verifies that all stipulated activities for quality and safety control

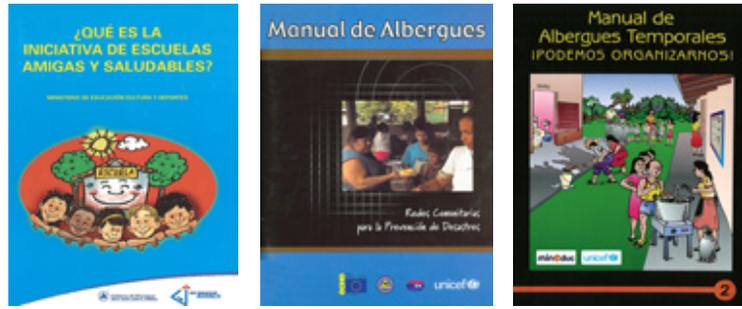


performed by the construction company are being implemented;

- The supervision will submit written recommendations, through the General Management Office, when there is need to remove incompetent or inefficient personnel from the worksite.

The Ministry of Education's National Bureau of Educational Infrastructure (DNIE) has stipulated the following requirements in order to ensure quality in school buildings:

- Compliance with safety and hygiene regulations;
- Compliance with regulatory criteria for site selection;
- The presence of experts with broad experience in the design of school projects;
- Complete technical files that contain all the basic information needed to carry out the project;
- Commitment by designers to answer any questions in the project bidding stage;
- Prior review by the financial resources administration unit and by the project executing unit before final submission;
- Design planned for orderly future growth;
- Approval of full plan by MINED's (DNIE);
- MINED has prototype designs for each natural event, with emphasis on infrastructural safety and on decreasing the risk of vulnerability to natural disasters by providing schools with suitable furniture and computer equipment.



PANAMA: INFRASTRUCTURE SAFETY

Process

Under the responsibility of the National Bureau of Engineering and Architecture (Dirección Nacional de Ingeniería y Arquitectura, DINA) of the Ministry of Education (Ministerio de Educación, MEDUCA), studies and prior assessments have been conducted on sites considered for the preparation of projects for various schools. If another organization is planning the school, it must undergo evaluation and inspection by MEDUCA.

These processes have improved significantly, due to the regulations and standards that have been implemented recently. Their aim is to ensure that new schools are constructed on sites where the risk is acceptable and where there is ongoing monitoring and evaluation of work execution, if possible with the participation of educational communities.

Instruments and methodologies

- Disaster risk reduction criteria were developed in all processes of service to schools, under the auspices of ISDR and UNICEF, through the Project “Strengthening of Local Risk Management in the Central American Education Sector”, conducted under the ECHO Action Plan V/Central America.

SUPPORT MATERIAL: INFRASTRUCTURE SAFETY

“Review of Designs, Proposals for Standardized Models”. Ministry of Education of El Salvador, APREMAT and the European Union.

The publication compiles criteria and specifications for the selection of sites and the design of different levels and types of school buildings.

“Temporary Shelter Manual: We Can Organize Organize Ourselves! (“Manual de Albergues Temporales ¡Podemos Organizarnos!”). UNICEF and the Ministry of Education of Guatemala.

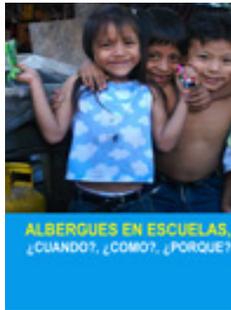
For situations in which a community is impacted by a disaster and the school is used as a shelter by affected families. This manual provides guidance on how people can organize in order to coexist better and to protect the school building as well as the assets and books contained in it.

“What is the friendly and healthy schools initiative? (“¿Qué es la iniciativa de escuelas amigas y saludables?”), Government of Nicaragua, Nicaragua Avanza, Prosilais, ASDI, Panamerican Health Organization.

Its aim is to prepare and support a new educational model and a strategy to make the school a space that promotes participation and a healthy life style, strengthening the culture of respect and cooperation that is essential for changing attitudes and practices that influence people’s proper development.

“Manual of Shelters and Community Networks for Disaster Prevention” (“Manual de Albergues, Redes Comunitarias para la Prevención de Desastres”. European Commission, National Commission for Risk Prevention and Emergency Response, Radio Netherlands and UNICEF.

The manual offers general recommendations for



the administration of shelters, using as a basis the infrastructure available in the community, including schools.

“Shelters in schools: How? When? Why?” (“Albergues en escuelas: ¿Cómo?, ¿Cuándo?, ¿Porque?”). ISDR, UNICEF, Central American Office of Educational and Cultural Coordination, European Commission.

The manual contributes elements to enrich dialogue and discussion on the use of schools as temporary shelters by proving basic information and considerations to be weighed by authorities, teachers, technicians and cooperation agencies before the use of a school as a temporary shelter is considered. The manual tries to explain ideas, dispel doubts and bring together elements in an orderly manner for purposes of quick and easy consultation.

The manual is divided into two parts. The first explains that, in emergency, crisis and disaster situations, the priority is humanitarian duty and the protection and safety of the affected population. Next, the school’s use as a temporary shelter and its direct and indirect consequences on education and children are evaluated. This section presents considerations and thoughts on education and on protecting the rights of children in the humanitarian agenda, as illustrated by the experience and testimony of several witnesses. The second part analyzes the advantages and disadvantages of using the school as a shelter, the preparations that need to be considered in schools identified as possible temporary shelters, and the roles of educational institutions involved in emergency preparedness and response. Besides providing information and guidance, this document is meant to be tool for decision making and for the organization and execution of strategies if the school is used as a temporary shelter. It recommends

actions so that the use of schools as temporary shelters does not affect the right of children and adolescents to the prompt restoration of education activities following an emergency.

“Safe school on safe ground” (“Escuela segura en territorio seguro”. ISDR, UNICEF, Central American Office of Educational and Cultural Coordination, European Commission.

The document is aimed at authorities, teachers, technicians and cooperation agencies who deal with risk reduction in the education sector. The aim of this document is to promote reflection on what a safe school is: one that provides infrastructure which can withstand a disaster, or one that can also ensure children’s right to education even in an emergency.

The document is divided into five chapters. The first refers to the World Disaster Reduction Campaign 2006–2007: “Disaster risk reduction begins at school”, promoted by the UNISDR Secretariat and its members. This campaign seeks to inform and mobilize governments and individuals on the importance of disaster risk education and on the need for safer school facilities. Chapter two presents conceptual tools for this subject, with a summary of how terms and their uses have been evolving over the years. The meanings of words are presented, such as: school, site, hazards, vulnerabilities, risks and disasters. It also provides information on the principal causes of hazards. Chapter three offers an overview of the factors that determine whether or not a site is safe.

Site is defined as “the result of constant interaction between human communities and the ecosystems of which they are a part, or with which they are related in some way”. Chapter four deals with the school itself and with structural factors, called education software, including the buildings in which the school



operates, its furniture and equipment, and the quality and frequency of their maintenance. It also deals with non-structural factors, which refer to the focus that the school has and applies to the world, to human beings (especially its own students and teachers), to the teaching-learning processes, to relationships between the community and the school, and to itself. Finally, the chapter proposes other issues, such as the school as a promoter of territorial safety. It reflects on the importance of continuity of quality education in disaster situations, and on the contribution to normalizing life and the implications of using the school as a shelter following a disaster.

The document ends with important considerations on the cultural relevance of ethnic communities and ethno-educational processes, which are based on non-separation between the daily life of the community and the life of the school. Children's learning constitutes an exercise of direct, constant communication with people in the community who are considered wise because of their knowledge, their age or their role in the group.

SCHOOL EMERGENCY PREPARATIONS AND PLANS:

COSTA RICA - PREPARATIONS AND PLANS

- Existence of an institutional-level emergency response curriculum;
- Creation of different types of teaching materials by schools: songs, games, plays;
- Creation of the Training Brigade as an agency of dissemination and facilitation;
- Use of audiovisual media to encourage a spirit of success and increase awareness;
- Existence of visual materials that encourage personnel to take a proactive attitude toward this subject;

- Need to assist the handicapped, due to lack of specific protocols.

Guatemala: Preparations and plans

- Although since 1997 there has been a ministerial agreement stating that schools must have a Response Plan, in 2005 the Framework Agreement was signed by the Executive Secretariat of the National Office of Coordination for Disaster Reduction (Secretaría Ejecutiva de la Coordinadora Nacional para la Reducción de Desastres, SECONRED) and the Ministry of Education (Ministerio de Educación, MINEDUC). That same year, the First National Earthquake Drill was conducted in the nation's schools;
- Process of training the educational community in risk management, conducted by the CONRED system and MINEDUC.

Process

- **Planning:** Training for administrative staff (Educational Development Unit, Community Service Office), supervisors, management staff, teachers, children, parents. Selection of establishments participating in the drill;
- **Coordination:** Local institutions and authorities (government, municipality, National Police, Rescue Squad, Boy Scouts, COCODES, National Army, private institutions);
- **Execution:** Earthquake drill;
- **Evaluation:** Implementation of existing first aid kits, and improvisation of other equipment such as stretchers, splints, etc. The pending Training Committees were created.

Instruments and methodology

- Local alarm system: buzzers, megaphones, bells, steel rails, bells, horns, etc.;
- Preparation of manuals and/or guidelines. (Organization of school committee, methods for psychosocial support);

- Guidelines for response plans;
- Evacuation guidelines, organization of school committee;
- Preparation of flipcharts;
- Posters;
- Radio and television spots;
- Signs for evacuation routes;
- Audiovisual materials.

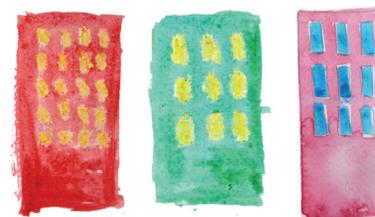
HONDURAS: PREPARATIONS AND PLANS (School plans)

Process

- Identification of community needs;
- Inter-institutional agreements (Secretariat of Education and OFDA);
- Selection of participants committed to risk management (teachers, children, National Police, Red Cross, municipality);
- Implementation of a school safety program that includes prior research;
- Development of school safety training;
- Evaluation;
- Formation of School Emergency Committee;
- Preparation of School Safety Plan;
- Implementation of School Safety Plan in the locality's educational centers and institutions;
- Evaluation of the plan: Conduction of drills, monitoring and execution of plan.

Instruments and methodology

- Interactive teaching methodology;
- Manuals, weekly installments, guidelines, standardized assessments, recreational games, puppets, painting contests, dramatizations;
- Trained teachers join as trainers in the subsequent local and municipal training processes;
- Conduction of school and local drills (according to the risk scenario).



NICARAGUA: PREPARATIONS AND PLANS (School safety)

Process

- Cooperation with national and departmental MINED;
- Inter-institutional alliances: Nicaraguan Red Cross with School Safety and Protected Schools, since 1992;
- Training workshops at different levels (national, regional, municipal and local) and in different regions;
- Monitoring by schools (support for school organization; conduction of training);
- Preparation of school safety plans;
- Validation of training process through simulations and drills.

Instruments and methodology

- Interactive methodology: school safety course, 1998–1999;
- Protected Schools 2000;
- Guidelines for implementation of practical exercises to evaluate drills;
- Contents adapted to the circumstances of schools and their context;
- Integration of the Protected Schools methodology for disaster preparedness in rural schools.

EL SALVADOR: PREPARATIONS AND PLANS

(Organization, school training and implementation of protection plans)

Process

- Coordination with MINED;
- Establishment of agreements;
- Coordination activities;
- Awareness-raising process;
- Diagnostic;
- Training sessions;

- Design of plan;
- Validation and dissemination;
- Execution of plan

Instruments and methodology.

- Map of risk and resources;
- Focus groups;
- Interviews;
- Visits;
- Inspection of facilities;
- Data collection sheet;
- FODA (Fortalezas, Oportunidades, Debilidades y Amenazas) (Strengths, Opportunities, Weaknesses and Hazards)

PANAMA: PREPARATIONS AND PLANS

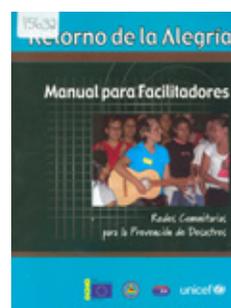
(School plans)

Process

- Raising the awareness of the educational community;
- Selection of school coordinators for the program;
- Coordination with safety agencies (National Civil Protection System, firefighters, Red Cross, Health Centers, Police, Social Security Fund, etc.);
- Preparation of a diagnostic of hazards and vulnerability in order to define risks;
- Preparation of the plan in accordance with the outcome of the diagnostic;
- Evaluation and improvement of the plan with the support of safety agencies.

Instruments and methodology.

- Active participation of the educational community;
- Visits to safety agencies;
- Formation of School Safety Committee;
- Use of work guidelines for the preparation and evaluation of plans stemming from the USAID/OFDA School Safety Course (CUSE) and those offered by the



Red Cross;

- Consultation with specialists of the various safety agencies in order to review plans;
- Psychological treatment for children affected during emergencies and disasters (Retorno a la Alegría [Return to Happiness]; Brigada de Atención Psicosocial [Psychosocial Treatment Brigade]);
- Access to bibliography;
- Active participation by schools in communities' prevention efforts;
- Development by MEDUCA of Guidelines for School Safety Plans.

MATERIAL DE APOYO - PREPARATIVOS Y PLANES

“Return to Happiness” (“Retorno a la Alegría”). Manual for facilitators. European Commission, National Commission for Risk Prevention and Emergency Response, Radio Netherlands and UNICEF.

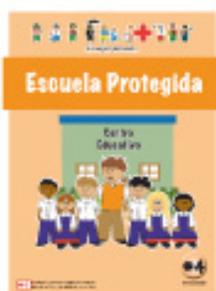
The manual is part of the “Return to Happiness” program whose aim is to aid families and communities in the process of psycho-social recovery, specifically children who are vulnerable to emergencies. Youth and volunteer educators are the subjects of key actions for the implementation of this program.

“Protected Schools” (“Escuelas Protegidas”). Work Notebook. International Federation of Red Cross and Red Crescent Societies.

The aim is to support school authorities in their duty to ensure the safety of students and teaching staff. This module is aimed at teachers and administrative staff, parents and students, so that they can fully carry out this responsibility.

“Teaching guidelines for psycho-social support to children in disaster situations” (“Guía didáctica de apoyo psicosocial para niños y niñas ante situaciones de desastre”). World Vision Guatemala,





CRG, CARE/Cobán, Ministry of Education, Catholic Relief Service, Ministry of Public Health, CONRED. Guatemala.

The guidelines provide teachers and community facilitators with specific teaching materials to enable preparedness and response mechanisms with regard to psycho-social support for persons affected by natural or manmade phenomena.

“Organization of the School Committee for Risk Reduction” (“Organización del Comité Escolar para la Reducción de Riesgo”). MINEDUC, Office of Coordination for Disaster Reduction and UNICEF. Guatemala.

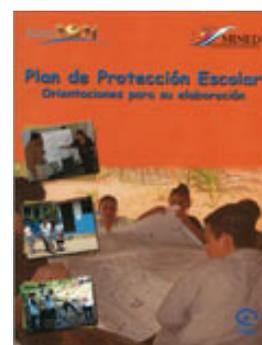
The purpose of the guidelines is to strengthen the education process and promote school organization for the management of risk reduction.

“School Protection Plan, José Daniel Carias School” (“Plan de Protección Escolar Centro Escolar José Daniel Carias”). MINED. El Salvador.

This document is the result of planning by the educational community, aimed at conducting efforts to identify the risks and threats to be prevented and responding to emergencies or disasters. The plan is aimed at generating capacities for risk reduction through the implementation of best practices for local management in preparedness, prevention, mitigation and response to emergencies in schools, focusing on gender rights and equity.

“School Protection Plan: Guidelines for its preparation” (“El Plan de Protección Escolar: Orientaciones para su preparación”). MINED and National Education Plan. El Salvador.

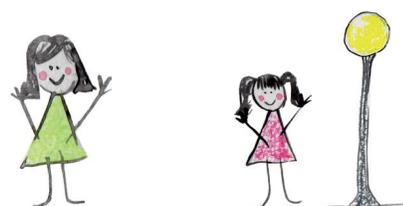
The objective of the School Protection Plan is to strengthen the educational community’s capacity to conduct efforts and adopt measures that prevent and mitigate risk, and to prepare for and respond to



adverse events in order to safeguard the life of the student population and the school’s assets.

School Safety Course (CUSE). USAID/OFDA.

The course is aimed at people and agencies whose mission deals with risk prevention and mitigation and with emergency preparedness and response in schools. Participants will be able to identify the dangers to which a school, its community and the country are exposed, and its available resources for reducing risk and preventing disasters. Likewise, it highlights the importance of providing adequate information on these issues as part of the school safety plan.



5

Disaster Management in the Andean Subregion School Environment

With a population of over 122 million, in the context of significant environmental fragility and with a clear trend toward accelerated urbanization, the countries of the Andean Subregion (Bolivia, Colombia, Ecuador, Peru and Venezuela) are facing the challenge of sustainably and efficiently administering the use and occupation of their territory. The recurrence and severity of disasters that affect the Andean countries highlight the need to move forward on risk management. Therefore, the Andean Committee for Disaster Prevention and Response (Comité Andino para la Prevención y Atención de Desastres, CAPRADE) was formed, bringing together in one regional institution the different phases of disaster reduction.

CAPRADE was created with the objective and responsibility of: “contributing to reducing risk and the impact of natural and manmade disasters that may occur in the territory of the Andean Subregion, through the coordination and promotion of policies, strategies and plans, and the promotion of activities for disaster prevention, mitigation, preparedness and response, rehabilitation and reconstruction, as well as through mutual cooperation and assistance and the sharing of experiences on the subject.” Therefore, the “Andean Strategy for Disaster Prevention and Response” was formulated for a ten-year period, with the adoption of the Andean Strategic Plan for Disaster Prevention and Response 2005–2010, as well as the Overall Operating Plan of the Agreement signed by the European Community and the General Secretariat of the Andean Community, entitled “Project for Support to Disaster Prevention in the Andean Community” (“Proyecto de Apoyo a la Prevención de Desastres en la Comunidad Andina”, PREDECAN)¹⁴.

PREDECAN seeks to coordinate technical and financial efforts aimed at strengthening the implementation of the Andean Strategy for Disaster Prevention and Response (Estrategia Andina para la Prevención y Atención de Desastres, EAPAD). This has been carried out since 2005 in the Andean Community’s countries: Bolivia, Colombia, Ecuador and Peru; Venezuela participated in the project until July 2007, with an estimated completion date of 2009.

The project has organized its activities around five results:

Result 1. Policies and Organization: Strengthen systems and policies for risk management in the Andean Subregion and in each of its countries.

Result 2. Information and Knowledge: Develop and implement mechanisms that enable the optimum use of information systems, facilitating the discovery, access and sharing of information.

Result 3. Planning and Development: Incorporate risk management in land use planning, in development planning and in public investment, as a key element of risk reduction.

Result 4. Education and Communication: Support the strengthening of awareness-raising efforts, of knowledge about risk, and participation for the establishment of guidelines and strategies with social stakeholders, educators and journalists.

Result 5. Participation in Local Risk Management: Support the strengthening of local capacities for risk management in the Andean Subregion through the development of a pilot project and the dissemination

14. <http://www.comunidadandina.org/medecan/contexto>



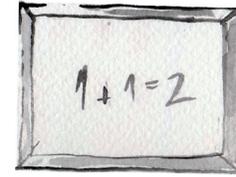
of significant experiences.

In order to move ahead with EAPAD and its core issue: "Promotion of a culture of prevention with social participation", two subregional workshops were held: "Formal Education on Disaster Prevention and Response" and "Role of Community Education and Social Communication in Disaster Prevention and Response". From the conclusions presented at these workshops, CAPRADE member institutions formulated the proposal for including in the curriculum "Learning to Prevent" ("Aprendiendo a Prevenir"), as well as the "Andean Subregional Community Education Plan for Disaster Prevention and Response" and the "Andean Subregional Social Communication Plan for Disaster Prevention and Response".

For the implementation of these plans, PREDECAN prepared the document, "Education and Communication Strategy for Risk Management in the Andean Subregion", which is aimed at strengthening the capacities of stakeholders and institutions so that they can play an active role in the construction, execution and strengthening of national and subregional risk management strategies. The strategy's target group is composed of the personnel and experts of national institutions (National Systems and Civil Defense, CAPRADE representatives), social communicators and journalists, ministers of education and persons responsible for curriculum, designers and executors of higher education programs and post-graduate schools, civil institutions and international agencies.

In particular, Result 4 conducts the following activities:

- Designing a strategy for awareness-raising, communication, training and education in risk management, focused on the various stakeholders;



- Implementing the strategy's awareness-raising and communication activities;
- Implementing the strategy's training and education activities.

PREDECAN shows progress in terms of including risk management in the basic education curriculum, in incorporating risk management in higher education, and and communication and journalism for risk management. In accordance with the core issues that are part of the present publication, that which is related to inclusion in the curriculum is documented.

INCLUSION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM:

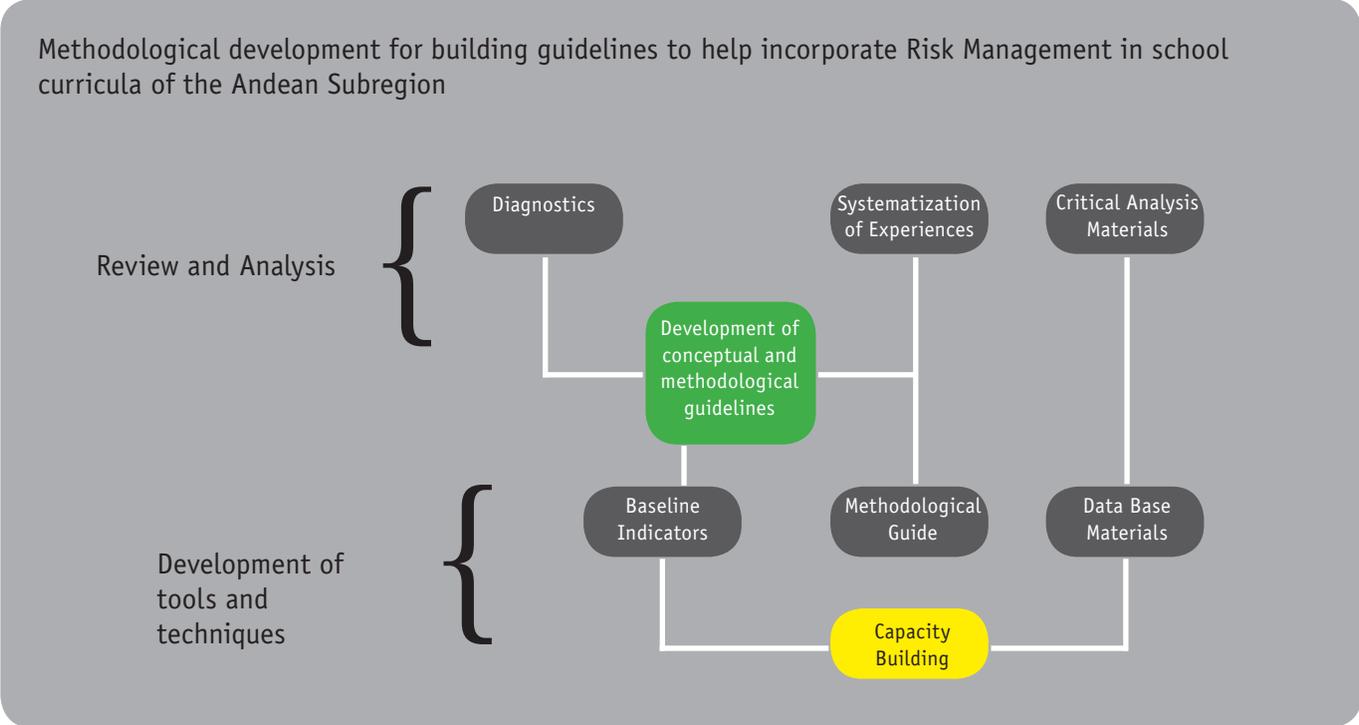
In conjunction with the United Nations Children's Fund (UNICEF), an International Workshop on Risk Reduction and Disaster Preparedness in the Education Sector of the Andean Subregion was held to discuss progress in including this subject in the school curriculum of the various countries and the possibility of compiling local experiences and projecting them at national level. PREDECAN has supported the preparation of guidelines for the inclusion of risk management in the countries' curriculums. To this end, the activities presented in the following diagram have been carried out.

These guidelines and the linkage between relevant institutions and agencies have been developed for Bolivia, Ecuador and Peru; Colombia defined policies on this matter some time ago. As an initial product, a basic document with guidelines has been formulated in each country, proposing a conceptual framework and strategies. The regional and local validation of these guidelines is currently under way.

The diagnostic made it possible to compile regulatory



and policy aspects, stemming from the systemization of concrete experiences implemented in each of the countries, and to analyze and interpret the conceptual and methodological elements that facilitate or limit the inclusion of risk management in the school setting; the compilation and analysis of materials contributes instruments to the process that allow the guidelines to be strengthened.



Drawn from PREDECAN Progress Notes: Three years supporting disaster prevention in the Andean Community.





Consultancy document for PREDECAN

Through a consultancy contracted by PREDECAN to meet the objectives of Result 4, 174 educational materials were compiled in the four countries that form the Andean Community of Nations (Comunidad Andina de Naciones, CAN), in order to analyze the sample and contribute to the guidelines for incorporating risk management in the school setting. The material compiled was submitted to the Regional Disaster Information Center, Latin America and the Caribbean (Centro Regional de Información sobre Desastres de América Latina y El Caribe, CRID), and under this framework to the Networks of Virtual Libraries on Disaster Prevention and Response (Redes de Bibliotecas Virtuales en Prevención y Atención de Desastres, BIVAPad). Of the total materials collected, 21 are from Bolivia, 43 from Colombia, 36 from Ecuador, and 60 from Peru; 13 international materials were also included.¹⁵

In particular, the project selected five materials for a more specific analysis. The following description was taken from the documents “Inventory and description of educational materials on risk management compiled in the countries of the Andean Subregion” and “Systemization of school experiences with risk management in countries of the Andean Subregion”, from the consultancy for “Incorporation of the subject of risk management/disaster prevention and response under the framework of education, in the curriculum in the various levels and modalities of the education system in countries of the Andean Subregion”. These documents, in digital format, were kindly provided by the PREDECAN Project.

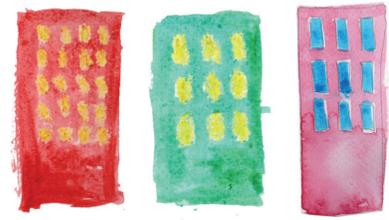
**BOLIVIA:
SERIES OF MODULES – PROJECT TO STRENGTHEN LOCAL CAPACITIES FOR NATURAL DISASTER PREVENTION IN THE EXTREME NORTH AND SOUTH OF POTOSÍ**

Executed by the Medicus Mundi organization and financed by ECHO (the European Commission’s Humanitarian Aid Office) through the DIPECHO line for natural disaster prevention and preparedness.

The series consists of four modules, two of them aimed at the extreme north of Potosí and published in June 2003, and the other two aimed at the extreme south of Potosí and published in February 2005. The modules were formulated for use in the second cycle of primary education, and each is articulated in accordance with the country’s official directives.

“In the light of the way in which the material incorporates and responds to the characteristics of the setting in which it is used, it is important to mention that the material is composed of modules that correspond to specific regions with different contexts. In general terms, each module is divided into four units. The modules’ units are similar in terms of their orientation and general focus. If the modules are compared to each other, the general focus is common to all of them, but the differences lie in their contextualization, that is, in the specific content for each region.

15. There is only one document whose origin was unclear at the time of the analysis.



Some of the common elements of each module's units may be summarized as follows:

The first units of these modules expand understanding about the surrounding circumstances, from a cultural, environmental and ecological standpoint. Thus, the audience is encouraged to analyze how these three aspects are interrelated.

Unit two of the modules is based on developing capacities to identify natural climatological indicators, appreciate cultural practices and generate a critical stance with respect to danger, as preventive practices for caring for the surrounding area. In other words, the aim is to form a criterion for analyzing the surrounding area, in order to create a culture of prevention.

In unit three of each module, the aim is to promote sustainable behaviors for prevention by valuing the past in relation to the present, and to seek understanding of changes and current conditions. Work with elderly persons in the community is included, so that they can contribute their testimony.

Unit four of the modules deals with generating calendars linked to the productive activities of each region, based on an understanding of the setting, climate and culture. The idea is to define local and external means of preventing climate effects such as frost, rain and wind, depending on the region.

The module for the extreme south of Potosí includes a fifth unit which, as the material states, is aimed at demonstrating the danger and consequences of a natural event that becomes destructive, and how to be prepared for such situations. It later explains that, under this unit, strategies can be generated to respond to and prevent such natural events.

Thus, the material fully incorporates cultural and natural elements and seeks their integrated, systemic understanding...

...The modules are accompanied by guidelines to be used under the framework of teacher training processes, including:

- General concepts regarding disaster prevention;
- Environment;
- Natural disaster preparedness and prevention;
- Participatory dynamics;
- Reading materials;
- Facilitation techniques.

The guidelines are meant to be replicated in any local context (municipalities, provinces, localities with common contextual features). To this end, the most important thing is the management of the subject, which is ambiguous in terms of natural disasters but in turn promotes exercises that demonstrate that disasters are not natural per se...

...The module dealing with the extreme south of Potosí, has a different and significant element: the inclusion of indicators that can help teachers monitor students and verify the degree to which this issue is included, particularly in the subjects of Life Sciences, Language and Communication, Expression and Creativity.

This is the material's key contribution to including the inclusion of the issue in the curriculum, but only in terms of the syllabus. Therefore, the issue is not fully included in the school, which transcends the syllabus."





Image: Consultancy document for PREDECAN

According to the consultancy document prepared for PREDECAN, the following may be highlighted:

- It is a specific instrument for use in two territorial zones of Bolivia. Its application in another context would require a deep understanding of the region and additional resources to modify it;
- Due to the cross-cutting nature of inclusion in different subjects, implementation presents difficulties under the framework of disciplinary curriculums;
- The application of the regulation and the preparation of material by teachers and management staff offer factors of sustainability and ensure results;
- Great importance is given to the community's involvement in the process, especially in project planning. This made it possible to create awareness on the role of the school and on teaching about risks.

**COLOMBIA:
INCORPORATION OF RISK MANAGEMENT IN THE
SCHOOL CURRICULUM. FROM THE SCHOOL-BASED
DISASTER PREVENTION COLLECTION. GUIDEBOOKS
I, II AND III (BOGOTÁ)**

Section 6 presents detailed documentation on this material. The information on disaster risk reduction in the local school setting, illustrated in the present document, compiles the experiences of incorporating disaster risk reduction in the school curriculum of the city of Bogotá, Colombia.

**ECUADOR:
THINKING GREEN (PENSANDO VERDE), SERIES FROM
THE GREEN SCHOOLS (ESCUELAS VERDES) PROJECT.
BOX OF EDUCATIONAL MATERIALS**

The Escuelas Verdes Series by the Center for Environmental Studies of the University of Cuenca, with the support of the Flemish Association for Development Cooperation and Technical Assistance (VVOB).

“The box of educational materials, Pensando Verde, is composed of five documents and a manual that explains the project. The five documents or book sare:

- What do you know about the air and the environment?
- What do you know about solid waste?
- What do you know about health and nutrition?
- What do you know about water?
- What do you know about soil and biodiversity?

The five books are aimed at contributing elements or actions under the framework of environmental education and, as presented in the introduction, at improving relations between human beings and their immediate surroundings. They also seek to contribute significantly to the areas of science and technology on behalf of conservation and sustainable development.

Each exercise or activity proposed in these modules includes the parts of the curriculum in which the activity can be included, but leaves open the level to which such activities would be implemented.

The five books are not presented in a specific order, but their authors recommend that they be read and implemented in sequence.

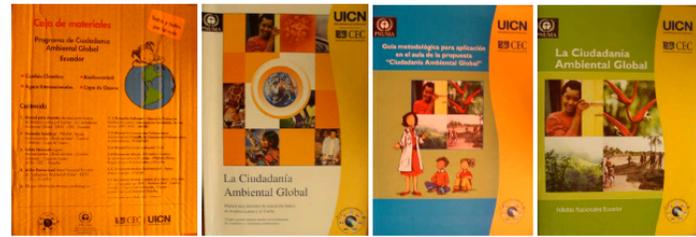


Image: Consultancy document for PREDECAN

The series is also open for use in the community or in informal processes, since it includes activities to be conducted in the school, in the classroom and in the surrounding areas...

...Although the material does not explicitly address the subject of risk management, it presents strict, complete methodologies from a scientific standpoint. These include an introduction, details on the development/process and completion of the exercise. The aim is to encourage understanding and reflection on the subject from an environmental focus.

Most of the material focuses on proposing exercises or activities of scientific research, thus making the setting's natural features and elements part of the activities. The final thoughts that encourage the different activities proposed are contributions to the analysis that the student should carry out, integrating the elements of his immediate context."

According to the consultancy document prepared for PREDECAN, the following may be highlighted:

- Although the subject of risk management is not specifically contained, it strictly addresses, from an environmental standpoint, the process of understanding the setting in order to achieve a dynamic comprehension of nature, thereby generating knowledge about the behavior of different elements of the environment.
- The proposed exercises are aimed at helping students internalize the subject and understand the results. They end with reflection that help raise students' awareness about how they can improve the situation.
- The materials do not incorporate the subject in social and cultural aspects.

Box of materials, "Ciudadanía Ambiental Global" Project

This is a series of modules under the 2005 program "Global Environmental Citizenship" ("Ciudadanía Ambiental Global"), promoted by the United Nations Environment Program (UNEP), the International Union for Conservation of Nature (IUCN), and the IUCN's Commission on Education and Communication for South and Meso America (CEC). The material was financed by the Global Environment Facilities (GEF), the Ministry of Environment of Ecuador and cofinancing by networks participating in the preparation. The program is aimed at use in the South and Meso-American Region and consists a box of materials that respond to an exercise for the project's application.

The materials are aimed at teachers and students in formal basic education, and are recommended by age ranges (ages 7 to 9, 10 to 12, and 13 to 14).

"The key subject of the box of materials is the formation of environmental citizenship, as mentioned in the introduction to one of the documents. The material seeks a modern interpretation of four essential global problems: climate change, destruction of the ozone layer, destruction of biodiversity, and pollution of international waters.

In accordance with this, and taking into account the issues addressed and the teaching methodologies proposed, such as workshops, discussions between different areas, field trips, etc., the material contributes to promoting, in the school context, a comprehensive view of four of the global problems related to disaster risk management.

The material also contributes from the standpoint of transversality proposed for the analysis of environ-





mental issues.

In most of the proposed exercises, inputs from the immediate context are sought. However, the material is clearly aimed at a broader context of global connection.

In addition, the exercises encourage students to reflect on each issue. Since the material is of a regional focus, the social and cultural aspects form part of each person's contribution to the proposed exercises.

Each exercise stems from the identification that each student and teacher should make with regard to their surroundings and immediate context, which expand as the activity progresses: the school, locality, region and world.

The collection is focused at regional level, with implementation in countries and localities, which makes the material applicable at all three levels. However, more than its application at each level, its value lies in the proposed transversality, which may complement the focus on the subject by several countries in the subregion."

According to the consultancy document prepared for PREDECAN, the following may be highlighted:

- It is a series with a clearly environmental focus and is applicable at local, national and regional levels;
- The analyses do not include social or cultural aspects, which are highly relevant for understanding risk.



Image: Consultancy document for PREDECAN

RED Guidebook for Local Risk Management. Training modules (international organization)

This is a training module prepared and produced in January 1998 by members of the Network of Social Studies on Disaster Prevention in Latin America. This guidebook is the second volume in a series that began with the publication of a document entitled, "The Rise, Fall and Resurgence of Felipe Pinillo, Mechanic and Welder, or I am Going to Run the Risk" ("Auge, Caída y Levantada de Felipe Pinillo, Mecánico y Soldador o Yo Voy a Correr el Riesgo"), by Gustavo Wilches-Chaux.

"The modules' key contribution is the focus on risk management since it contains all the conceptual, methodological and analytical support needed to generate critical thinking aimed at understanding the issue.

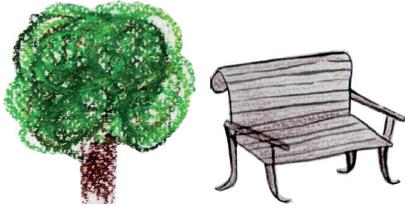
Of all the materials analyzed, this is the one that offers specific tools for training in risk management.

This material's modules are:

Module 1. From disaster response to risk management: a new view of disasters;

Module 2. Disasters are unmanaged risks;

Module 3. As a stakeholder, I participate in the risk and can also participate in change;



Module 4. Institutions dealing with risk management;

Module 5. Stakeholders' meeting: toward risk management;

Module 6. Disasters: unresolved problems of development;

Module 7. Risk management as an opportunity for sustainable development.

Through the seven modules developed as part of the material, in accordance with the text's introduction, conceptual and teaching elements are presented, based on which a trainer or someone wishing to be one can create and invent his own training process.

The material's open nature allows it to be appropriated through implementation in different contexts. Thus, the material can be modified and adapted according to needs, but it can also guide and establish basic concepts about risk management.

The material encourages the trainer to use elements and actual situations in his local context to reach a better understanding and implementation of the concepts addressed.

The analysis of natural, social and cultural aspects is an integral part of the proposed exercises. In some cases, inputs on these aspects are used for the analysis, and in other cases they are the result of

final reflection.

In addition, the material calls for the contextualization of the different teaching proposals, so that it is part of the proposal that the trainer should prepare as a result of using the guideline.

Finally, the guidelines are focused and prepared for use at local scale but are not linked to a specific location; instead they provide tools for use by the trainer.

This makes the material flexible and enables it to be reproduced for immediate use, since these guidelines are meant to be used by persons who will implement them."

According to the consultancy document prepared for PREDECAN, the following may be highlighted:

- Although the material does not contribute to inclusion in the curriculum, it contains learning tools that can be used by teachers.

Although materials compiled in Peru were analyzed, they did not form part of the PREDECAN consultancy document.

The following are several conclusions presented in the work conducted for PREDECAN on the subject of materials existing in the Andean Subregion for the inclusion of risk management in the school curriculum:





- After compiling 174 materials (51 of which were considered educational) and conducting a specific analysis of several selected materials, the consultancy conducted for PREDECAN concluded that they are specific products, applicable exclusively to the local conditions for which they were developed, and thus it is not recommended that they be used as points of reference at regional level...

- All the materials were submitted to CRID as an inventory to be inputted in the existing database in Latin America and the Caribbean.

- Based on the analysis of materials, the products that form the series are highlighted, since they provide information on the formative process that took place.

- Even with technological advances, the materials are in the form of guidebooks or brochures but are not in digital format which would allow greater coverage.



6 Case Study: Bogotá, Colombia.

In its Andean context, Colombia is exposed to different geological and hydrometeorological threats. These, combined with the lack of planning by its municipalities, have led to the accumulation of risk situations over the years, due to inadequate land use and occupation, inadequate construction of buildings and infrastructure, and the absence of preventive measures to balance human actions and their interaction with the environment, from a social, economic and cultural standpoint, etc.

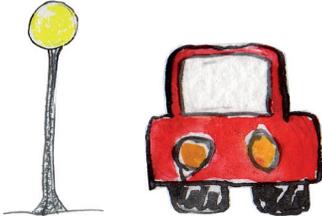
Bogotá has a population of approximately seven million people. Due to its location, its geological and hydrological features, and its growth without urban planning (except in recent years), it is exposed to conditions of considerable vulnerability and risk. These risks include: vulnerability to landslides, floods caused by overflowing rivers, earthquakes and technological phenomena related to the handling of chemicals and/or explosive materials, as well as threats stemming from public utility distribution networks (gas, water, sewer and other services). Although the city has progressed in terms of incorporating risk reduction components in schools through the adoption of public policies, instruments and improvements to schools' physical infrastructure, it is essential to continue with these processes in order to provide greater coverage and thus benefit the entire student population.

In 1987, through a City Council Agreement, the Bogotá Office of Emergency Prevention and Response was created, followed in 1990 by the creation of the Office of Emergency Prevention and Response (now known as the Bureau of Emergency Response and Prevention [Dirección para la Atención y Prevención de Emergencias, DPAE]). The District System (SDPAD) was later formed; it brings together district agencies that conduct efforts related to risk reduction. As the system's coordinator, DPAE began its work by prioritizing the generation of knowledge related to the threats to which the city is exposed and by defining various action plans aimed essentially at risk reduction.

One of the courses of action has been to incorporate risk management in education. The result has been the preparation of documents, primers, games, stories, etc. that help train teachers, strengthen educational institutions with School Risk Reduction Plans, and provide guidelines to introduce the subject in basic subjects, and various materials to support teaching. In parallel with the District Secretariat of Education (Secretaría de Educación Distrital, SED), a legal framework was prepared, requiring Bogotá's schools to conduct and implement the School Plans and incorporate the subject of risk reduction in the curriculum. Today the Secretariat plays an important role in monitoring and overseeing these activities.

Another course of action that has been promoted in the city to reduce vulnerability deals with the struc-





tural reinforcement of schools. It is worth noting that the National Earthquake Resistance Code has been updated since 1998; this code requires the conduction of vulnerability and reinforcement studies, if needed, in all essential buildings. It coincides with the adoption of specific provisions for earthquake-resistant design and construction in Bogotá. The city is conducting a study to identify the most vulnerable school buildings and prioritize the conduction of studies and interventions.

In 2003, Bogotá's initiative to reinforce essential buildings (including schools) converged with the financial support offered by the World Bank under the "Disaster Vulnerability Reduction Project".

Clearly, the political will of the city's administrations in the past 15 years has enabled an ongoing process in terms of integrated management for risk reduction. Consequently, consolidated programs for disaster prevention, mitigation and preparedness and for institutional organization, among other aspects, are now underway in the city.

INCLUSION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM:

The Institutional Education Project proposes the incorporation of risk management in the school curriculum through its inclusion in several academic subjects, syllabuses, programs, methodologies, etc. Through preschool, primary and middle school education, a process of teacher training is under way and the design of teaching methodology and instruments is being promoted, based on the needs identified in teachers and on the city's characteristics.

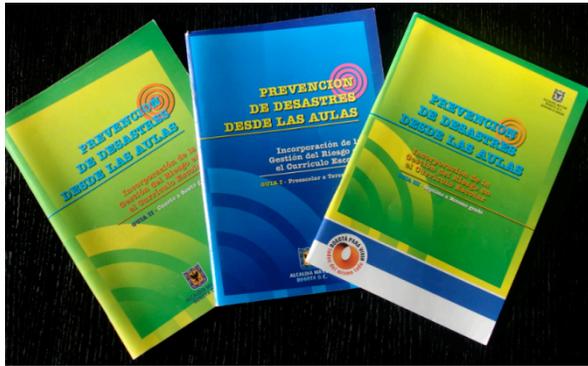
For this purpose, guidebooks were prepared for different grades (preschool to third grade, fourth to

sixth grade, and seventh to ninth grade); these form the collection "School-based Disaster Prevention" ("Prevención de Desastres desde las Aulas").

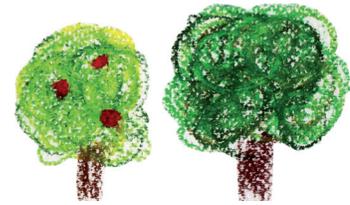
These guidebooks provide teachers of basic education with concrete contents and activities aimed at activating the processes of teaching and learning on this subject, under the framework of the social sciences and natural sciences curriculums. The aim of their implementation is that students, depending on their age and level of development, can learn about threats and how they are generated, identify them in their surroundings, understand their level of vulnerability and generate individual or collective behaviors. This enables a formative process on the subject. Likewise, it is important to explain that the guidelines are not meant to be exhaustive; instead, they invite the teacher to be creative in using them to construct the disaster prevention project in accordance with the needs and circumstances of students and the educational community, under the framework of the Institutional Education Project.

They all begin with a presentation of the conceptual framework of risk and an overview of specific threats to Bogotá, taking into consideration landslides, floods, earthquakes and technological hazards (of involuntary human origin). In terms of contents and activities, the guidelines are developed in phases of initiation or activation of prior knowledge for students, development or launching of thinking strategies, and opportunity for dissemination and completion or transfer of contents into daily life.

It is important to mention that activities dealing with the city's conditions are proposed but they can certainly be applied to other places.



The documents are available at: http://www.eird.org/cd/toolkit08/material/insercion-curricular/gr-curriculo_preescolar/item.html



SCHOOL-BASED DISASTER PREVENTION. INCORPORATION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM. GUIDEBOOK I: PRESCHOOL TO THIRD GRADE:

The guidebook is composed of two large blocks. The first presents the incorporation of risk management in the preschool curriculum. Its contents and activities are aimed at understanding risk reduction measures, based on the recognition of everyday surroundings and the definition of standards of conduct for self-protection. For this purpose, the following are identified and conducted:

- The four elements: earth, water, fire and air, and how they relate to risky situations;
- Identification of potentially hazardous sites and self-protection measures in children's everyday places, i.e., home, school and neighborhood.

The second block presents contents and activities for the inclusion of risk management in grades 1, 2, and 3, in social sciences and natural sciences classes.

To introduce this subject in social sciences classes, exercises are proposed with the aim of identifying, from a geographic and historical standpoint, the social and manmade impacts on land and the environment. The latter have resulted in socio-spatial changes over the years. For natural sciences classes, activities are presented with the aim of identifying biotic and abiotic elements and the consequences of inadequate interventions.

SCHOOL-BASED DISASTER PREVENTION. INCORPORATION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM. GUIDEBOOK II: FOURTH TO SIXTH GRADE:

This guidebook is based on the understanding of natural phenomena and on the analysis of emergency situations. Its purpose is to encourage thinking about how to take measures that reduce or prevent risk conditions.

Natural and social sciences classes teach the dynamics of planet Earth and the human activities that generate threats and increase our level of exposure to them. The document is divided into subjects dealing with:

- Natural elements;
- Natural threats (earthquakes, tidal waves and volcanoes);
- Socio-natural threats (intervention of ecosystems, floods, landslides);
- Threats of involuntary human origin (building fires, forest fires and pollution);
- Institutional aspects (institutional organization according to skills on this issue in Colombia and Bogotá).

The final part of the guidebook presents the organization existing in the country and in the city of Bogotá with regard to the District and National System for Disaster Prevention and Response.

SCHOOL-BASED DISASTER PREVENTION. INCORPORATION OF RISK MANAGEMENT IN THE SCHOOL CURRICULUM. GUIDEBOOK III: SEVENTH TO NINTH GRADE:

For these grades, in accordance with scientific knowledge, the guidebook provides greater details on natural and unintentional human threats that affect Bogotá, for the purpose of understanding how to decrease vulnerability and make the city a safer place. This process promotes the understanding of risk management through the use of planning and development criteria.

In the case of natural sciences, emphasis is placed on the planet's dynamics and their relationship to threats; the vulnerabilities that reduce risk are identified. Social sciences classes promote reasoning on the social construction of risk, taking into consideration the city's historical growth, its demographic structure and its socioeconomic, cultural and environmental conditions.

The document is divided into subjects dealing with:

- Natural threats: earthquakes (tectonic plates, origin and features of soils, earthquake measurement and earthquake resistance);
- Socio-natural threats (use of hills and water resources in the city and their relationship to landslides, floods and socio-spatial changes);
- Threats of involuntary human origin (fires, extinction and first aid).

Implementation process:

DPAE initiated this course of action in 2000 through the production of guidebooks and the training of teachers, who were given the "School-based Disaster Prevention" Collection as support materials for



the process of incorporating risk management in the school curriculum.

By 2006, SED, based on its own mandate and as an active, participating agency in the District System for Emergency Prevention and Response, took over the tasks of including this subject in the school curriculum. In order to document the processes that had already been conducted, a School-based Risk Management Information System was implemented. SED is currently conducting several updates due to recent changes in the way the subjects are addressed. This has implied changes to the current guidebooks.

Lessons learned:

Experience has shown that, despite the guidebooks and teacher training, there are difficulties in initiating the implementation process. There is also a considerable degree of variation in teachers' ability to address this subject. Part of the solutions that have been identified deal with the development of new tools and instruments that support teaching at various levels.

Incentives have also been created to allow teachers to take courses to update their skills. Thus, they can obtain the necessary credits to move up in terms of national seniority. This provides them with additional encouragement to learn about risk management.

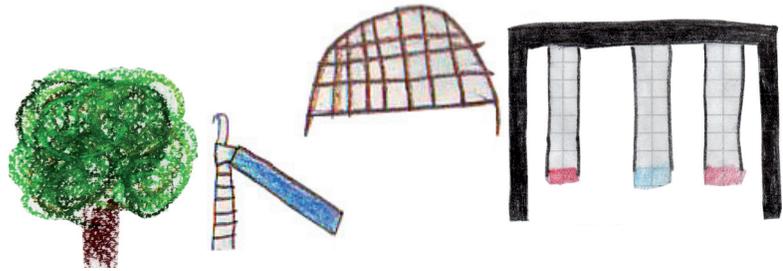
REDUCTION OF SCHOOL INFRASTRUCTURE VULNERABILITY

In order to comply with the provisions of the 1998 National Earthquake Resistance Code, which requires that public buildings provide protection to the community and safeguard lives in the event of an earthquake, and in accordance with the specific provisions for earthquake-resistant buildings in Bogotá, in 2000 the District Secretariat of Education conducted a preliminary qualitative analysis of the seismic vulnerability of all of the District's educational institutions. The result of the study was that, of the 706 schools evaluated, 430 required more in-depth studies in order to subsequently reinforce their infrastructure. It is important to mention that Bogotá has around 2,507 public and private schools.

In 2004, the "Policy for the quality of life of children and adolescents in Bogotá, 2004–2008" ("Política por la calidad de vida de niñas, niños y adolescentes en Bogotá, 2004–2008" was formulated; it is based on three core areas: protection of life, generation of spaces favorable for development, and conditions for the exercise of citizenship. The core area of protection of life deals with the search for comprehensive safety (risk-free, safe space and transportation, and food security) and ensuring timely, quality response to events that affect survival and development. The core area of generation of favorable spaces seeks to review and adjust educational institutions (schools and kindergartens) to make school spaces suitable, pleasant and safe and thus create environments that are favorable for learning and affect the quality of learning.

There is agreement between the policies defined and the need to reinforce school buildings, making it possible to reach agreement on the definition of





a specific program for the reinforcement of Bogotá's schools. This also makes it possible to link relevant efforts for the joint implementation of the "Policy for the quality of life of children and adolescents in Bogotá, 2004–2008".

PROGRAM FOR THE REINFORCEMENT OF BOGOTÁ'S SCHOOLS:

In line with the policies defined in the city's Governance Program and with the understanding of school infrastructure vulnerability, the Mayor's Office made the decision to move forward with the Program for the Reinforcement of Bogotá's Schools, with an initial budget of US\$200 million.

In the search for the required investment, agreement was reached in 2004 on a national project to conduct the Program to Reduce the State's Fiscal Vulnerability, which contained resources for Bogotá. This program was the result of a process of agreement between the Colombian Government and the World Bank. Thus, investments of nearly US\$80 million were guaranteed under the Bank's loan for the program to improve prioritized sites, with a large counterpart contribution by the District Government. With the budget estimated in the Sectoral Education Plan, the investments needed to reinforce and improve 201 educational centers were scheduled.

In addition to the need for reinforcement, SED found that part of the educational infrastructure was over 30 years old and in unsuitable conditions for learning. It did not meet safety and health codes or minimum standards for school construction. Because the key objective was reinforcement, it was necessary to analyze each of the structures from the standpoint of location, possibility for expansion, analysis for reinforcement and review of the property's legal

status.

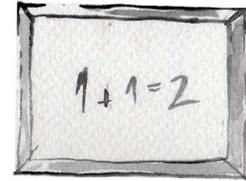
In light of the above, the Bogotá Secretariat of Education promoted efforts to improve schools through structural reinforcement, expansion and replacement. In the 2004–2008 period, the following were delivered: 106 schools reinforced, 38 expansion works, and 15 new schools to replace others.

Structural reinforcement consisted of adjusting facilities to the structural requirements needed to prevent situations of risk or catastrophe, i.e., the aim was for the structure to remain standing after an earthquake. Expansion and improvement are defined as the construction of new classrooms and complementary areas (hallways, evacuation areas, facilities, laboratories and computer rooms) that make it possible to expand quotas in official schools. The purpose is to consolidate the quality of education and thus provide better learning conditions for children and adolescents. Replacements are made in cases where it is technically and economically preferable to build a new school, rather than repair the current one.

Process

During school hours:

- To ensure that students, teachers and the rest of the educational community were not affected by the construction work, the Secretariat of Education designed several strategies that included the construction of prefabricated classrooms, the leasing of buildings, and the use of city parks and other spaces. SED also ensured that there would be no effect on the 40-week school calendar stipulated in Decree 1850 of 2002 (800 hours for preschool, 1,000 for primary school and 1,200 for middle and secondary school).



- However, relevant measures were taken to ensure the least possible disturbance for children with regard to the use of schools and the continuity of the school agenda. There were difficulties with regard to overcrowding when children were sent to other schools, and there was disagreement by parents and teachers about transfers to other schools or sharing work construction with academic activities, with effects on the educational environment (dust and noise). In light of the above, and to deal with the demand for education, it was necessary to add days, change class attendance schedules and decrease academic intensity so that the children could study adequately.

- Although these conditions were temporary, they caused discomfort in the community; they were due to the need to intervene in schools in order to benefit the city's student population. Reinforcement was a policy decision that has had a major effect on reducing earthquake risks in the city. These interventions also helped improve the quality of physical spaces and safety conditions for students. There are now adequate, safe schools for children, with proper desks, natural lighting and spaces for physical activities, laboratories, cafeterias, libraries, etc.

With regard to incorporating risk management in the school curriculum:

Familiarization with the physical conditions of schools became an opportunity to incorporate or reinforce risk management in the curriculum and to prepare School Plans for Risk Management in the schools affected. Therefore, the following were conducted: learning and recreational activities, advisory services, monitoring and follow-up of teachers and students. This training was conducted through the use of tools, instruments and methodologies design-

ned by the Secretariat of Education and DPAE that promote the incorporation of this subject in the curriculum and the implementation of the School Plans for Risk Management mentioned in this document (Pietra Terrosa campaign, PEGR, etc.).

It was also proposed that the execution of works in the schools be used to explain to students the significance of the work and the functions it fulfills; for example, columns and beams in a structure. Although it was a strategic idea aimed at showing children the need to build properly, this activity was not carried out in all schools because it was not included as a mandatory activity under the construction contracts.

With regard to construction:

- Despite the existence of a technical prioritization for interventions in order to schedule reinforcement, it was only feasible to do so if a series of prerequisites were met with respect to specific procedures: reinforcement or construction license, legality of property title, timely payment of taxes, etc.;

- Public resources can only be invested in the public sector, not in the private sector. In other words, the school had to belong to the District. It was found that many schools did not belong to SED, because works had begun informally and/or the legalization of property titles was not formalized. This was one of the most complex problems due to the time needed for processing;



Before



After



- Although the intervention priority was defined by the calculated vulnerability parameters, investment was made in the order of compliance of viabilities. Therefore, the waiting time that some schools had to experience in order to receive intervention caused annoyance. There was considerable expectation in schools;



Photos: SED

- At the time of carrying out the construction process in the structure, deficiencies were found; for example, in materials (use of improper materials), in construction (lack of support, fastening and reinforcement), and serious design problems, drastically increasing the risk of collapse, even without the occurrence of an earthquake;

- During the reinforcement process, it was necessary to replace old schools which, for technical, safety and cost reasons, had to be replaced by new constructions, so that the number of schools to be reinforced varied over time;

- During the intervention process, it was necessary to strengthen and expand the dissemination campaign on the actions that SED was conducting, in order to provide information on the project, resolve concerns and create a forum of communication with the persons directly affected. Clearly, in a program of this size, it is necessary to establish an active, ongoing communication strategy in order to correct situations in a timely manner and decrease the negative impact that the interventions may have.

Lessons learned:

The integration of risk management objectives in social policy. Because social issues were seen as being distant from disaster risk reduction, the Policy for the Quality of Life of Children and Adolescents (2004–2008) was able to bring together programs for the structural reinforcement of schools with other with other Food Security, Health Access and School Safety programs.

Comprehensive transformation of schools: the process not only made it possible to improve schools but also to legalize informal ownership, increase school quotas, expand coverage and provide adequate schools for children and adolescents, allowing them to have suitable places for learning. Beyond the inconveniences, there remained a firm commitment to improving and strengthening school infrastructure, quality and safety, regardless of the political cost this might generate.

Private schools versus public schools: although the school reinforcement program is progressing in terms of strengthening school capacity in the District, there is clearly a lesson of co-responsibility with private schools in terms of reviewing buildings and improving conditions that promote student learning.





EMERGENCY PREPAREDNESS AND RESPONSE

In accordance with the existing regulation in the city, all educational institutions must have an Emergency and Disaster Prevention Plan, which must be submitted to the Bureau of Emergency Prevention and Response (Dirección de Prevención y Atención de Emergencias, DPAE).

The key purpose of the School Plan for Risk Management (Plan Escolar de Gestión de Riesgo, PEGR) is to create greater awareness and knowledge in the educational community on the risks to which it is exposed, in order to carry out efforts to reduce these risks, eliminate them or prepare people to cope with an emergency situation.

The methodology is based essentially on the diagnostic and analysis of school risks, the formulation of short-, medium- and long-term intervention measures, and the preparation of measures to respond to an event (drills and evacuations), depending on the risk scenario identified. Training for the preparation of the PEGR has been conducted mainly on the basis of Bogotá's seismic threat and measures to mitigate it, and is complemented by the provision of a teaching guide, primers on seismic threat, floods and landslides, brochures with the "Six Master Moves" ("Seis Jugadas Maestras") corresponding to the campaign "With our Feet on the Ground" ("Con los Pies en la Tierra"), as well as guidelines on events with large-scale participation by the public.

The teaching primer or guide is called "Construction of the PEGR: School Plan for Risk Management" ("Construcción del PEGR: Plan Escolar para la Gestión del Riesgo") and is divided into chapters, as described below:

Chapter I refers to regulatory and conceptual aspects. It presents the regulations that require the Plan's preparation and its procedure, and then provides a conceptual description of the terms "threat", "vulnerability" and "risk", concluding with thoughts on risks and disasters, stemming from the following phrases:

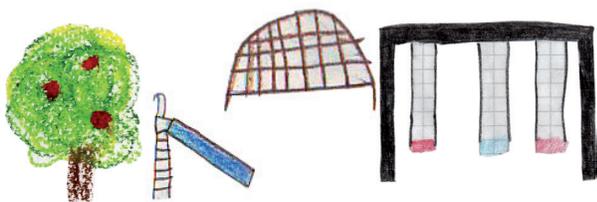
- Disasters are not natural;
- It is possible to intervene with factors that determine risks;
- Disasters are unmanaged risks;
- Risk management is a social process.

Chapter II shows how to construct the diagnostic of the educational institution through a description of the school (internal and external features, contextual framework and resources), of the risk assessment, of the construction of scenarios, and of risk maps. The objective of this chapter is to guide the construction of risk scenarios in accordance with the specific features of each school. This is not a final action because the school's situation must be subject to periodic analysis and review.

Chapter III: Risk Reduction, identifies the actions that should be taken. These conclude with a prevention and mitigation plan and with an emergency plan composed of contingency plans or plans for response to specific events. Criteria for prioritization are presented and possible actions are proposed: these can be carried out to mitigate risk factors.

Chapter IV explains how the Emergency Plan and the Contingency Plans would be implemented. The Emergency Plan is an instrument of the risk intervention efforts. This plan is composed of various response or contingency plans in the event of specific events.





The primer offers instruments, such as considerations to be kept in mind, including: the school's contextual framework; its human, technical, physical and financial resources; the risk evaluation scenario; the scenario of modification to reduce risk; and the scenario of actions to reduce risk.

This document is available at:

http://www.sire.gov.co/portal/page/portal/sire/componentes/formacionComunidad/Documentos/dpae3/cuno_1.html

Implementation process:

The Bogotá Mayor's Office, through DPAE, offers training workshops with the support of the School Plan primer. The workshop is held for four consecutive hours and is aimed at teachers, especially those who have been in a school longer and understand its unique problems concerning this issue.

Following the workshop, the institution should prepare and submit the School Plan to DPAE. This plan should contain the contextualized description of the school or educational institution, its diagnostic, efforts needed to reduce risk, and the emergency, follow-up and monitoring plan. DPAE, through experts in different localities of the city, oversees the plan's self-assessment, helps to review it and focuses mainly on the analysis and finalization of the process.

Thus, persons attending the workshop agree to: 1) act as replicators in their institution; 2) prepare the plan for their institution and submit it to DPAE, 3) make the corrections requested by DPAE; and 4) implement and update the plan annually or when required.



In the prevention month, October 2006, an evacuation drill was conducted simultaneously in 130 of the city's schools. This activity allowed for reflection on the status of preparation of students, teachers and support staff in schools. Although the drill was announced in advance, it was useful for reviewing resources, evacuation routes and school brigades. It was thus possible to conduct an analysis and make changes to the current primer for the preparation of the School Plan presented in this document.

The document stemming from the drill is available at:

<http://www.sire.gov.co/portal/page/portal/sire/capacitacionEducacion/Simulacro>

In 2008, teachers from 1,450 educational institutions participated in training workshops for the formulation of the School-based Risk Management Plan (Plan Escolar para la Gestión del Riesgo, PEGR). A total of 1,663 School-based Risk Management Plans were submitted to DPAE.

Lessons learned:

The plan itself is an instrument that makes it possible to define actions for risk reduction and preparedness for coping with an emergency. For the process to be complete, it is essential to involve the school community (students, teachers, administrative and support staff) in understanding the instrument and the role that each of them must play in the event of an emergency.

If possible, at least two drills should be conducted each year to reaffirm the knowledge and role of each person belonging to the educational community, and to evaluate the effectiveness of measures taken



under the plan (including the evacuation route, the meeting point, the organization and times required during the process).



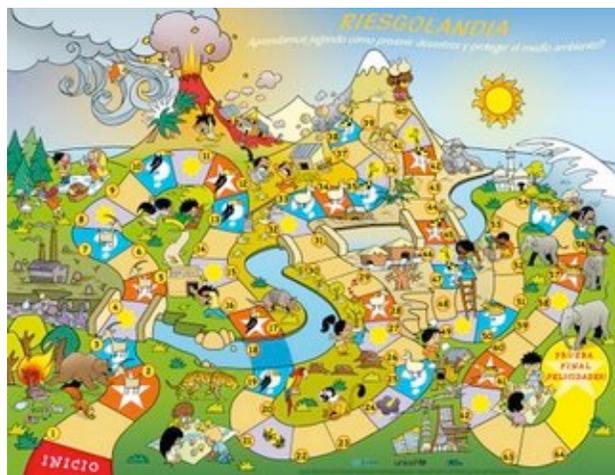
7

Didactic materials (for children and youth)

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RISKLAND: LET'S LEARN TO PREVENT DISASTERS (Riesgolandia, aprendamos jugando como prevenir desastres). 2008 Version. © UNISDR. All rights reserved.

ISDR, UNICEF, International Federal of Red Cross and Red Crescent Societies.



Riskland/Riesgolandia board game. Image: ISDR

The educational kit “Riskland: Let’s learn to prevent disasters” is the result of a joint initiative by the Secretariat of the International Strategy for Disaster Reduction (UNISDR) and the United Nations Children’s Fund (UNICEF). It was developed at the end of 2002 by ISDR’s Regional Unit for Latin America and the Caribbean, in cooperation with UNICEF’s Regional Support Office in Latin America (UNICEF-

TACRO). The kit was originally aimed at the countries of Latin America and the Caribbean and was first published only in Spanish, English and Portuguese. It has now been translated into languages such as Cakchiquel Maya, Kichwa, Papiamentu, Creole, Nepali and Bengali. It is also being translated into other languages.

The kit is aimed at children between the ages of 8 and 12, as a complement to materials already available in schools. It also includes the booklet “Let’s learn to prevent disasters”, with basic information on natural threats and risk reduction, and the board game “Riskland” on disaster prevention, with educational messages that help children understand which good practices can decrease the impact of disasters and which poor practices can increase vulnerability.

The game consists of a board on which players follow a twisting path with an attractive landscape, showing different educational details along the way; dice; a different token for each player; 48 question cards and 48 surprise cards including educational messages that help children understand which good practices can decrease the impact of disasters and which poor practices can increase our vulnerability. The game can be easily adapted to the circumstances of each country or community in terms of the type of threats and also to different sectors (environment, health, etc.). The content of the surprise and question cards can be changed or adapted; for this purpose, 24 blank cards have been added for new surprises and questions.

Giant Riskland

This large format of the game is designed for the purpose of organizing activities in large or open spaces such as a large classroom, a schoolyard or



Giant Riskland. Photo: Plan Internacional.



playground, camps, gymnasiums, etc.

Lottery! Let's play and learn to prevent disasters (Fichas ¡Lotería! Juguemos a prevenir desastres) National Coordinating Office for Disaster Reduction (Coordinadora Nacional para la Reducción de Desastres). Guatemala

The game is aimed at children between the ages of 6 and 10. It contains a series of riddles and game pieces to help children easily identify the threats and risks of disasters in their community and the elements of prevention, such as warning signals and adequate emergency management.

The Disaster Changes Color (El Desastre se Pinta de Otro Color)

UNICEF and the Salvadoran Foundation for Health and Human Development (Fundación Salvadoreña para la Salud y el Desarrollo Humano, FUSAL)

El Salvador

This material can be used as coloring books so that teachers or persons in charge of caring for children and adolescents can support activities related to the prevention of accidents and disasters. The coloring books will aid in learning how to avoid accidents or disasters.

The Disaster is Over and Everyone Lives Happily Ever After (Colorín Coloreado el Desastre se ha Acabado) UNICEF and the Salvadoran Foundation for Health and Human Development (Fundación Salvadoreña para la Salud y el Desarrollo Humano, FUSAL). El Salvador

The objective of this support material for the conduction of risk management activities is to inform children, through coloring-book stories, about the dangers to which they are exposed and the adequate management of risk in order to prevent disasters in their community.

These recreational materials are available in .pdf format on the website of the United Nations Educational, Scientific and Cultural Organization.

<http://www.unesco.org/>

Information on these and other recreational materials, and on the HFA, is available on the website of the Regional Unit for the Americas, of the United Nations International Strategy for Disaster Reduction (UNISDR).

<http://www.unisdr.org> (English)

<http://www.eird.org> (Spanish)

<http://www.unisdr.org/eng/hfa/docs/HFA-brochure-Spanish.pdf>





Photo:
DPAE.



Pietra Terrosa Campaign
Bureau of Emergency Prevention and Prevention
(Dirección de Prevención y Atención de Emergen-
cias [DPAE], Bogotá, Colombia)

At the end of 2008, DPAE launched the learning campaigns “Sing with Pietra Terrosa” (“Canta con Pietra Terrosa”) and “Pietra Terrosa’s week with the family” (“Una semana de Pietra Terrosa en la familia”) for preschool and second-grade students, respectively. The campaigns use learning and recreational tools such as stories, felt dolls, logbooks, children’s songs and puppets to help teachers create suitable learning environments that encourage children to internalize knowledge about natural phenomena and emergency events, simple measures to reduce risk factors in everyday places, and basic behaviors for self-protection.

The recreational activity “Canta con Pietra Terrosa” (“Sing with Pietra Terrosa”) for preschool students uses puppets and children’s songs and deals with self-protection in the event of natural and socio-natural phenomena. First, the staff appointed by DPAE sings and dances with kindergarten teachers and students. Next, the songs become part of the daily classroom routine so that their methodology supports the teacher’s efforts while their content contributes to the objective of changing students’ conduct toward permanent self-protective behavior. The process was initiated in 20 kindergartens.

The activity “Pietra Terrosa’s week with the family” (“Una semana de Pietra Terrosa en la familia”) includes a visit to the students’ homes to write stories together with their parents. The activity is conducted in two parts. The first, guided and directed by an adviser, has the objective of raising the awareness of students in each school about the subject of natural

Stories for children: Pietra Terrosa Collection
Mayor’s Office of Bogotá

This collection uses storytelling to teach children about the characteristics of phenomena that cause threats, vulnerabilities and the consequences of disasters. For teaching purposes, consideration is given to mitigation and prevention measures through characters represented by animals. These characters, depending on their particular features, symbolize different types of human behavior. The collection contains four stories:

- The day that Pietra Terrosa moved.
- The day that Pietra Terrosa got wet.
- The day that Pietra Terrosa rolled.
- The day that Pietra Terrosa got electrocuted.

On the website of the Bogotá Information System for Risk Management and Emergency Response (Sistema de Información para la Gestión de Riesgos y Atención de Emergencias de Bogotá, SIRE), visitors can view stories and access various functions: read online or re-read a page, and print the selected story <http://www.sire.gov.co/portal/page/portal/sire/capacitacionEducacion/Cuentos/Simulacro>

A recreational site for children, with a game on landslides and floods and a coloring book: <http://www.sire.gov.co/portal/page/portal/sire/capacitacionEducacion/Juegos>



Photo: DPAE.

and socio-natural risks. The second is conducted in the home, with the family's involvement, to identify and increase understanding of specific risks. Students take home the Pietra Terrosa doll, the stories about each of the threats, and a logbook or notebook in which they should record group ideas and a drawing about the experience. This activity has begun in 20 of the District's schools and includes around 600 second-grade students.

The tower of prevention (La torre de la prevención) Bureau of Emergency Prevention and Prevention (Dirección de Prevención y Atención de Emergencias [DPAE], Bogotá, Colombia)

To begin, a series of sticks are provided, set up in such a way that they form a stable structure. In the game, each player removes the sticks, one by one, until the structure collapses. Each stick is imprinted with useful advice (6 master moves for schools) on measures to reduce earthquake risk. Each time the children remove a stick, they have to read what it says. In 2006, a tournament was held, with the participation of the District's various schools, and received good coverage.



Website: Bogotá with its feet on the ground (Bogotá con los pies en la tierra)

Bureau of Emergency Prevention and Prevention (Dirección de Prevención y Atención de Emergencias [DPAE], Bogotá, Colombia)

www.conlospiesenlatierra.gov.co

This website is mainly focused on disseminating knowledge and prevention and mitigation actions, and on providing information and education on the city's earthquake risk. In terms of children's activities, it presents videos on prevention: "To prevent is to live" ("Prevenir es vivir"), "Earthquakes and To prevent is to live" ("Sismos y Prevenir es vivir") and "Bogotá and its threats" ("Bogotá y sus amenazas"). The videos show means of self-protection from the city's different threats through the use of comic strips. Available tools include:

- A coloring book that can be downloaded, illustrating prevention efforts;
- The "Pietra Terrosa" story;
- The "Earthquakes" booklet;
- The game "Play prevention with me" ("Juega conmigo a prevenirte"). This game visits different scenarios (bedroom, kitchen, living room and neighborhood), identifying simple means of self-protection in the event of earthquakes and fires and at the same time forming an emergency kit;
- A comic strip: "To prevent is to live: Let's shake in a quake" ("Prevenir es vivir: Sacudámonos ante un sismo").

The strategies implemented to prevent earthquake risk include the campaign "Bogotá with its feet on the ground", which insists on the "6 master moves", each expressed specifically for the home, the school and the workplace.



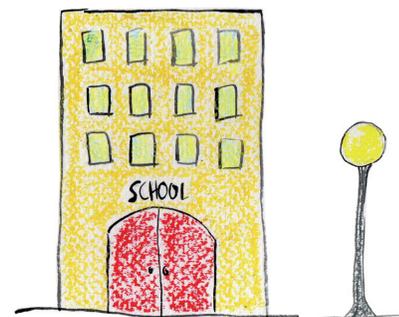


Photo: DPAE.

**Primer on threats and their impacts
Bureau of Emergency Prevention and Prevention
(Dirección de Prevención y Atención de Emergen-
cias [DPAE], Bogotá, Colombia)**

In order to clearly and simply demonstrate the threats that occur in the city, DPAE prepared a series of primers that not only explain the causes and consequences but also how to identify the threat. They also offer recommendations for prevention and mitigation. Primers have also been prepared on floods, landslides and earthquakes.

A lengthy bibliography on the subject of disasters in Latin America and the Caribbean is available in digital format on the website of the Regional Disaster Information Center (Centro Regional de Información sobre Desastres, CRID).
<http://www.crid.or.cr/>



List of Acronyms and Abbreviations

CAN: Andean Community of Nations (Comunidad Andina de Naciones).

CAPRADE: Andean Committee for Disaster Prevention (Comité Andino para la Prevención de Desastres).

CECC: Central American Office of Educational and Cultural Coordination (Coordinación Educativa y Cultural Centroamericana).

CEPREDENAC: Coordination Center for Natural Disaster Prevention in Central America (Centro de Coordinación para la Prevención de los Desastres Naturales en América Central).

CONRED: Guatemalan National Coordination Office for Disaster Reduction (Coordinadora Nacional para la Reducción de Desastres de Guatemala).

CRID: Regional Center for Disaster Information (Centro Regional de Información para Desastres).

CUSE: USAID/OFDA School Safety Course.

DINA: National Bureau of Engineering and Architecture (Dirección Nacional de Ingeniería y Arquitectura) of the Ministry of Education of Panama.

DIPECHO: Disaster Preparedness Program of the European Commission's General Office of Humanitarian Aid.

DNIE: National Bureau of Infrastructure (Dirección Nacional de Infraestructura Educativa) of the Ministry of Education of El Salvador.

DPAE: Bureau of Emergency Response and Prevention (Dirección para la Atención y Prevención de Emergencias), Office of the Mayor of Bogotá, Colombia.

EAPAD: Andean Strategy for Disaster Prevention and Response in the Andean Community (Estrategia Andina para la Prevención y Atención de Desastres en la Comunidad Andina).

ECHO: The European Commission's General Office of Humanitarian Aid.

EDUPLANhemisférico: Hemispheric Action Plan to Reduce the Education Sector's Vulnerability to Socio-Natural Disasters (Plan de Acción Hemisférico para la Reducción de la Vulnerabilidad del Sector Educativo a los Desastres Socionaturales).

HFA: Hyogo Framework for Action.

IDNDR: International Decade for Natural Disaster Reduction.

IFRC: International Federation of Red Cross and Red Crescent Societies.

INEE: Inter-Agency Network for Education in Emergencies.



ISDR: United Nations International Strategy for Disaster Reduction.

MINED: Ministry of Education (Ministerio de Educación) of El Salvador.

MINEDUC: Ministry of Education (Ministerio de Educación) of Guatemala.

MEDUCA: Ministry of Education (Ministerio de Educación) of Panama.

NGO: Nongovernmental Organization.

OAS: Organization of American States.

OAS/DSD: OAS Department of Sustainable Development.

OPS/OMS: Organización Panamericana de la Salud/ Organización Mundial de la Salud (see PAHO/OMS below).

PAHO/OMS: Panamerican Health Organization/World Health Organization.

PCESRD: Central American Plan for Education on Risks and Disasters (Plan Centroamericano de Educación sobre Riesgos y Desastres).

PCRRSE: Central American Plan for Risk Reduction in the Education Sector (Plan Centroamericano para la Reducción de Riesgos en el Sector Educación).

PRECA: Central America School Retrofitting Program (Programa de Readequación de Escuelas de Central America).

PREDECAN: Project for Support to Disaster Prevention in the Andean Community (Proyecto Apoyo a la Prevención de Desastres en la Comunidad Andina).

PLANERRYD: National Education Plan for Risk and Disaster Reduction (Plan Nacional de Educación para la Reducción del Riesgo y los Desastres).

PRRD: Regional Plan for Disaster Reduction (Plan Regional de Reducción de Desastres).

SDPAD: District-level System for Emergency Prevention and Response (Sistema Distrital de Prevención y Atención de Emergencias), Office the Mayor of Bogotá, Colombia.

SICA: Central American Integration System (Sistema de Integración Centroamericano).

UN: United Nations.

UNDP: United Nations Development Programme.

UNEP: United Nations Environment Programme.

UNFPA: United Nations Population Fund.

UNICEF: United Nations Children's Fund.

UNOCHA: United Nations Office for the Coordination of Humanitarian Affairs.

USAID/OFDA: United States Agency for International Development/Office of U.S. Foreign Disaster Assistance.

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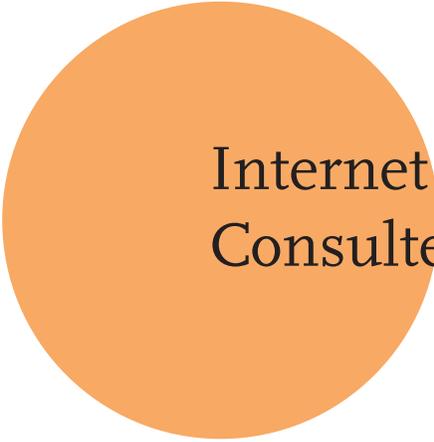
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