



SAFE SCHOOLS IN SAFE TERRITORIES

REFLECTIONS ON THE ROLE OF THE EDUCATIONAL
COMMUNITY IN RISK MANAGEMENT



EUROPEAN COMMISSION



Humanitarian Aid





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We are deeply grateful to our consultant Gustavo Wilches-Chaux for the enthusiasm and commitment he has demonstrated in producing the current document.

We sincerely hope this publication will be of use to you in your everyday activities, and that it will inspire your reflection of, and commitment to, the issues covered in these pages.

Preface

*This document was produced within the framework of the DIPECHO project ‘**Strengthening Local Risk Management in the Educational Sector in Central America**’ executed by the Central American Educational and Cultural Coordinator (CECC) with the technical support of the United Nations Children’s Fund (UNICEF) and the International Strategy for Disaster Reduction (ISDR). The document is aimed at authorities, teachers, technicians and co-operating institutions working on the issues of risk reduction in the educational sector. The document aims to prompt reflection on what exactly constitutes as a **safe school**: offering a resistible infrastructure in the event of a disaster or one that will also ensure the child’s right to education in an emergency situation.*

The preliminary version of this document underwent an electronic revision process (by Internet and e-mail, and a face-to-face revision and validation meeting in Panama City on 9th May 2008.

Comments and ideas from both the electronic and face-to-face revision processes have been accepted and incorporated into this final version.

*The document is divided into five chapters. The **first** refers to the World Campaign for Disaster Reduction 2006-2007 **Disaster Risk Reduction Begins at School**, promoted by the UN/ISDR Secretariat and its partners. This campaign seeks to inform and mobilise governments, communities and individuals on the importance of disaster risk education and the need for safer school buildings, providing some key activities and messages to be implemented.*

***Chapter two** presents the **conceptual tools**, providing definitions of the terms used, and explaining how they have developed over the years. This section explains the meanings of the terms used in the document, including: school, safety, territory, hazard, vulnerability, risk and disaster as well as listing the types of hazards and their main causes.*

***Chapter three** offers a broad reflection on **factors that determine the degree of safety and security of a territory**, where the term ‘**territory**’ is defined as the outcome of the ongoing interaction between human communities and the ecosystems of which they form a part of, or with which they are related to in some way.*

***Chapter four** deals with the **school itself and the structural factors**, described here as the ‘**hardware**’ of education – this includes the buildings where school is held, the furniture and equipment, and, of course, the quality and regularity of maintenance given to the various elements. The non-structural factors are also discussed, that is, the education ‘**software**’ – including the school’s perspective on the world, on human beings (especially its own students and teachers), on the teaching and learning process, relationships between the community and the school itself.*

Chapter five, the last chapter, discusses some other issues that are generally overlooked or those where very little action has been implemented: **the school as a promoter of territorial safety**. There are reflections on the importance of a continued quality education in disaster situations, the potential contribution of the school to the post-trauma normalisation process and the implications of using the school as a shelter in the event of a disaster.

The document closes with **important reflections on cultural belonging in ethnic communities** and on **ethno-educational processes** built on the basis of there being no separation between the daily life of the community and school life. Children's learning is viewed as an exercise in direct and ongoing communication with members of the community who are considered wiser because of their knowledge, their age or their function within the group.

Introduction

Being a child, an adolescent or even an adult, of any age, is not easy in the present day.

We adults do not have the answers to the questions asked by those younger than ourselves. (To be honest, adults of any generation have never had all the answers – a situation aptly expressed in the graffiti: ‘Just when you think you have got all the answers, they change the questions!’)

In any event, the speed at which events take place and situations change is always a surprise to any generation. When talking of climate change, for example, the effects we were told to expect in the medium or long term are already a tangible reality we live with everyday. The same is true of other risks and disasters not necessarily attributable to climate change, and of other processes, like the food crisis which is affecting an ever a larger percentage of the World's countries as I write.

Or the increasing tensions between world powers that could lead to new local outbreaks of a Cold War that - as we will explain later on - has not ended, but has simply been redefined with a new diversity of forms, interests and actors.

It is as if humanity were unavoidably approaching its nemesis, having to answer for what our presence has meant for the Earth.

Those of us, who are adults today, not to mention previous generations, have failed to fulfil the ‘intergenerational responsibility’ that forms the underlying essence of sustainable development. This unsatisfactory performance can be summed up as us effectively ‘leaving our unpaid bills for future generations’.

What can we do today, at this stage of the crisis, when we are already aware that the effects of our past errors will continue to impact on the planet for several decades?

Along with our actions to correct these mistakes, we must also provide those who come after us on the Earth with all the analytical evidence and tools they will need to prevent these errors from being repeated in future.

Safe territories and safe schools are not those free of risks, but those with sufficient resistance and resilience to avoid disasters or to recover from them.

And together with the children and adolescents of today, it is our duty to design the tools needed to manage the inevitable uncertainty in a creative manner. We must learn to live with chaos, which is not necessarily a negative element, but rather an intrinsic order of the natural processes beyond human control.

In this process, education naturally fulfils a leading role. This includes both formal education in the school setting and the non-formal and informal education that extends outwards, sometimes imperceptibly, into public information and the media.

*The school, or education centre, forms one of the privileged backdrops of the teaching and learning process. Consequently, both physical and structural elements, and administrative and pedagogical processes, must be shaped to offer a **safe setting** to all members of the educational community: an environment where independence and hope can take root alongside the self-confidence needed to go out and transform the world.*

Figures on the number of children who have lost their lives or have been seriously impacted by a recent disaster, provide a weighty argument for insisting not only on the need to advance towards the construction of territories that offer integrated and true safety and security to their inhabitants, but also to alert decision-makers on the serious implications of not doing so in a timely and appropriate manner. Schools and their occupants also figure amongst those who pay the price for wrongful decisions on how development should be conceived and executed.

Despite the seriousness of the current panorama, the general message of this document is one of optimism, or rather, of confidence in the capacity of life and of people. It is inspired by the philosophy summarised in the speech entitled 'Risk management: from the duty to hope to the responsibility for a miracle', (a demonstration of confidence in the power of life) that we include as an introduction to Section II Conceptual Tools.

* * *

As can clearly be seen, this document is far from being an exhaustive treatise on an issue with an increasing number of implications and ever extending coverage. UNICEF, the International Strategy for Disaster Reduction (ISDR), and the many other national or international organisations whose staff may read these pages, have carried forward, and are today carrying forward, educational processes that reinforce the safety and security of schools and educational communities - not only in terms of the risks generated by natural dynamics, but also those of other origins that can sometimes have more serious and immediate impacts. Generally speaking, in countries like ours, we cannot afford the luxury of proposing risk management exclusively related to processes resulting from natural phenomena.

As a result of that stated above, this is an open text, which will become more useful and meaningful in direct correlation to how the reader answers the call to enrich the document through their own reflections and practice.



Photo: © UNISDR/Lydia Lopez

DISASTER RISK REDUCTION BEGINS AT SCHOOL





Photo: © UNISDR

1 • An Inaugural message for the 'Disaster Risk Reduction Begins at School' campaign¹

Salvano Briceño

Director of the International Strategy for Disaster Reduction (ISDR)

When there is a natural hazard, children are one of the most vulnerable groups, and especially those who are at school when the disaster strikes.

The earthquake in Pakistan in October 2005 - where more than 16,000 children died as schools collapsed - or the recent mudslides caused by floods on Leyte Island in the Philippines - with 200 students buried alive - are just two tragic examples of why more needs to be done to protect our children before disaster strikes.

Children represent the hope for the future in all societies. Because of their direct link with young people schools throughout the world are therefore considered institutions of learning that instil cultural values and pass on both traditional and conventional knowledge to the younger generation. As a result, the protection of our children during natural hazards requires two different but inseparable priorities for action: disaster risk education and school safety.

¹ Inaugural message of the Campaign launched on 15 July 2000 in Paris by the International Strategy for Disaster Reduction (ISDR). Partners in the Americas include: UNISDR, UNICEF, the International Federation of the Red Cross and the Red Crescent and the NGO Plan International.

Making disaster risk education part of national primary and secondary school curricula fosters awareness and better understanding of the immediate environment in which children and their families live and work. We know from past experience that children who are taught about the risks of natural hazards play an important role in saving lives and protecting members of the community in times of crisis.

When the Tsunami struck Thailand in December 2004, 11 year-old British schoolgirl, Tilly Smith, saved many lives by urging people to flee the shore – she had been taught how to recognise the first signs of a Tsunami in her geography lessons back home in Britain.

At the same time, Anto, a boy on the Indonesian island of Simeulue had learned what to do in an earthquake from his grandfather. He and all the other islanders ran to higher ground before the Tsunami hit the island and all but eight were saved.

In most societies, in addition to their essential role in formal education, in normal times, schools serve as an assembly point for the community and the location for group activities. And in times of disaster they become makeshift hospitals, vaccination centres or shelters. Yet, hundreds of millions of children across the developed and developing world attend schools in buildings that are unable to withstand the forces of nature.

In order to inform communities and ensure their future, the UNISDR secretariat and its partners have made disaster risk education and safer school facilities the two key themes of the 2006-2007 World Disaster Reduction Campaign. The '**Disaster Risk Reduction Begins at School**' campaign aims to inform and mobilise governments, communities and individuals to ensure that disaster risk reduction is fully integrated to school curricula in high risk countries and that school buildings are built to withstand natural hazards.

As disaster risk reduction is in the interests of us all, we invite you to join the UN/ISDR secretariat and its partners in this global campaign. Together, we can help children work, with us and for all of us, to build a safer world. It is schools that make the difference.



Photo: ©UNICEF-TACRO

2. Disaster risk reduction in the educational sector in Latin America and the Caribbean²

The expansion of disaster prevention in the educational sector in Latin America and the Caribbean began more systematically in the 1980s. International bodies supported the implementation of activities that mainly included: simulations, the development of emergency preparedness plans in schools, techniques for the assessment of damage and need, crisis intervention, training for teachers, pupils and administration personnel, the physical protection of schools.

These activities were undertaken through the coordination of civil defence institutions, emergency and contingency offices, education ministers in conjunction with schools and other authorities within the education sector.

There is widespread acceptance amongst disaster risk reduction staff in the international community of the need to foster a culture of prevention built on the pillars of education from the primary level up. Many countries have been working on aspects of preparedness, including the production of school emergency preparedness plans, for more than a decade.

However, similar advances have not been made conceptually and methodologically on the links between disaster risk prevention education and environmental management and education. The situation for development management in the countries of Latin America and the Caribbean is even worse.

Despite the achievements, education for disaster risk management and disaster prevention continues to be treated as an isolated issue in schools, unrelated to the day to day risks faced by the vulnerable populations of Latin America and Caribbean. Consequently, it is vital that all forms of education - formal, non-formal and informal - provide greater emphasis on analysis, reflection and action on the causes of disasters and their links with risk and development models.

This regional vision was reinforced in January 2005, at the World Conference on Disaster Reduction in Kobe, Hyogo, Japan, where 164 governments, United Nations and regional institutions, local authorities, non-governmental organisations, experts in the field, and international financial institutions made commitments to work for disaster risk reduction, signing up to the Hyogo Framework for Action 2005-2015.

The Framework for Action adopted by the governments' states that it will aim to 'use knowledge, innovation and education to create a culture of safety and resilience at all levels' as one of the five priorities for action over the coming 10 years. The inclusion of disaster risk reduction in formal and non-formal education is one of the key objectives.

² The author is especially grateful to Ruth Custode for her assistance in producing this part of the document.

3. Main disaster risk reduction activities corresponding to the education sector

- Promote the inclusion of disaster risk reduction knowledge into study plans at all levels.
- Promote the use of formal and informal channels to reach children and young people with information on disaster risk reduction.
- Promote the integration of disaster risk reduction as an intrinsic element in the Decade of Education for Sustainable Development.
- Promote the integration of disaster risk reduction directly aimed at specific sectors into educational programmes.



Photo: © UNISDR/Yesenia Guzmán

4. Central messages of the 'Disaster Risk Reduction Begins at School' campaign

School safety: a social responsibility

Society has the ethical responsibility to guarantee that a school is able to provide a safe learning environment for the whole school community. Despite the fact that the future of any culture or society is dependent upon the quality of life provided to its child population, children are generally the most vulnerable members of the community and they are exposed to unacceptable levels of risk. This frequently occurs even within schools, in spaces that should guarantee them protection and adequate conditions in which to fully exercise their rights as children and as human beings.

Education is prevention

When communities are aware of the hazards to which they are exposed, the way they are contributing to new risks and, above all, the capacities and resources they have available to counter these, they increase their chances of preventing disasters, or at least of reducing their impact. All educational efforts aimed at disaster risk prevention, are in fact actions for development and for life. The better the levels of education and organisation in the community, the better their capacity to prevent, reduce and mitigate risk factors, and to recover from the effects of disasters unleashed by natural phenomena or human actions.

Prevention is transformation

All risk reduction and disaster risk prevention initiatives contribute to making communities safer places, better prepared to respond to any hazard. It is immaterial whether they are large or small, urban or rural; all communities that receive disaster prevention input are contributing positively to their own transformation.

Prevention is investment

Disaster prevention is not only an important humanitarian action, but it is also an investment that encourages the development of communities, their infrastructure, their economy, their heritage and their history. It also constitutes a saving, for it is far more efficient to reduce risk than to replace the losses caused by disasters.

Fostering alliances is risk reduction

Communities are not alone in their disaster risk prevention efforts. Alliances between local associations, government institutions, education centres, international bodies, humanitarian aid organisations and so on, constitute one of the greatest contributions to disaster risk reduction processes and, at the same time, to the development of communities. The synergy and complimentary work between these and other non-explicit actors facilitate efforts to build safer and better prepared communities. Coordinated efforts reduce the vulnerability and strengthen the capacities of those participating in these alliances.

In Guatemala, for example, a national education council for disaster risk reduction was formed to provide an opening for dialogue and to unify educational efforts on disaster issues. The Council was made up of various governmental institutions, non-governmental entities and private members, organised into four working groups with support from UNICEF Guatemala, namely: curriculum presence, teacher training, educational infrastructure and social communication. As a result of these efforts, teaching tools have been created and procedures and mechanisms established which are used in various environments and at different educational levels in the country.

Prepared schools: safe schools

Some of the key alliances for risk reduction are those woven into and within the educational sector. Teachers are important agents in community development in all countries. They interact with children and parents, making them into excellent transmitters of the principles and tools of risk management. All initiatives that contribute to making schools safer places, better prepared to confront disasters, pass through their hands and those of their students.

Disaster prevention is also a children's issue

Children are not just receptors of disaster prevention information. With appropriate guidance from their teachers and other members of the educational community even the smallest child can become an important source of information to their family and community. In school, they must be made to feel that disaster risk reduction is a shared responsibility and, above all, something that will help protect their lives.

'Disasters can't come into school'

This statement is currently an ideal, but it could become a reality if the necessary efforts are made by all actors and sectors of society: schools could declare themselves 'disaster-free areas'. This is no simple task, but ongoing and systematic work in this direction could make a great difference. Teachers and the educational community in general, in alliance with other organisations, can incorporate disaster risk reduction into educational curricula, organising school brigades and generating community strategies to make schools into safe and protected places. These can also spread safety and protection outwards toward the rest of the community.

Basic commitments to children in emergency and disaster situations, on the basis of the Convention on the Rights of the Child and other international norms and standards:

Children generally tend to go 'unnoticed' during emergencies. The data on the population affected is not disaggregated by age and gender and children are not prioritised in the provisions of goods and services. This makes it difficult to provide them with differentiated responses, a fact that, in turn, results in a lack of full respect for rights set down for children under international law in these situations. These norms, especially the Convention on the Rights of the Child, must not be viewed as mere abstract declarations, but considered as important 'guidelines for action' in disaster situations.

The 'Stan unit' was created during tropical storm Stan on 5th October 2005, in Guatemala. This unit registered, monitored and followed-up information on cases of unaccompanied, separated and orphan children, coordinated and systemised information for various institutions and directed the mobilisation of existing resources, actions and capacity.

The Right to Education in emergency or disaster situations³

- To ensure access to learning and quality education for all children and communities affected, emphasising the needs of girls as their particular needs tend to remain invisible or be overlooked.
- To achieve a situation where schools provide a safe and protective environment for children.

During an emergency, when the educational process is interrupted for days and months or indefinitely, it is necessary to:

- Establish provisional learning spaces
- Recommence schooling through the rapid reopening of schools and the prompt reintegration of students and teachers
- Supply adequate teaching and learning materials
- Work to provide spaces and materials for leisure activities

The commitment to children directly or indirectly affected also implies that the following elements should be in place when schooling resumes:

- Facilities for access to classes
- Teachers available
- Re-establishment of social programs (nutrition, health, water, etc)
- Strategies to avoid potential additional costs hampering the re-establishment of school activity
- Materials and equipment to facilitate a quality education



Photo: © UNICEF-TACRO

³ Working Group to identify collaboration tools and mechanisms for the inclusion of disaster risk reduction management into the educational sector in Latin America, Claudio Osorio, UNICEF/TACRO

The above can be achieved through a combination of initiatives and strategies that include the participation of children and the educational community in general, in disaster management activities in both normal conditions or in the event of a disaster. Such actions can include: the development of school and sector preparedness; prevention and mitigation tasks and activities (including the physical reinforcement of school buildings); the creation of school risk management plans linked to local emergency plans, containing explicit description of the acceptable use of school buildings in emergency situations and other issues covered in this publication.

The re-establishment of school activities following a disaster must be a priority for the educational sector and for the community in general, amongst other reasons, because it constitutes one of the most important elements of the normalisation process.



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CONCEPTUAL TOOLS

'Risk Management: from the duty to hope to the responsibility for a miracle'



1. The Conceptual Framework: 'Risk Management: from the duty to hope to the responsibility for a miracle' ⁴

The river has taught me to listen, from it, you will learn as well. It knows everything, the river, everything can be learned from it. See, you've already learned this from the water too, that it is good to strive downwards, to sink, to seek depth.

Hermann Hesse, 'Siddhartha'

Exactly 8 days ago it was 25 years since the earthquake that destroyed Popayán, my home city in Colombia, at 8:15 in the morning on 31 March 1983. This event divided the history of the city and those of us who form part of it into two distinct sections: BTE (Before The Earthquake) and ATE (After The Earthquake).

In the 18 seconds of the main quake I first came into contact with the field of human activity today known as risk management or disaster risk management, and which, at the time, was exclusively limited to strengthening the capacity of a society, and especially the authorities and rescue services, to respond to a 'sudden' and 'unexpected' emergency.

The Popayán earthquake put the issue of disasters on the national agenda for the first time. Not long before, on the 12th December 1979, a tidal wave and tsunami had struck the Colombian coastal city of Tumaco, a city that had felt the impact of one of the strongest earthquakes in history off its coast in 1906. But for reasons I shan't go into here, this event and its consequences did not move the inhabitants of Colombia, nor generate the same national and international reaction as was provoked by the Popayán earthquake.

Three types of professionals exercised exclusive rights over events known, then as now, as 'natural' disasters: geologists and seismologists, structural engineers and members of the rescue services. Those of us operating in other areas of the social sphere were relegated to the role of spectators.

I personally had the good fortune to have been the Regional Director of SENA since 1978, one of the Colombian government institutions responsible for the professional or 'productive employment' training of various individuals and sectors of Colombian society. The nature of the Department of Cauca, where Popayán is the capital city, meant our main clients were communities in urban and rural areas, many of whom were directly impacted by the earthquake.

Only a few hours after the earthquake struck, many people started to rebuild their homes using the little knowledge and few resources they had to hand. In SENA, we had no experience of disaster related issues, but we did have 25 years of experience in training workers and accompanying grassroots communities, and we realised that our function at that time should be to support the people rebuilding their homes with their own hands and to make sure they did this appropriately.

⁴ Gustavo Wilches-Chaux speech given at the Provention Global Forum (Panama, April 8, 2008). The Provention Consortium is a world coalition of international organisations, governments, private sector interests, civil society organisations and academic institutions aiming to increase safety and security in vulnerable communities and to reduce the impact of disasters. It offers openings for dialogue between various actors and sectors in order to establish guidelines for collective action. The Provention Headquarters can be found at the International Federation of the Red Cross and Red Crescent, at: <http://www.proventionconsortium.org/?pageid=1>

Nor did Cauca SENA know much about 'anti-seismic' or 'earthquake resistant' building, but someone brought along a leaflet produced for the 1972 earthquake in Nicaragua and we were given the support of SENA building instructors from other regions of the country and an international institution contracted by USAID for the purpose. (The first version of the Colombian Code for Earthquake Resistant Constructions was published in 1984 as a result of the Popayán earthquake).

For many of those present, the names Intertect and Fred Cuny will be familiar. I would like to take this opportunity to pay respects to his memory. The relatively brief passage of Cuny and his team through Popayán not only taught us to build houses capable of withstanding earthquakes, but also left us with unforgettable lessons on the value and effectiveness of subtlety, of silent accompaniment and the low profile an external consultant should assume when circumstances put them in the midst of communities in crisis. One of the most important (but not obvious) of these lessons was the strengthening of 'coping mechanisms' within the community, instead of replacing them with overwhelming interventions from outside; an outside that begins on the boundaries of the community that has been affected whether nearby or far away.

When Cuny was in Popayán he had not yet published his book 'Disasters and Development' (that I later had the pleasure of translating), nor did we know it was already written and at the publishers. But the impact of the book could already be felt when we realised how deeply we had been influenced by his 'quiet support' after he left us. (When I looked in the dictionary to find the best way to write 'quiet support' I found a magnificent definition: 'to endure bravely or quietly').

While working in the SENA regional office, the General Director - who also deserves recognition⁵ supported us in 'a total redefinition' of ourselves as people, as officials and as an institution in order to respond to the challenges generated by the disaster. We started to ask ourselves, and others, a question that now appears almost ridiculous given the nature of the earthquake that unleashed the disaster.

⁵A special mention is due to Alberto Galeano and Jaime Ramírez, SENA General Director and Sub-Director of Social Policy respectively at the time, and to recall the commitment of all Cauca SENA officials and the rest of the team in the General Management and all the regional offices of the country. Our argument from Popayán was that the 'normality' in which our institution in Cauca had been designed had been toppled by the earthquake and it was meaningless for SENA (whose head office in the historic centre of Popayán had also been destroyed) to attempt to remain untouched. Consequently, we requested a suspension of the normal operation of the institution, transforming the organisational structure and suspending normal training programmes to substitute these with others specifically designed to meet the new challenges of accompaniment of communities and training for their members'. General Management granted us permission to proceed and supported decisions on policy, economic and technical resources, creating the conditions for SENA offices from regions across the country to provide us with instructors and allocate us their vacant posts so that we could take on the extra staff needed in the disaster zone. The details of this process can be found in the book 'Herramientas para la Crisis: Desastre, Ecologismo y Formación Profesional', written by myself and published by SENA in 1989. The article 'La Vulnerabilidad Global' was published for the first time as a chapter in this book.

The question was: **Why did Popayán fall?**

Behind the intellectual audacity of this question lays the 'perverse influence' of Ian Davis, whose book 'Shelter after Disaster' fell into our hands, in the days following the earthquake, presenting us for the first time with the proposition (implicit or explicit, I don't remember now) that disasters are not natural events.⁶

They say that you should expect a stupid answer to a stupid question, and in fact, when we asked this the most common answer was: "What, didn't you feel the strength of the quake?"

However, contributions from very many people, from many disciplines and different sources who were asking themselves the same question, helped us to understand that the earthquake needed an enormous quantity of what criminal lawyers would call 'necessary accomplices' in order to cause such enormous destruction. We also realised that although the absence of seismic resistant technology in modern buildings and the many modifications made to colonial structures over the years had diminished their capacity to resist the quake, these were not the only factors that had combined with the earthquake to produce the disaster. There were many more reasons of an economic (some related to poverty, but some to the poor investment of resources), organisational, political, institutional, ecological, cultural and ideological nature that helped explain why we were experiencing a disaster at that time.

That is where I first developed concept of 'global vulnerability' that later formed part of the collective imagination of those of us in the world of risk management, particularly after Hurricane Mitch had stormed through Central America and Allan Lavell had greeted the concept with generous enthusiasm.

In one of those intuitive exercises my compatriot Orlando Fals Borda calls 'participatory action research' where we accompanied men and women from other social sectors to build or re-build their homes and to find new jobs, we started to discover some points that would later allow us to construct a 'disaster philosophy'.



Photo: AHOJ Venencia

⁶ The first book of this title was compiled and edited by Andrew Maskrey and published by LA RED in 1993. In some way this book was the first presentation of our organisation in society.

For example, we realised that although in principle the physical reconstruction of houses was the main objective for everyone involved in the process - ourselves, the public institutions and the affected communities themselves – in the end the rebuilt house became exclusively a **useful by-product** of the process, with the main outcome lying in the human, individual and collective transformation of those forming part of the effort: the mother and head of a family who had never laid a brick before and who realised she could build her own house and help her neighbours to rebuild theirs; the community that discovered unexpected inner potential; the government entity and officials who began to understand what 'community participation' was really about... and our enjoyment at the exceptional opportunity of disassembling and totally rebuilding a public institution, in order to put it at the service of an audacious and, until then, unheard of process.

We began to understand that 'self-building' was a form of **alchemy**, an art in which, while the alchemist manipulates metals like lead and mercury in his crucible to convert them into gold, a similar and just as important transformation occurs, whereby gold becomes only a by-product of the process (that at best will help pay some of the debts incurred along the way), but the '**Great Work**' actually lies in the spiritual-human transformation. The mutations experienced by the metals in the crucible thus become metaphors for those that have made the alchemist a 'better' human being than he was at the beginning of the process.

In this experience, we also learnt the capacity and effectiveness of **metaphors** in transforming reality, possibly not directly, but to the extent in which we transform ourselves, or that we transform our manner of understanding and relating to the world. All words are 'magical' to the extent in which, directly or indirectly, they are capable of changing reality, or helping us to do so.

I extend these lessons today to the set of conceptual, methodological, political, scientific, economic and technical tools that constitute risk management, and that, to my understanding are, (or should be) the same one that human beings use to confront or prepare themselves to confront the challenges of climate change, or, more importantly, of global change.

As we well know, disasters (unleashed by phenomena of natural or technological origin) have occurred in the world since long before the subject of climate change was mooted: they have existed as long as there have been human beings on planet Earth, but they have increased in number, complexity and destructive power in recent decades as a consequence of the roads we are being led down by the predominant form of what we call 'development.' And these disasters provide the proof that we are increasingly incapable of living harmoniously with the natural dynamics of the planet.

Our planet is moving rapidly away from its role as a 'neutral backdrop' for human adventures, becoming instead an 'active player' that expresses its 'lack of agreement' with absolute clarity.

Alchemy was founded on the prevailing mediaeval concept of the individual as an element not totally independent from its environment, but rather, an extension of this or, even more accurately, its 'condensation' in space and time. The individual and the environment formed an indissoluble unit, in the same way that for babies in the stage of development known as 'primary narcissism' there is no tangible difference between itself and its mother, as each feels and acts as part of the other. Hence the manipulation of metals in a crucible can exercise a parallel 'quantum effect' on the 'operator'.

This is described beautifully by Fritjof Capra in his book 'The Tao of Physics'⁷ when he speaks of 'the feeling of oneness with the surrounding environment', reaffirming this precisely as he enters into the mysteries of quantum physics to explain that the properties of a particle can only be understood in terms of its activity - its interaction with its surroundings - as a consequence of which this particle cannot be seen as an isolated entity, but only as an inseparable part of a whole.

A practical application of this principle on a human scale is to say that: just as any alteration of the whole implies a transformation in the constituent parts, any action by or on the parts (in this case, individuals and human communities or, for example, an ecosystem or a river basin) also has the capacity to exert influence on the whole. Those who qualify – or disqualify - these statements as being merely 'poetic', should remember that one of the main tools we have in risk management, as it is understood here, is the poetic capacity of human beings.

Ever since life appeared on Earth approximately 4 billion years ago, we living beings have transformed the surroundings that produced us and we have experienced the need to adapt to the effect of the transformations we caused ourselves. Some of these, like the massive eruption of oxygen gas in the atmosphere 2 billion years ago as a by-product of photosynthesis, implied the extinction of millions of species that were unable to adapt. Oxygen gas had always been present in the primitive atmosphere as the result of photochemical processes, but it was Life itself, through the direct ancestors of green plants, that was responsible of increasing it to deadly levels for anaerobic organisms. Life, then took several million years to evolve and adapt to these new conditions of existence, paying the extremely high price of the extinction of many species.

Two billion years later, human society is facing a similar challenge. Our development model, dependent on the intensive extraction of the energy trapped in fossil fuels like coal and oil is increasingly swelling the proportion of carbon dioxide in the atmosphere. An atmosphere where the 'ideal' composition for a given stage in the evolution of the planet was (and still is), the outcome of several million years of implicit agreements between the constituent beings of the biosphere and the rest of the 'linked systems' of the earth (lithosphere, hydrosphere, and so on) on how to capture, distribute and use the energy of the sun.

The conclusive nature of the effects of climate change and other planetary processes like the destruction of the ozone layer (which represents the undoing of another of Life's achievements, also from approximately 2 billion years ago) confirmed the warnings environmentalists have been issuing for several decades; warnings that until recently were viewed as 'ecological terrorism'. Those who dared to question the development model 20 or 30 years ago were physically or metaphorically garrotted, as it was considered they were endangering our future on the planet. Today they are given the Nobel Peace Prize. There is a great deal of truth in the saying that experience is the comb life gives us when we have no more hair left on our heads.

* * *

7 'The Tao of Physics: An Exploration of the Parallels Between Modern Physics and Eastern Mysticism' Shambhala: Berkeley (1975)



Photo: © PAHO/J. Jenkins

We were saying before, that, when Life faced the crisis caused by oxygen gas in the atmosphere it had several hundreds of millions of years in which to adapt to the new planetary conditions, allowing itself the luxury of extinguishing very many species who neither evolved (like our ancestors who learned to breathe), nor went into hiding, like those who sought refuge in places with no oxygen.

If CO₂ and other greenhouse gases continue to increase at present rates, living conditions on the planet are going to become very difficult for human beings. Earth and Life on Earth, can afford to continue without us (new species will develop to occupy the niches human beings will leave free), but human beings, as a species, do not have millions of years in which to adapt. Neither do we want our own disappearance, nor the extinction of the other species that share the Earth with us, and on whose existence, stability and diversity we depend in order to survive on the planet.

We do have one tool that was not available to our ancestors 2 billion years ago: 'culture' (best described as all the tracks we have left on the earth and all the learning we have acquired as we left these tracks). The same culture that has produced the development model that is so drastically changing conditions on the planet must soon face the challenge of finding new formulas for agreement between human beings and other constituent elements of the Earth- this time making them explicit, and providing clearly stated ethical objectives.



Photo: ©UNICEF-TACRO

Of 'downpours' and 'leaks'⁸

I would like to take the opportunity here to discuss two terms I have been working with over recent months, especially since I began to explore the common ground between risk management and climate change. I have found that, in reality, we are working in a single area of human knowledge and affairs, and that the use of specialist terms, or the same words with different meanings, leads to confusion and strengthens territorialities. This situation ultimately affects the way those of us 'belonging' to either one camp or the other fulfil our social responsibilities. We sometimes become embroiled in great idiomatic (idiotic and manic) discussions that fail to help us reach an understanding of the processes that really matter.

The terms 'downpours' and 'leaks', meanwhile, not only allow us to more easily identify the essence of the problems facing us, but they also help to 'despecialise' the issue. They bring us closer to communities who would possibly shrink before terms such as 'hazard' or 'vulnerability', 'mitigation' or 'adaptation', but who would feel calm and confident with the concept and meaning of the two day-to-day terms with which they are surely familiar (especially in the rainy season).

Remember that one of our duties is to help everyday people to recognise value and apply everything they already know. Let the people know that they know.

'Downpours' can be used to describe all those processes and events that can represent a danger to a territory. That is, for the communities and ecosystems that interact in a given space and time, forming what we call a 'territory'.

⁸ This is the title of one of the author's blogs on this theme that can be accessed at: <http://enosaquiwiches.blogspot.com>

And 'drips' can be used to describe the group of factors that reduce the territory's capacity to absorb the effects of downpours (resistance) without trauma or to recover promptly and adequately from the effects of the same (resilience).

We know that there are, and will be in future, more and more intense downpours as a consequence of climate change, subjecting our roofs to ever more demanding stresses.

But we also know that there are already many 'leaks' affecting us and that even a little 'downpour' - of the common kind due to climatic variability previously seen as a blessing - can today cause a serious disaster.

Naturally, we should give 'downpour' reduction all the attention and emphasis that it deserves, but without forgetting that we all contribute to making the downpours worse – although less so in the so-called 'developing countries' than in our 'developed' neighbours. The emphasis must be placed on stopping the 'leaks' (and in halting processes like deforestation that simultaneously increase the 'leaks' and exacerbate the 'downpours').

Many of the disasters that affect our countries, attributed today to climate change and yesterday or tomorrow to El Niño or La Niña, could equally well have occurred without the global meteorological processes simply because our countries have slowly been losing their capacity to coexist with the dynamics of nature... in other words: with the normal, and, of course, exceptional 'downpours'.

They, and we, have also lost the capacity to coexist with the dynamics of an ever more abundant and complex human species without trauma. Remember that when we are speaking of downpours and we are not only referring to rain, but to all those processes or events that can imply a danger to territory. A war, a free trade treaty with inequitable conditions and a recession in the dominant economies can represent far more dangerous 'downpours' to our territories than a hurricane, an earthquake or a tsunami.

Without reneging on our responsibilities to reduce 'downpours', we must also concentrate our efforts on fixing the 'leaks'. This means, we must strengthen the resistance and resilience capacities of our territories (ecosystems + communities) in the face of natural and human dynamics.

We should do this, amongst other reasons, because we know very well today that even though all the countries of the world, and particularly the big emitters of greenhouse gases, have agreed and fulfilled a commitment to reduce emissions, the effects of those gases already in the atmosphere will remain present for at least two human generations.

We cannot stop the 'leaks' that expose us to 'downpours' by thinking only of the interests of human beings and even less so when considering only a few sectors of human society.

Nor can we close them off with the arrogant arguments that have increased the breach and worsened leaks for several decades. Arguments that only accept a form of a linear reasoning and that discard other forms of action, thought and knowledge. If Culture is the tool available to us now (part of which is formed by risk and climate change management) the door should be reopened to other forms of argument that for centuries have been relegated by 'Western thought' and its apparent success.

What I am saying is nothing new and has been stated and restated many times since the 1960s. What we must recognise is that, up until now, this linear form of thinking and action has not been effective as it appears to lack the capacity to deal with the most pressing problems facing humanity today; possibly, some might say, because it has not been given the chance to demonstrate the validity of its proposals.

If this really is the case, we must campaign for these opportunities to be provided. We must ensure that all territories in crisis - which today span the entire world - are taken into account. We must acknowledge that all too often, those who call for a new way of thinking from the sidelines behave exactly the same as their predecessors once they come to power. They sometimes maintain a 'discourse of change' that is negated in the decisions they make in practice. Acting according to exclusively anthropocentric and linear arguments, they fall back on 'defeated' models and ignore planetary dynamics.

When we look at the magnitude and complexity of problems facing a planet with more than 6.6 billion humans on board: where a large percentage of people are kept in poverty and indigence by enormous inequities; where irreversible climate change processes in the short and medium term will force us to redefine the very essence of our human condition and our relationships with the Earth; where we face a human species that understands development as the compulsive need for unlimited parasitic growth - even at the expense of the very conditions that allow us to live on the planet; we begin to believe that only a true Miracle could save us from the apocalypse.

Back in the 1960s or 1970s, Barbara Ward, the renowned writer, said that human beings "have the duty to hope" (a quote that often sparks mention of our 'duty to act') and in our opinion we also have the responsibility to make this Miracle happen.

There cannot truly be risk management - or radical risk management⁹ emphasising the need to tackle the very roots of risk - if we are not able to target those deep quantitative and, especially, qualitative transformations that would be qualified as impossible from the linear perspective, and that would undoubtedly be termed a 'Miracle' should they occur.

Can I provide some examples of these transformations? Well, firstly: all of those that constitute and have constituted the essence of life since its very beginning. These start with the evolution of unicellular creatures that learned to exchange substances, energy and information with the environment slightly less than 4 billion years ago, and end with the generation of the human brain, and the human body in general. This organ is recognised (as far as we know) as the most complex structure in the entire Universe, composed of trillions of interconnected cells capable of reflecting on themselves and on the essence of the Cosmos, but also capable of the worst and most inconceivable atrocities, like torture, abduction or war.

⁹ ¿Qu-ENOS Pasa? – Guía de La Red para la gestión radical de riesgos asociados con el fenómeno ENOS' Bogota, (December, 2007). Also available in English under the title 'ENSO What?' (Bogota, 2008)



Photo: © UNICEF-Rep. Dominicana/Gonzalo Bell

This Miracle, incarnate in every human being, is repeated several millions of times a day each time a new being reruns the process that led from the unicellular being to us in fast forward in the maternal womb, over an average period of nine months.

It is the Miracle of Life that allows for the existence of entities, biochemically related to us, capable of existing in such extreme conditions of temperature, acidity, pressure or salinity that they are known as 'extremophiles.'

In 1998, in an effort to define 'the meaning of being South American', I wrote the following:

We are the failed attempt to enclose life in an imported order. We are life, bursting forcefully through the seams of history. We are life converted into millions of species and millions of tricks to outsmart adversity. We are life that wins the game in impossible waters saturated with sulphur and the slums of big cities.

We are the possibilities of life that continues despite all the annihilating factors that work against this and the obligation to raise awareness of these possibilities. We are the inexorable challenge to know ourselves and recognise ourselves; to rebuild our forgotten paths on the basis of fragments spread across geography and time. We are the imperative need to coexist with ourselves and with the other species and processes that share this piece of the planet with us. We are the duty to understand and accept that we are less Americans and less worthy and less viable as human beings, every time a dialect or a culture or a legend or an animal or vegetable species or a patch of forest or a spring disappears from our continent.

Now we shall return to what we were saying some paragraphs ago, about life previously (when it started or 2 billion years ago) having enormous quantities of time in which to achieve what we have here termed 'the Miracle' and being able to afford the luxury of extinction for those species for whom this Miracle did not work. As we also said, we human beings do not have the same time, nor can we, nor do we wish to, afford ourselves the same luxury.

How then can we create the conditions that will produce this Miracle in 'real time'?

I don't personally have the answer, but I can provide you with some clues on how to find it. The main ingredient of the Miracle is what Albert Schweitzer called the 'will-to-live.'

All true knowledge passes on into experience,' writes Schweitzer. 'The nature of manifestations I do not know, but I form a conception of it in analogy to the will-to-live which is within myself. Thus my knowledge of the world becomes experience of the world. The knowledge which is becoming experience (does not allow be to remain in face of the world a man who merely knows, but forced upon me an inward relation to the world, and) fills me with a reverence for the mysterious will-to-live that is in all things. By making me think and wonder, it leads me ever upwards to the heights of a reverence for life...

True philosophy must start from the most immediate and comprehensive fact of consciousness. This consciousness says: 'I am life which wills to live, in the midst of life which wills to live.' This is not an ingenious dogmatic formula... At every hour of reflection it stands fresh before me... As in my own will-to-live there is a longing for a wider life and for the mysterious exaltation of the will-to-live which we call pleasure, with dread of annihilation and of the mysterious depreciation of the will-to-live that we call pain; so it is also in the will-to-live all around me, whether it can express itself before me, or remains dumb. Ethics consist, therefore, in my experiencing the compulsion to show to all will-to-live the same reverence as I do my own.



Photo: © Plan-Republica Dominicana/Luis Vera

In the face of the present and future challenges that must face current humanity, when risk management has finally stopped being a group of activities, resources and techniques to confront the 'exceptional' to become, unavoidably, a way to manage day to day affairs, where abnormality is the norm and the abnormal is normal, those of us flying this flag must learn to discover, activate, dynamise and join forces with this will-to-live, which is the only element capable of pulling off the Miracle.

Antecedents of this sort have, of course, existed for many centuries; perhaps one of the most concrete of these can be seen in acupuncture and alternative medicines in general.

After the 1994 earthquake near in Paez river basin in the indigenous region of Tierradentro, southwest Colombia, we had the task of creating an accompaniment strategy for the recovery process. The earthquake destroyed 40,000 hectares of land, there were 3,002 landslides, which caused an avalanche up to 70 metres deep in places and that took the lives of more than 1,000 human beings. More than 30,000 people lost their homes or were affected in some way, and 8,000 people were forced to relocate outside the disaster zone. To cap it all, recovery of the ecosystems and communities affected would have to take place in a zone that was also known to be the backdrop to conflicts of many types, including inter-ethnic and religious struggles dating back to long before the disaster. In that situation, from up close, the only safe bet was a Miracle.

When we laid out the 'Guiding Principles' of the institution created by the Government of Colombia to accompany this process, we included the following:

All living beings, including human communities and their ecosystems, have the coping mechanisms that allow them to transform themselves creatively, as an outcome of crisis. The Nasa Kiwe Corporation understands its own function, and that of the various external actors intervening or who will intervene in the disaster zone, to be that of the role fulfilled by biological medicines on bodies affected by disease: not substituting the immune system that allows the diseased body to take ownership of the recovery process, but strengthening this by stimulating energy the body itself must process according to its own deficiencies and needs. Those energy stimuli, represented in this case by economic, methodological or technical support offered by outside agents in the zone, must recognise the various expressions of the culture of local communities as the backbone of their immunological system and their creative possibilities.¹⁰

I quote the above, which many of you in the audience surely already know, simply to base the statements of this discourse in real experience, and to state again the conviction that neither risk management nor climate change management can attempt to intervene effectively on the territories of the world by using a purely conventional approach.

¹⁰ From the 'Principios Orientadores' de la Corporación NASA KIWE, Popayán (1994). The story of this process is told in the book 'En el Borde del Caos' by Gustavo Wilches-Chaux, Casa Pensar, Universidad Javeriana (2000). The book was written with the support of the National Environmental Fund and the Foundation for Popular Communication FUNCOP Cauca.

Those of us working in this field must learn to use our 'acupuncture needles' and to identify where to put these, so that we are effectively capable of activating and opening the way for the will-to-live of the territories, communities and ecosystems with which we interact.

Against the scenarios of ever greater uncertainty that appear to dominate our future, only life itself, and by itself, can show us the correct way to go step-by-step. It is pointless to insist on planning and a mechanical and linear intervention when we are really part of chaotic processes. And here we can apply what we mentioned before for environmental education: risk management and the management of climate change must not only be interdisciplinary but, above all 'indisciplinary', because life itself is interdisciplinary... meaning that the real issue here is to strike a chord with Life.

We need to provide a true '**dialogue of knowledge**' and a true '**dialogue of ignorance**' that allow us to make full use of satellite technology, and the best of, for example, the which that help the amauta or Inca elders of the Andean altiplano to maintain ongoing communication with the natural world around them. Or those used by the *tiemperos* who talk with the volcano Popocatepetl. Or the *chamanes*, *yatiris*, *quiamperos*, the *walas*, *jaibanás*, *machis*, *tachinabes* and other 'chosen' people in a community who have in depth knowledge of some dimensions of the territory of which they form part, but also possess the capacity to interact with these dimensions and the forces predominant in them, often in ways and with outcomes that are inexplicable and unmanageable from the point of view of 'Western' science.

We need all of this, I repeat, without giving up on the contributions of science and technology in any way, as this would lead us to new forms of *knowledge arrogance* at opposite ends of the continuum.

Learning to place the '*acupuncture needles*' of risk management and climate change management and identifying the '*meridians*' and precise points at which to apply these within territories, demands that we recover a series of 'human gifts' we have overlooked or forgotten. These include 'intuition' (which has reclaimed its rightful place as a form of interaction with highly complex systems where conventional analysis is stifled and paralysed) and '*compassion*'; or the capacity to share passion: to feel in ourselves what others feel, not necessarily another human being, but also, for example, a river or a mountain: beings or groups of beings strongly imbued with the will-to-live that we aim to activate with risk management.

We must not forget to mention '*identity*', which we can also define as the 'sense of territory'. We spoke before about the 'primary narcissism' that allows a mother and baby to recognise each other and feel like an inseparable unit, and of the equivalent feeling that made people in the Middle Ages identify organically with the surroundings of which they formed part.

We will only achieve these new agreements with the dynamics of nature we spoke of before to the extent in which we are capable of building or rebuilding our identity with a territory that could be the rural village, the urban neighbourhood, the city or the whole planet - or on all these scales at the same time. Any economic, social, political or cultural process that leads to the loss of identity will cause new 'leaks' and, consequently, greater risks and disasters.

I was forgetting to mention another essential ingredient of identity: **memory**. The loss of identity and the loss of memory, which are almost synonymous, constitute two of the most critical factors for risk and disaster generation and for the inability to recover and to learn useful lessons from this.

* * *

Today we see clearly – or must make it clear - that the most traumatic consequences of global change will not be expressed only in increasingly intense and complex meteorological and oceanic phenomena, but rather in social dynamics like mass displacements (an increase in the seriousness and spread of environmental refugees, already a reality today), or the fight for control over old and new strategic resources (which will include silence and shade) and territories that offer better conditions for habitation, whether real or only apparent.

These dynamics are bound to create new conflicts and worsen existing ones. Risk management and global change management must be recognised from now on, and above all, as tools for peaceful conflict resolution - another element that would not be possible within conventional frameworks.

Attempts to mechanically apply the concept falsely attributed to Charles Darwin of 'the survival of the fittest' would not be appropriate here, nor would 'survival of the strongest.' Because the new planetary challenges oblige us to think as a species and not as individuals, but also as members of the network of Life known as the biosphere. The vulnerabilities of the less fit are spread and 'redistributed' in this network of life, becoming hazards and vulnerabilities even for those presumed to be less weak or less exposed.

More than any hazard wielded by natural processes, whether or not it is amplified by human dynamics, the greatest danger catching up on humanity from behind is the express will-to-die embodied in war. I am speaking generally, but also and very particularly, of the region where we live.



Photo: © PAHO/J. Jenkins



Photo: © PAHO/Adan Pari

Some years ago, I was a finalist in a competition for absurd theories run by the magazine OMNI (no longer in production, which is hardly surprising). My 'entry' stated that the end of the Cold War was a result of global warming.

The statement was really absurd, not so much because of its 'pseudo-scientific explanation', but because the Cold War is not over - it has simply been redefined and has diversified its range of manifestations, interests and actors.

And just as happened in the past, the Cold War is always looking for local or regional locations in which to warm itself up, as far as possible without directly affecting those who profit from it. I will not go any deeper into this issue, due to pressures of time, and because we at LA RED recently promoted a 'Declaration against War from the Risk Management Sector' where we stated that it made absolutely no sense for some of us to dedicate our lives to seeking how to reduce risks and avoid disasters while others dedicate themselves to planned death. This document, signed by dozens of people in the Americas, and especially Colombia, Ecuador and Venezuela, proposes that: 'if States had an obligation they could not renounce to avoid disasters in order to protect the life, integrity, property and opportunities of its communities, they would have even greater motivation to prevent war'.

The phantom of war will not retreat before the hazards of climate change, but will simply spot new opportunities to clone itself and profit, forcing us to remain alert to the dangers.

And now, almost at the end of my speech, I venture to place on table the following proposal for an approach to risk management, so that we can meditate upon it, enrich it and breathe life into it. I think that it sums up my previous thoughts in some way:

Risk management is the set of knowledge, wills, capacities and physical, economic, technological, ethical, spiritual and other types of resources, that can be used by a culture - as well as the group of activities undertaken by a society - to strengthen the capacity of the communities and ecosystems forming a territory, allowing them to coexist with dynamics coming from outside or within whilst remaining free of destructive traumas. Risk management is also responsible for avoiding or controlling the creation of processes that can affect the quality of life of these groups or of other ecosystems and communities.

Thus, risk management must be recognised, called for and exercised as a human right in itself, but also as the prerequisite for the exercising of other rights - starting with the right to life.

This is my attempt to summarise what I believe risk management should be in a couple of paragraphs (I think it is equally valid for global change and also climate change management).

One of the resources needed in order to achieve this Miracle, perhaps even the main element, is love.

I do not use this word gratuitously, but in the full conviction that, as was stated by a student of Giordano Bruno, 'love is the name we give to the force that ensures the uninterrupted continuity of beings' - a statement that returns us to the key issues of identity, compassion and memory.

Silvio Rodríguez puts it very well:

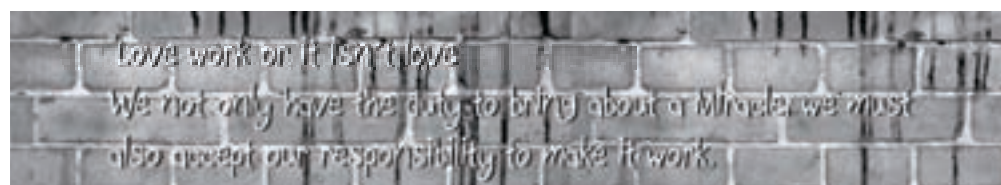
*You must love
The clay in your hands*

*You must love
Its sand to madness*

*And if not, don't get started,
For it will be in vain*

*Only love
Lights what lasts...*

*Only love
Turns mud into miracles...*



2. The first ingredients: school + safety



Photo: © UNICEF-EI Salvador/Gonzalo Bell

A stage in life

School is a stage in life. And we are certain in the knowledge that for those currently in this stage, the school represents life itself - or at least a very important part of it.

- It is a stage in the lives of parents (or guardians) which lasts as long as they have school-age children.
- It is a stage in the lives of those who work as teachers
- And, of course, it is a stage in the lives of those children whose main task (at least from the point of view of adults) is to attend school, and whose responsibility is to learn... and to 'pass' the school year.

School: an institution, a building, a community

When investigating the meaning of the word 'school' or 'schooling' (escuela) in Spanish, the dictionary gives us several definitions, many of which have lexical equivalents in English¹¹:

1. A public establishment where children are given primary instruction.
2. A public establishment where any kind of instruction is delivered.
3. Learning that is provided or has been acquired.
4. A group of teachers and pupils learning together at a given time.
5. A method, style or particular approach of each teacher to teaching.
6. The doctrine, principles and systems of an author.
7. A group of disciples, followers or imitators of a person or their doctrine, art, etc.
8. A group of common characters in literature and art that mark the works of a given era, region, and so on, from others: 'Classic school', 'Dutch romantic school', 'and Venetian school'.
9. An element that in some way provides a lesson or gives an example and experience: 'The lesson of disgrace', 'the University of Life'.

The 'educational community'

And when researching the term 'educational community' on the Internet, we can find it defined as 'a group of persons who influence and are affected by an educational environment'.¹²

This definition is suitable for the purposes of this text, because it is not limited to those directly involved in the school institution (directors, teachers, parents, students, workers at the institution), but is broadened to include those who 'influence or are affected by the educational environment'.

The last two words also extend significantly beyond the boundaries of the school, transcending the walls that mark the physical boundaries of the enclosure.

The educational community therefore includes everyone from the Minister of Education, to neighbourhood families; it covers the community at large around school, whether or not the students are members of that community, and also includes the mayor, the local educational authorities and other actors and sectors of the community along the way.

According to this definition, even building and maintenance staff indirectly form part of the educational community, as do the companies providing public services (drinking water, sanitation, telephone, Internet, gas, electricity) and their workers.

¹¹ Of course we do not need a dictionary (in this case, the Real Academia de la Lengua Española (the Dictionary of the Spanish Language of the Royal Spanish Academy)) to know the meaning of the word 'school' and other common every day words used in this text. This is simply an exercise in curiosity and imagination: 'opening' these terms up to discover everything that lies within, with the same fascination which we children of the 1950s would pull our toys apart to find the magnet or coil that made them move. Hopefully, when doing this with words, we will not be left with extra pieces that will not fit back in at the end, as was often the case with our toys.

¹² http://es.wikipedia.org/wiki/Comunidad_educativa (in Spanish – no equivalent entry in English)

This also includes the police patrolling the neighbourhood, the local fire brigade, Red Cross and civil defence volunteers, the man selling ice creams outside the school, the lady in the shop where the children spend their money, and the people providing school transport. To a large extent, the quality of education and level of safety the school is able to offer depends on the suitability and quality of the services provided by all these indirect members of the educational community.

The meaning of 'safety' or 'security'

Before returning to the various meanings of the word 'school' or 'schooling', we shall look at the dictionary definition of the word 'safety' or 'security':

1. The quality of 'safety' or 'security'
2. Certainty (secure and clear knowledge of something).

Legal Safety or Security:

A quality referring to the legal framework and legislation, which implies the safety and security of all regulations, and consequently the reliability of its application.

Social Security:

State organisation dealing with certain economic needs and health needs of citizens.

As said of a branch of public Administration: That aims to lobby for the **security** of citizens.

As said of a mechanism: That ensures good operation, protecting this from failure, impotency or ineffectiveness.

And from 'safe' or 'secure', defined in the dictionary as an adjective: the quality of being 'free and exempt from all danger, damage or risk.'

Or rather, we would add, it is the capacity to face the effects of a danger or risk without suffering any major damage.

We will see later how all these concepts can be applied to the issue we are dealing with in one way or another.

Hardware and Software

We return now to the meanings of the word 'school' or 'schooling'. The first two definitions, as we can see, refer to the establishment itself,¹³ which includes the physical building, its furnishing and equipment (the 'hardware' of the school), as well as its institutional function (providing the space and time for education).

The fourth meaning (the group of teachers and students) contains ingredients that bring it very close to the concept of an **educational community**, although this is not an exhaustive group - we have already seen there are many other actors involved in such a community.

¹³ When the dictionary uses the term 'public' it is surely not referring to the legal condition of its ownership (public education or private education), but rather to the condition of being open to the public, that is to say, the community.

And the six remaining definitions are related to what we could call the 'software' of the school: the teaching and learning content provided, the methods by which it is delivered... the 'way of thinking' in the school and the group of people who think in that manner.

It could be claimed that these later definitions of the word are irrelevant our interests here, but if we are going to talk of a 'safe' school, we cannot limit this simply to the physical or structural safety of the building where schooling takes place. We need to put all the above ingredients together, and to consider the manner of thought and behaviour (that is to say: the 'school of thought') of the educational community that gravitates around it.

Hope and safety or security

The US writer and psychoanalyst Bruno Bettelheim (1903-1990) asked to what extent physical surroundings affect the psychology of hope.

He had previously written:

The attitude of the child toward life is an outcome of their experience at home and what happens to them there. This could be called the human dimension of home design. In poor neighbourhoods, as everywhere else, it is a key element that shapes our lives, and the measure of this critical dimension is not space but time, namely: the future. The home environment must generate hope for the future, if the child is to become a mentally healthy adult.¹⁴

And further on the same author writes:

While the child can run home with its mother, shut the door to leave the terrible exterior world outside and feel safe in there, they will know they have a place in the world.¹⁵

Bettelheim's reflections on the home can perfectly well be extended to the school, opening our eyes to the latter as a space for generating hope and on the mutual and complex relationships between hope, security and safety.

They also make us aware that it is not enough for the home and school to offer children security in the present; they must also offer security – and the hope of security - for the future. This element is a requirement in the formation of what Bettelheim terms 'mentally healthy adults,' and the resulting mentally healthy societies. In order to achieve this, as we shall explain further on, the school actively build on safety and security.

From this point of view, the education on offer - or that should be offered - by the school and home, consists of elements to help reduce levels of uncertainty in the present and future of the educational community, and children in particular, delivered through both 'hardware' and 'software.'

¹⁴ Bruno Bettelheim, 'Educación y vida moderna'. Crítica – Grupo Editorial Grijalbo (Barcelona, 1982: 109) (Published in English in 'Surviving and Other Essays,' Knopf: New York (1979). The bold and the translations from Spanish are ours.

¹⁵ Ibid, page 133



Photo: © UNICEF-Cuba/Larren Gumpin

Intergenerational responsibility

The most widespread definition of 'sustainable development' describes it as a form of development that meets the needs of the present generations without compromising the ability of the future generations to meet their own needs.¹⁶ This intergenerational responsibility is a key element in the essence of sustainability.

Security is one of the essential needs of a human being and '**sustainable security**' must therefore take the intergenerational dimension into account. In practice, this challenge is first approached in school where present generations start the process of 'handing the baton on' to future generations.

Only behind closed doors?

However, when Bettelheim speaks of 'shutting the door to leave the terrible exterior world outside', we are left uneasy:

Is it enough for the home and school to only offer the child security once they shut the doors that cut out contact from the exterior world, or do we need to extend this 'service' across the territory of which the school and home form a part?

The answer is of course: Yes. The school-home binomial is only truly safe and secure to the extent in which the surrounding territory is capable of offering safety and security in the holistic sense that we will explore later.

This is why we are insisting on the concept of a **safe school in a safe territory** and on the challenge of building this security.

¹⁶ Brundtland Report 'Our Common Future' Oxford, Oxford University Press (1987)

3. Another ingredient: the territory

Rudolf Virchow was 26 years old when he received an urgent message from the Council of Berlin. It was 1847, and there was an outbreak of typhus that needed investigation in the region of Silesia. Virchow, a pathologist and recognised scientist, travelled to the region, assembled data on the events and drew up a report recommending, amongst other things: the establishment of complete democracy in Silesia; the proclamation of Polish as the official language for the region; changes in the tax collection system; a road building programme; and the establishment of agricultural co-operatives.

The Council of Berlin was disconcerted. They had expected a scientific report, and they received a political one. Virchow defended his action by stating: 'Medicine is a social science and politics is nothing more than medicine applied on a wide scale.'

Gladys Herrera Patiño and Iván Darío Chahín,
'La Fiesta de la Conversación' EDEX: Bilbao (2007)

A living entity

In the previous pages, the term 'territory' has been used several times to mean the scenery against which all human life takes place.

However, unlike the backdrop for a dance performance or theatre production, 'territory' is actually a living and complex being that arises as the outcome of the ongoing interaction between two dynamics: the action of nature and the action of the communities that interact with nature. These two elements: nature and communities (or ecosystems and culture), contribute to the appearance of a territory, whilst also forming part of it.

Human beings, appropriate territory in various ways: we enclose portions of it with a fence or a wall, the same way that the birds mark their territory by singing, and dogs and other animals by urinating in certain places to show this territory belongs to them, or at least, that they have been there. And we endorse this action with a legal document granting us ownership, or the right to occupy and use this place. Or we simply put up a billboard, a sign, or we build and name a park, a street, a square or a building.

Land-use planning

And we also appropriate territory when we assign specific functions to each place, such as recreation, housing, transport, environmental protection or industrial or commercial activity. Something generally known as land-use planning. This establishes that there is a place for everything and that each thing must exist - or be carried out - in its own space. When land-use planning is implemented as it should be, it takes into consideration human interests and needs alongside the characteristics, cycles, limitations and needs of nature, which, as we already know, form an integral part of the territory.

For instance, nature needs sufficient free space for rivers to widen their courses during the rainy season. When we do not respect these spaces and we build upon them, we can be sure there will be flooding when the rains come causing a disaster for families who lose their property and have their peace disturbed. This flooding is not, therefore, a 'natural disaster', but the result of human decisions made without hearing or taking account of 'the voice of nature'.

Our feelings for the territory

We also appropriate territory symbolically through our emotions. We mark each space or place with what we felt there, often on the basis of the experiences we had in that space or place. As a result, this marking is to a large extent very personal. One corner of a park will awaken certain sensations in the person who experienced their first kiss there, and quite another in the person who was mugged on the same spot.

We human beings exist - we are - in a given territory and, in one way or another, each person represents a small sample of the territory of which they form part.

The way we speak - what we say and the accent we say it in - what we like to eat, the music that moves our bodies and shakes our souls, the weather that makes us feel comfortable, the smells that bring memories bursting forth, the landscapes where we feel at home, all this and many more things are intimately linked to the territory that is us. This can be the territory where we were born and brought up and where we choose to continue living, or just where we have ended up due to various circumstances, where we were not born but have put down roots, and where we flourish (or wilt) as human beings, plant seeds and produce fruit.

The feelings of identity, forming part and belonging, are some of the ways in which we experience or feel - the redundancy is worth retaining - the sensation of territory. [...]

We are talking about a territory built day by day on the natural world, but, as with all living beings, continually transformed by the inner dynamic of its constituent ecosystems and human influence. And as we transform our territory, we transform ourselves, because we form an integral part of it.'

Gustavo Wilches-Chaux

'Brújula, Bastón y Lámpara para trasegar los caminos de la Educación Ambiental' Ministry of the Environment, Housing and Territorial Development of Colombia and Gustavo Wilches-Chaux, Bogota (2007)

When the child discussed by Bettelheim closes the door of its house to escape 'the terrible exterior world', it is surely doing this because the child, its parents or other people have had highly unpleasant experiences in this 'exterior world', which have left the mark of fear on the child, forcing it to flee. We human beings pour our emotions into our territory along with the positive or negative feelings of our elders and even those of our ancestors. That is reason why we find statues in squares and plaques on the streets.

The house offers Bettelheim's child safety and a feeling of security, something that is not provided in the streets, the parks, nor generally anywhere today referred to as a public space.

One challenge facing those of us working for safe schools in our communities is to generate the conditions that will allow children and the educational community in general to know and feel that the school is a place that truly offers safety and security within the territory.

A first encounter with territorial safety

But children are not normally interned or confined within the walls of the school - they move from their home to school and back again, and as they do so, they should claim and exercise the right to use public spaces without experiencing fear. This fact that means we also face the challenge of extending this safety - and the feeling of security - to other parts of the territory where the children's lives unfurl.

This is one reason why we have chosen to discuss a 'safe school in safe territory'. Because how can we possibly discuss a safe cabin on a sinking ship?

4. Hazards, vulnerabilities, risks and disasters: the essential concepts



Photo: © UNICEF-R. Dominicana/Gonzalo Bell

A hazard is the possibility of the occurrence of a fact or event that represents a danger to the community exposed to the effects of this.

If this fact or event represents a danger, it is because the community does not have the capacity to resist these effects. In other words, the community is weak or vulnerable to the impact, and this particular fact or event would not be a hazard if this were not the case.

For a house with a good roof, a heavy downpour does not, in itself, represent a hazard in the way that it does for house with a rush matting roof, one with tiles missing or another in a poor state of repair.

In other words, the two concepts - hazard and vulnerability - are mutually generated: an event only constitutes a hazard if there is the possibility of it affecting a vulnerable community (and a vulnerable territory even more so), and this vulnerability is always established in the face of a particular type of hazard. Thus for example, a straw hut is not particularly vulnerable to the effects of an earthquake, but is very vulnerable to the impact of a heavy downpour.

The consequences of this example can be extended to a whole territory and to different types of hazards. The possibility of falling international prices for products like coffee, cotton or sugarcane does not imply a serious hazard for an economy that derives income from a broad range and biodiversity of products and activities; but it can be a hazard or cause a tremendous disaster in regions exclusively dedicated to the monoculture of these products.

Meanwhile, the concepts of hazard and vulnerability are often interchangeable. From one point of view, an element can be classed as a hazard, while from another; it can be classed as a vulnerability... and vice versa. That is because the vulnerabilities of one group can imply or cause hazards to others or to the whole territory in general.

One very dramatic example of this is the vulnerability of displaced populations (as a result of violence, economic or environmental causes or a combination of all three), arriving in the big cities with no resources and no opportunity to settle on suitable land - a situation which forces them to set up home alongside rivers or on unstable hillsides.

This vulnerability then becomes a hazard to the hillsides and water courses, which will almost certainly lead to landslides and floods when the rains come, resulting in a hazard to themselves or to other families or communities. Landslides and floods of this nature can result in the partial or total destruction of houses, the loss of property and even human deaths.

Lastly, the foresight of what could occur if a hazard occurs in a vulnerable territory is known as risk.

People working on risk, draw up risk scenarios which allow them to visualise what could happen if, for example, the rains were to become heavier or lighter and how such rainfall would affect places with different levels of vulnerability.

When this risk leaves the realms of foresight and becomes a reality, we say a disaster has occurred. It is no longer a case of what might happen... but rather what actually happened when the hazard occurred. In the case of a landslide, this would mean the loss of lives and property, blocked roads and families deprived of a territory once again.

Continuing with our example, the vulnerability of displaced families goes much further than the fact that they settled on river banks and unstable hillsides. It is rooted in the reasons why they were unable to avoid displacement in the first place: their lack of economic, political and social capacity to ensure respect for their rights; the State inability to protect them from aggressors; and so on.

These vulnerability factors or 'vulnerabilities,' are generally heightened when these groups move and settle in other territories where they are exposed to new vulnerabilities. Thus, for example, families who made a living from agriculture or fishery suddenly find themselves in urban environments, ruled by codes they do not understand.

Risk Management

When the ingredients of the risk (hazard x vulnerability) are known, it is possible to intercede to some extent in order to reduce or control the dimensions of the risk to prevent them from becoming disasters. We will see further on how risk management can be applied to reduce or control risk in schools. In other words: to make them safer.

Depending on the origin and nature of the hazard, we can sometimes attempt to stop these hazards from happening, - action that is known as **prevention**. And we can also intercede against vulnerability, helping to make the territory more resistant and able to withstand the impact of any event. This final element is known as **mitigation** (or **adaptation** when discussed in relation to the effects of climate change).

Risk management also covers **preparation** undertaken in order to allow the educational community to respond adequately and promptly in the event of an emergency or disaster that has occurred in spite of every possible measure being taken to avoid this. The capacity to withstand the effects of the hazard without trauma is known as **resistance**, and the capacity to recover from the effects of an emergency or disaster is known as **resilience**.

Both of these latter concepts play a part in the self-regulation capacity of complex systems, and the human body itself provides a good example of this. A 'healthy' immune system, allows us to coexist with a series of bacteria and viruses without becoming ill (resistance), whilst also allowing us to 'recover' after illness (resilience).

Safe territories and safe schools are not necessarily totally 'risk free', but rather, those that possess sufficient resistance and resilience to avoid disasters or recover from them.

In this closing paragraph of the chapter, we would like to point out that risk management is also involved following a disaster, when **reconstruction** processes come into play. These processes aim not to reproduce or worsen conditions generated by the risk that led to the disaster, but to encourage recovery and amelioration of losses, actively contributing to territories (ecosystems and communities, including their schools) with increased levels of both resistance and resilience.



Photo: © PAHO/Adan Pari

5. Hazards and their causes

Priority 2 of the Hyogo Framework for Action¹⁷ 'Know the Risks and Take Action: Identify, assess and monitor disaster risks – and enhance early warnings' demands we make a commitment to examining and full understanding any phenomena⁴ that can form hazards in the territory of which we form part. These particularly need to be assessed in relation to schools, and to do this effectively we need to 'learn to think like nature' in order to understand why nature can behave in a way that represents a hazard to human beings at any given time. This is, in other words, environmental education.

There are theoretically three types of hazard, and these are classified according to their origin: natural, socio-natural and anthropic. In real life, however, the lines between one type of hazard and another become increasingly blurred, forcing us to concentrate more on understanding processes than on classifying isolated events.

Thus, up until recently, hurricanes were viewed as perfect examples of the interrelated dynamics of the atmosphere and the sea and were therefore considered a natural hazard. Today, they have been reclassified on the boundary of socio-natural hazards, as their intensity and frequency, amongst other characteristics, are recognised to be increasingly influenced by climate change (and global warming in particular) - a process which is predominantly provoked by human activity.

Similarly, some fires play an eminently natural role (as part of the dynamics of an ecosystem), others are socio-natural (because human beings have generated the conditions in which they occur), and others are typically anthropic, caused by fire lovers with the deliberate intention of changing land-use.¹⁷

The same is true for rock falls or landslides and other hazards: these can occur in perfectly conserved ecosystems as a result of an earthquake shaking hillsides saturated with water, for example, but they can also occur as a consequence of poor water management on a highway or in an urban settlement, or by a 'blast' or explosion, deliberately engineered to cause the collapse.

¹⁶The Hyogo Framework is a detailed plan to guide efforts for disaster risk reduction in the coming decade. Its main objective is to have considerably reduced losses caused by disasters in terms of human lives and social economic and environmental property of communities and countries by 2015. It has been signed by 168 governments during the World Conference on Disaster Reduction held in Kobe, Hyogo, Japan. Hyogo Framework for Action 2005-2015, ISDR, <http://www.unisdr.org/eng/hfa/docs/HFA-brochure-English.pdf>

¹⁷The term 'phenomenon' is not used here to mean 'an extraordinary and surprising thing', but to indicate the expression of a natural or social dynamic.

Hazards of a natural origin

When there is the possibility of a phenomenon arising from the natural dynamics of a given location, like a volcanic eruption or an earthquake, we speak of a natural hazard or, more precisely, a hazard of a natural origin.

Normally, we can do nothing to avoid these phenomena taking place (or more precisely: to prevent the hazard), we just have to learn to live with them, reducing our weakness or vulnerability to the effects of this event (mitigation).

A territory or a community, and more particularly, a school, can be exposed to this type of hazard if they are located in an earthquake zone (where an earthquake may take place), or in an area of volcanic activity (where they could be affected by pyroclastic flow, rock and ash fall, mudslides or any of other hazards associated with an eruption). These two examples above are both geological hazards, as are the tidal waves capable of causing a tsunami.

Other phenomena such as hurricanes and tornadoes, electrical storms or hazards from phenomena such as El Niño and La Niña (El Niño Southern Oscillation (ENSO)) constitute climatic hazards. Some of these, as we have already said, are beginning to show increasingly clear signs of the influence of human activity.

There have been cases where a geological hazard has occurred in conjunction with a climatic hazard, as was the case with the eruption of Mount Pinatubo in the Philippines on 13 June 1991 (the greatest volcanic explosion of the 20th century – classed as ‘paroxystic’ by volcanologists) which coincided with typhoon Yunya passing through the same region. And there have been similar, less ‘spectacular,’ but no less damaging situations, where an earthquake has coincided with the effects of a heavy winter storm - in Colombia with the earthquakes of Popayán in March 1983 and Tierradentro in June 1994 - and in Honduras, where hurricane Felix coincided with the earthquake in Marale in September 2007.

A community and its schools will be submitted to climatic hazards when they are in a hurricane corridor, in tornado zones, or in locations subject to electrical storms, hailstorms, frosts, friajes⁵ and other phenomena associated with the weather, wind and sea.

Thus, for example, as I write this document, Santiago de Chile is experiencing the effects of a snowfall heavier than any seen for at least 50 years, according to available data. The city centre has come to a standstill (a strange occurrence for any great city today), primary and secondary schools have been temporarily closed and many other community activities have been suspended.

Another climatic disaster which has a slow and silent effect, with a prolonged impact and often irreversible effects is that of drought, which has an increasing ecological, economic and human impact.

⁵ Friajes are extreme weather phenomena where cold southern winds blow into Amazonia from June to August, reducing temperatures drastically for short periods of time, see for example PAHO analysis of friajes affecting the Andean region of Peru in August 2007 (in Spanish) http://www.disaster-info.net/PED-Sudamerica/peru_emergencias.htm

Hazards of a socio-natural origin

Ever since the researcher Allan Lavell proposed this concept, the conceptual category of socio-natural hazards has included those phenomena that occur in nature but that are directly or indirectly caused, or at least influenced, by human activity.

Just as there are floods which form part of the normal cycle of some ecosystems (as is the case for most rivers in the Amazon region), there are others that are prompted by poor management of soil and plant cover in the river basins, the diversion or arbitrary alteration of rivers, the draining of wetlands or simply to the blocking of riverbeds and streams with rubbish and rubble in urban and rural areas, preventing the water from exercising its 'right to flow'.

A school on hillside or near to a river or a stream will, sooner or later, end up paying the consequences of bad management by human beings in their relationship with the mountain or watercourses.

In such cases, it is possible (at least theoretically) to intercede in the human component of the hazard, helping the hillside to recover stability. This intervention is not the responsibility of the school itself, but corresponds to other levels of decision makers and institutional actors. A little later, we shall explore some of the ways in which the educational community can and should exert pressure in order for those responsible to adopt the measures necessary to resolve the problem.

The aforementioned can be achieved through the application of structural measures, like the construction of walls and drainage channels for the water, or through non-structural measures, such as land-use planning (which can imply the relocation of families or communities) and environmental education. In these cases, risk management is executed through a combination of both types of measures while efforts are made to reduce vulnerability (mitigation).



Photo: ©UNICEF-Bolivia/Adan Pari

Hazards of an anthropic origin

These are the hazards that have a clear origin in human activity and, contrary to popular belief, in some cases the management of these presents far greater difficulties than do natural and socio-natural hazards.

Some hazards of anthropic origin are intimately linked to the way we understand and implement development. This is the case, for example, in the pollution of rivers, the air and the soil, a phenomenon that presents various risks in itself (respiratory diseases and other health hazards) and furthermore reduces the capacity of ecosystems and communities to coexist within the natural dynamic (we have already seen how the rivers and streams blocked with rubbish are a contributory factor in many floods). There are many more examples. To cite just two recent events: there was the 'accomplice' role played by the accumulation of rubbish in drainage channels in the markets of the city of Comayagüela (Honduras) when hurricane Felix struck in September 2007; and in November 2007, advancing urbanisation in Villahermosa (Tabasco, Mexico) affected the 'immune system' that normally allowed the territory to operate within the complex water dynamic of the zone, and a rainy season a little heavier than normal unleashed a disaster of enormous proportions known as 'the Latin American Katrina.'

Accidental hazards

Then there are industrial accidents (like explosions, leakages of toxic substances, fires), which constitute independent hazards in themselves, that can be unleashed by hazards of a natural or socio-natural origin (as can be the case following an earthquake, for example).

Some advances made for human comfort, such as domestic gas supply networks, can cause extensive fires in the event of an earthquake. Hence, all steps taken forward in development must be accompanied by full and adequate risk assessments in order to avoid the presentation of unexpected new risks at a later date. This is one of the essential requirements of sustainable development.

Intentional hazards

Best described as 'violence in all its forms.' This is perhaps the most dramatic aspect of anthropic hazards: when violence and its effects are backed by the will to crush, to dominate, to intimidate, to immobilise, to damage, to displace.

In the case of the school and the educational community in the broadest sense (as described in chapter 1 'a group of persons who influence and are affected by an educational environment') these hazards can constitute a cause for more immediate and ongoing concern than those derived from natural causes.

The threats of drug pushers, child abusers or armed confrontations in areas of settlement, or antipersonnel mines in rural communities, generate risks and disasters that are more imminent and tangible than the possibility of an earthquake.

Formally speaking, this issue is beyond the remit of a discussion document aiming to contribute to the safety of schools and territories in the face of natural hazards.

However, in strengthening schools against these hazards, we can also contribute to the construction of schools, communities and territories that are also less vulnerable to 'intentional hazards and vice versa.

Another reason for approaching this issue is that, as we have seen in several previous examples, hazards are not isolated phenomena. In practice, they are complex in nature, and a hazard of natural origin (like an earthquake, tidal wave, volcanic eruption or hurricane) can generate a series of consequential hazards of a socio-natural (like landslides and tsunamis) and anthropic nature (such as looting and other public order offences, industrial accidents).

Hazards threatening the most vulnerable sectors of the community (children, women, the elderly, the disabled) can increase in the event of an emergency or disaster when the tacit or explicit social agreements that facilitate human coexistence are weakened, when the population affected finds themselves overcrowded in shelters and the authorities are busy attending to the emergency or when the authorities themselves have been affected.

More evidence is generated every day to show that the higher risk zones (full natural hazards) tend to also be those where governability is poor. This is largely because vulnerability and poverty go hand-in-hand in most cases. State presence is weak in the poorest areas and the community therefore has little confidence in State institutions they do not view as credible.

Risk management must increasingly be viewed as a toolkit for conflict resolution, a kit that must be employed to ease tensions between the dynamics of nature and communities, and between the different actors and social sectors.

The complexity of risk management is increased even further when it must be applied in areas of armed conflict.



Hazards from within the school

A note before closing this section: Hazards are normally stated to be factors external to a system (in this case to the school), that threaten the stability of this. However, given that increasingly complex social relations also occur inside schools, it is common for many of the hazards we have commented on to arise from within the educational community itself, like: accidents in laboratories or other school facilities whether or not they are provoked by an external hazard (like an earthquake); or armed attacks on students or teachers by adolescents or children, or vice versa, as are increasingly reported in newspaper headlines. All of these issues affect how we view the problem and we are aware that some of these factors can be aggravated when schools are used as shelters (for instance: harassment and other sexual aggression against children, adolescents and adult women).



El Tiempo (Bogota, 26 May 2007)

DODGING ANTI-PERSONNEL MINES IS ON THE CURRICULUM FOR CHILDREN IN SAMANIEGO (NARIÑO)

For the last two years, since warfare broke out in southwest Colombia, teachers have been forced to add a new subject to the curriculum: how to walk safely in the countryside.

Socorro Mora and Aurea Obando worry daily as they wait for their students to arrive. The tension rises when someone is late. There are no mobile phones nor tracking devices to help locate the students, and their fear can only relent when the students appear at the end of the road.

The two teachers both work in rural areas of Samaniego, where one false step can mean death from a mine blast. For the FARC, ELN, paramilitaries and the Army are all active in this area.

In Las Cochas School, Juan Fernando, one of Socorro's students recites by heart: " 'Always follow known and authorised paths.' My Dad says the same as my teacher, I must stay on the path, and not pick up strange objects," he adds.

Up until a few years ago, the child played in the fields around his home. His father, Carlos Acosta, forced the family leave their four hectare farm, their five cows, crops of potatoes and vegetables, when one of the cows stepped on a mine.

Although the ELN has offered to remove mines, the war is still ongoing and teachers must give classes on how to avoid death in this solitary and remote province of western Nariño, a four-hour journey from the provincial capital of San Juan de Pasto.

Another farmer, Anselmo Criollo, never tires of looking disconsolately at the farm he left two months ago after his neighbour was blinded by an explosion.

"I am from the country, I have lived through the war, I have seen how people kill each other... and now mines... it's impossible to know where they are, because the people who planted them have gone or are dead," he says.

There are around 35 schools in the region of fear that extends over towns like La Llanada, Los Andes Sotomayor and Barbacoas.

In Samaniego alone, there are 26 schools and one rural college where 1,500 children are surrounded by mines and warfare. In the last three years there have been 8 mine-related deaths and 40 injuries in the town, with 18 injuries and 5 deaths - two children, two farmers and a soldier - in 2007 alone.

For Aurea, who has taught at El Chincal school for 15 years, the situation leaves a bitter taste in her mouth. Her priority is to protect her 15 students, and she refuses to let them leave the classroom whilst in her care. They used to take environmental walks, visit other schools and play sports tournaments, but all of that has come to an end.

The parents have barred their children from leaving the school site because of the risk.

The covers of the children's exercise books bear the clearly written slogan 'Look carefully where you step,' taken from the lyrics of a song by Juanes, an anti-mine campaigner. And they can all sing snippets of the song: "look out when you're walking, don't let a mine blow off your legs".

The mayor of Samniego, Hérold Montufar, leader of the campaign to remove mines around the town, says that teachers are one of few points of contact with the State in this area. "The ELN has said it will remove mines, but the conflict is still going on."

There is an obligatory curfew. Secretary of Government, James Ibarra, reported that the community has chosen not to move around the town from five o'clock in the evening until six o'clock in the morning.

Shots are still heard around here intermittently, and mines can explode on pathways. A passing aeroplane may even open fire or drop bombs in, just as it did last November.

And the fear makes everyone unhappy. In the words of Lili, a girl with coffee-coloured eyes and a soft voice: "I can't leave home or school any more. I can't go out."

José Luis Valencia and Leonardo Castro
El Tiempo special reporters Samaniego (Nariño, Colombia)



Photo: © UNICEF-Paraguay/Luis Vera

FACTORS THAT DETERMINE THE SAFETY OF A TERRITORY

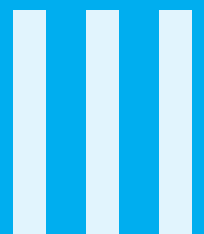




Photo: © UNISDR/Ruth Custode

A territory is the outcome of ongoing interaction between human communities and the ecosystems of which they form part or with which these communities are in some way related. In other words, it is the product of the interaction between nature and community.

A safe territory is one that has the capacity to offer inhabitants the satisfaction of their needs, one of which is integral safety: safety in the face of the hazards analysed in the previous chapter (of a natural, socio-natural or anthropic nature), such as earthquake, flood, hurricane, landslide, industrial accident or any other type: events that generally occur in a more or less exceptional manner.²¹

A safe territory is also able to offer protection and security against the hazards of daily life, those that are generally of more concern to people than the type of hazards mentioned above: the threat of unemployment and its consequences for those with no income; the threat of illness (generally when there is a shortage of resources for good medical attention); the threat of being mugged; of the violation of basic human rights; loneliness²²; discrimination for any reason; drug addiction... or all the hazards that arise from violence in general.

But a safe territory is one that protects its human inhabitants from the effects of all these hazards, whilst also protecting its ecosystems from the various hazards caused by human beings, These include: destruction of the vegetation that protects soil fertility, the stability of the hillside or the 'health' of a water catchment area; the diversion or obstruction of river beds and streams preventing water from its 'right to flow', water, soil and air pollution, and so on.

²¹Although this can lead to repeated disasters like prolonged droughts in some cases.

²²A large percentage of the 30,000 people who died in France in the heatwave of 2003 were old people who had been left alone by their families for extended periods of time, people who lacked the resistance and resilience needed to overcome the effects of the high temperatures.

All these and other hazards of an anthropic origin weaken the resistance and resilience of ecosystems, making them vulnerable to natural, social or human dynamics which become new hazards. For example: a moderate rainfall can cause serious damage in a deforested river basin previously able to absorb the effects of a torrential downpour with no adverse effects when the vegetation was intact.

The concept of **territorial safety** and security is therefore a **two-way** process: preventing the dynamics of nature from becoming hazards for human beings and the dynamics of communities causing hazards for ecosystems.

This incorporates the **human security paradigm** promoted by the United Nations since 1994 (with the constituent eight dimensions of security: economic, financial, food, health, environmental, personal, gender, community and political), but broadens coverage to include the security of nature, not simply as one more dimension of human security, but recognising this as a **necessary subject and partner** in the indissoluble marriage that results in a 'territory'.

We are not going to enter here into the arguments of whether or not nature can be considered a 'subject', and much less whether we should or should not recognise rights such as the 'right to flow' for elements like water. What is certainly the case, however - as has been seen in practice - is that when nature is treated and exploited as an object, as a resource that only exists for the unlimited well-being of human beings (for instance, when the 'right to run freely' is not recognised for water), nature 'gets its own back' sooner or later, and this 'settling of accounts' is often wrongly perceived as a 'natural disaster' by us.

If there is still any doubt in your mind, we need only look how the ecosystems of Louisiana behaved when Katrina struck. Destruction undertaken in the name of development over the last hundred years had led to the draining of wetlands, the destruction of mangroves, changes to the river courses and coastlines, all elements that had contributed to the strong 'immune system' of ecosystems that had been able to resist, and even take advantage of, the passage of hurricanes in their 'healthy' state.

In a simplified view of relationships that are really far more complex, we can say that territorial security is like a network or a spider's web, which hangs from a series of contact points, and whose resistance and resilience depends as much, if not more, on the links joining each point to the others, as to the strength of the points of contact themselves. In fact, very strong points of contact that are not connected at all, can lead to a weak or more vulnerable territory, than one with less strong points (when viewed in an isolated manner) but with solid interconnections between them.

As we will see, all these are directly related to the Rights of the Child.

We will call the first of these 'contact points' **food security and sovereignty**. This refers to the capacity of the territory to offer its inhabitants the food needed to maintain dignity, identity and quality of life, as well as control over these foodstuffs. In other words, the possibility the territory offers its inhabitants to access foodstuffs independent of the decisions of others who could use their power to gain control over the right to life of local people. The identity factor is crucial, as this is one of the factors that makes us feel 'at one with territory', it provides the meaning we give to the food we grow up with, the way it is prepared, the names we use for it and everything this means to us.

Principle 2 of the Universal Declaration of the Rights of the Child²³ states that:

The child shall enjoy special protection, and shall be given opportunities and facilities, by law and by other means, to enable him to develop physically, mentally, morally, spiritually and socially in a healthy and normal manner and in conditions of freedom and dignity.

This development depends, in all its aspects, on children receiving adequate and sufficient nutrition at each stage of development.

And Principle 4 is even more specific when it states:

The child shall enjoy the benefits of social security. He shall be entitled to grow and develop in health; to this end, special care and protection shall be provided both to him and to his mother, including adequate prenatal and postnatal care. The child shall have the right to adequate nutrition, housing, recreation and medical services.

Millennium Development Goals - Goal for 2015

To reduce by half the proportion of people who suffer from hunger and whose income is less than one dollar a day.

The next 'contact point' will be called **ecological security**. This is partly the capacity of the territory to offer the environmental goods and services required by the community in order to enjoy the right to dignity, identity and quality of life.

This is related to something referred to in 'sustainable development' as 'intergenerational responsibility'. The way current generations act toward nature affects the way nature will offer environmental goods and services to future generations (to the children of today and those not yet born).

And it is this intergenerational responsibility that will also decide whether or not, future generations will be made to pay the 'unpaid bills' generated by our erroneous actions. In other words, we are morally obliged to stop planting the 'seeds of disasters' that could affect future generations. Unfortunately, we must be clear about this, we have spent recent decades generating the conditions for climate change (most clearly evident in global warming). Even if we could somehow totally suspend the emissions causing this today, the outcome of any remedial measures would only take effect many years later. Future generations have the challenge of adapting to conditions on a planet very different from the one earlier generations were lucky enough to encounter.

Following the metaphor we have been using, it is up to us - and future generations - to reinforce the spider's web further, increasing its capacity to resist the effects of climate change (resistance) and to recover when affected (resilience).

We now return to the issue of which environmental goods and services we need the territory to provide in order for us to fully exercise the right to housing, the right to education or any of the other rights through which social security is expressed.

²³ Proclaimed by the United Nations General Assembly in resolution 1328 (XIV) of November 20, 1959 <http://www.unhcr.ch/html/menu3/b/25.htm>

The following list, that is not exhaustive, provides some idea of what we mean. The territory must be capable of offering us:

- Fertile soil for the production of the food needed to guarantee food security.
- Firm soil that can resist the weight of housing, schools and public buildings where our daily life takes place - even in the event of heavy rains, earthquakes and other phenomena.
- Ecosystems capable of absorbing rainfall and of channelling it to places where it can flow without endangering the community.
- Clean water to satisfy human needs and those of other living species - animal and vegetable - that share the planet with us.

Article 24 of the Declaration of the Rights of the Child says that the States Parties [...] must adopt appropriate measures:

To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious food and clean drinking water, taking into consideration the dangers and risks of environmental pollution.

Meanwhile, the **Millennium Development Goals** aim to halve the percentage of people without access to clean drinking water by 2015.

And Reports from the **Conference on Development and Environment (Rio+10)** clearly state that 'human dignity is inseparable from the right to clean water',



Photo: © PAHO/J.Jenkins.



Photo: © UNICEF-TACRO/Luis Vera

- Air clean enough for people to exercise the right to identity, dignity and quality of life. This does not only include the physical and chemical composition of the air, but also the **right to silence**, that is, the absence of noise exceeding the threshold to which human beings are adapted.
- Ecosystems capable of supplying the goods and services needed to generate the energy required by the community in the cleanest and most sustainable manner possible.
- Resistant and resilient ecosystems, capable of self-regulation to absorb the effects of changes in the short term (such as a volcanic eruption or a hurricane) and of long-term processes such as climate change.
- Diurnal and nocturnal landscapes that contribute to generating feelings of identity, of belonging and continuity, and which allow for aesthetic enjoyment of the territory of which we form part: **the right to landscape** and the **right to darkness**.

Another contact point, also closely linked to the above, as we have already seen, is that of **social security**. This includes the right to housing, the right to health and the right to education. As we already saw in previous paragraphs, it is not possible to fully exercise these rights where there are adequate environmental conditions and where there is no food security.

Economic security refers to the possibility of generating and enjoying sufficient economic income to access the goods and services available on the market. This includes, of course, the right to dignity in employment and decent pay, access to land for rural communities, the right to free enterprise and access to private and communal property, which is understood and exercised as a right with an ecological and social function.

Lastly, comes **institutional security**, or that commonly known as the 'Rule of Law'. This refers to a society ruled by pre-established and known regulations, where human rights are recognised and effectively fulfilled (including the rights to childhood, economic, social and cultural rights, women's rights and all the rights humanity has learned to recognise). Institutional Security includes the existence of certain public institutions and some effective procedures to ensure rights are respected and for these to be accessible to all human beings, regardless of their ethnic, religious, economic or social situation. Such security includes the concept of 'due process' a mechanism that operates in a society whose members relate with the State, and between themselves in accordance with clear 'rules of the game'.

Not to forget the message given a previous paragraph: all these 'partial securities' that have been discussed, are 'points of contact' on which to hang the links, or swings, that weave the network or spider's web as they interact with each other, providing the resistance and resilience on which territorial security depends. Very strong 'points of contact' that are unconnected to each other can lead to a weaker or more vulnerable territory than a group of weaker points solidly interconnected with an abundance of links strong enough to provide a more flexible and resistant fabric.



Photo: © UNICEF-Bolivia/Nathalia Liegielen

FACTORS THAT DETERMINE THE SAFETY OF A SCHOOL

IV

Two types of factors must converge in order for a school to be capable of offering safety to its educational community:

One of these consists of the structural factors, here termed the 'hardware' of education, which includes the buildings where the school is held, the furniture and equipment, and, of course, the quality and regularity of maintenance provided by one group and another.

And the other involves the non-structural factors, or the education 'software', which is related to educational institution's outlook on the world, humanity (especially its own students and teachers), the teaching and learning process, on relationships between the community and the school, and on itself. This perspective is implemented on the basis of instruments such as the Institutional Education Project, in the way curriculum content is approached and the methodology used for teaching and learning both theoretical terms and, especially, in practice²⁴.

We will start with the first of these:

Structural factors

The safety of the building or buildings where the school operates depends on factors like:

- The location of the school bearing the pressure of the lowest possible number of hazards of various origins, and community and institutional capacity to manage existing risks adequately in order to prevent them from resulting in disasters. We have already discussed this issue in the previous chapter and it can be summarised by saying that the school must be situated in a place described as fit for purpose under the respective land-use plan (always assuming that this plan were drawn up in an appropriate manner). For example: a school should never be located in a zone subject to landslide (high on a hillside prone to landslide or below the potential landslide line) nor in any area threatened by mudslides resulting from a volcanic eruption, melting glaciers or any other cause. Similarly, a school should not be located near a factory or other facility where an industrial accident could occur or near to military installations or other possible targets for armed attacks.
 - The structure of the building or buildings should have been designed and constructed in consideration of any natural, socio-natural or anthropic dynamics that may impact on it sporadically or in an ongoing manner. Thus for example:
 - In an earthquake zone, the architectural design and structure of the school must satisfy earthquake resistance regulations and requirements.
- The school must not only be capable of surviving the effects of an earthquake or any other event without collapsing, but the design must also include appropriate escape routes, doors that can open without obstacle in the event of an emergency, safe assembly places free of any risk of falling brickwork, posts, electrical cables, etc.

²⁴ We include the 'Draft variables and indicators to identify a safe school' produced by Orestes Valdes et al, with the Ministry of Education and the National Institute of Hydraulic Resources in Cuba, Havana (2008) at the end of this section, and Annex 2 provides the 'Questions for evaluating sustainability' that form part of the book 'Brújula, Bastón y Lámpara para trasegar los caminos de la Educación.' Ministry of the Environment, Housing and Territorial Development of Colombia and Gustavo Wilches-Chaux, Bogota (2007)

- Also, ideally, school emergency exits should not lead directly on to roads with heavy traffic.
- In an area subject to hurricanes or strong winds of any sort the design and construction of roofs, water tanks, billboards and antennae or aerials should receive particular attention. These, and all other elements forming part of or attached to the structure must be able to either resist the effects of this type of hazard or be installed in such a way that they can be easily removed preventively should the need arise. Elements such as zinc sheeting or ceiling tiles that can free themselves from the structure and become lethal hazards must be avoided at all costs.
- School building in areas alongside rivers or any other body of water should be beyond the reach of flood zones. When located on flood plains or similar areas, they should be sufficiently elevated to prevent normal levels of flooding from causing a disaster.
- In a zone with frequent or sporadic rainfall the building must have drainage and sanitation systems adequate to deal with the maximum levels of expected rainfall. This factor must also be taken into account when designing corridors, windows and other architectural elements. It cannot be stated too often that the design must be matched to the environmental conditions of school location, taking into consideration 'exceptional' events that could cause a disaster alongside the normal dynamics of the setting.
- In a zone exposed to potential ash fall from a volcanic eruption, the roofs, terraces, gutters, drains and other elements of the building must be designed and built to resist the additional weight they will have to withstand in such events. The characteristics of these must also facilitate rapid cleaning or removal of the extra load.
- In an areas of armed conflict where the school cannot be isolated from the effects, the structure of the building (walls, floors) must offer the highest possible level of safety to members of the school community and should be supplied with shelters guaranteeing special protection in the event of the school being caught in the crossfire.²⁵

Precautions must be taken with furnishing and equipment used for educational purposes in the school:

- The furnishing, equipment and supplies: must fulfil the common characteristics of all furnishing, equipment and other supplies to be used by children of various ages (such as: no sharp edges or other elements that could wound or cause other harm; the use of paint and materials that are non-toxic and flame resistant, and so on), and, as far as possible, the furniture provided in an educational institution must contribute to reducing the vulnerability of the users in the event of a offer protection in the event of an earthquake (one or more children could seek protection under each desk or table in the classroom and these could be deliberately designed to withstand a certain level of impact)

²⁵ One of the paradoxical situations prompted by armed conflicts is that the more solid and invulnerable the school structure may be in the face of an attack, the greater the danger it will be used as a bunker or shelter by an armed group. International Humanitarian Law (Articles 51 and 52 of Protocol 1) explicitly prohibits attacking civilian targets (including places of worship, schools and cultural monuments) and the use of 'such objects in support of the military effort' although unfortunately there is no guarantee that this will not happen.



Photo: © Gustavo Wilches-Chaux

- The location of the furnishing, equipment, supplies and other teaching materials: the furnishings and supplies of the school must be made and located in such a manner that they do not create additional hazards in the event of a hurricane or earthquake (falling on children or obstructing escape routes). Bookcases and other large pieces of furniture should be adequately secured to walls, heavy objects should not be stored on the higher shelves of furniture; cupboards, windows and other furnishings containing glass, receptacles, chemical products or materials that can cause some damage, must be fitted with systems that prevent the doors from opening and the contents from falling out. All containers used must be those recommended for the type of substances they contain.
- Furniture maintenance must be ongoing and appropriate: just as for the buildings, the furnishings must have been correctly designed, built and selected. The properties that made them safe will deteriorate if they are not adequately maintained. Hence, necessary maintenance must be maintained at appropriate intervals, including the repair of damage to furnishings and also ongoing review of elements including: the location of furniture, fixing to the walls, the safety devices and safeguards on which safe usage depends.

- **Emergency equipment:** Buildings used for an educational purpose must be provided with emergency equipment such as fire extinguishers, hoses, emergency cots, first aid boxes and the other elements necessary for dealing adequately and promptly with the people injured in the event of a hazard or in handling an emergency. The educational establishment should have a department or individual responsible for the maintenance and updating of this equipment and staff must be trained in how to use it.
- **Lighting:** the building must have an emergency lighting system that is activated in the event of a power outage.
- **Signage:** educational buildings have adequate signage of elements such as: escape routes, safe places in the event of an emergency or disaster, assembly points, the location of emergency equipment. These signs must be placed in locations chosen as the result of a technical inspection of the buildings by trained personnel, not by decisions taken in an arbitrary manner. The most important instructions of the emergency preparedness plan (as well as other information like emergency telephone numbers and the names of responsible parties) must form an integral part of the signage procedure and must be located in plainly visible places.
- **Data protection:** The educational institution must have strategies and systems in place to protect information vital to the continuity of the educational process in the event of an emergency or a disaster. These strategies and systems range from the protection of libraries, video stores and files (not only from exceptional hazards but also from every day factors such as dust and damp), through the daily production of safety back-ups or files containing academic and administrative information (qualifications, registers, student data, etc), to the identification and preparation of safe spaces (real or virtual) in which to store these files.



School Building Maintenance and Safety Manuals: tools for risk management in educational establishments



The Foundation of Educational Buildings and Furnishing (FEDE), the body responsible for educational buildings in Venezuela, with the support of the Fundación Banco Mercantil, published and distributed a series of 12 cards entitled 'Manuals of School Building Maintenance and Safety', a teaching tool offered to educational communities in the framework of training workshops within the National Plan for Maintenance and Safety in the School Building. The resource cards deal with issues including the school building, furnishing and equipment, emergency equipment, sanitary installations, electrical installations and other issues. There are also three cards specifically dealing with the 'School Emergency Preparedness Plan,' that help strengthen the non-structural factors underlying safety at school²⁶.

This type of instrument is ideal in incorporating risk management into the normal processes of building maintenance and administration in educational establishments, as they are flexible to the specific dynamics of the situation of each educational community depending on where they are situated in the country.

Other countries of the region, El Salvador and Costa Rica for instance, also use similar instruments.

The Regional Disaster Information Centre – Latin America and the Caribbean (CRID) webpage also provides access to many other documents on the school infrastructure in Spanish.

http://www.crid.or.cr/crid/CD_Educacion/index.htm

²⁶ The Foundation of Educational Buildings and Furnishing (FEDE) has been in existence for 32 years, working under the Ministries of Urban Development and Education, and under Housing and Habitat since 2007. The website can be found at: <http://www.fede.gob.ve/web/>

MOBILE MAINTENANCE AND SAFETY UNITS



These units are an initiative that arose from the need for a space in which to carry out the maintenance activities needed for a school building and its contents, whilst also providing a place to store tools. By supplying Mobile Maintenance and Safety Units to schools it will be possible to:

- Provide educational communities with the basic tools required to execute preventive maintenance in the school building and its equipment.
 - Provide a space for the storage of tools.
- Prepare communities for the correct usage of the Mobile Maintenance and Safety Unit.
 - Prevent the deterioration of buildings and their contents, in order to guarantee an environment better suited to the teaching and learning process. www.fede.gov.ve

FRAMEWORK OF PRIORITIES IN APPROACHING THE SCHOOL BUILDING:

Instrument for risk management in educational establishments

The Strategy for the Efficiency of Education Facilities, designed and implemented by FEDE²⁷ establishes a coherent process for dealing with all stages of the education sector: planning, programming, design, construction and maintenance of the school building whilst incorporating disaster risk reduction as a transverse and intrinsic key theme. The strategy states that once the Education Facilities Evaluation Instrument has been applied, priorities must be set for action to improve the **school building under the School Building Priorities Framework**.

This tool provides guidance for technicians in prioritising the order of actions to be undertaken in projects to improve the educational facilities in accordance with existing regulations. This guarantees that the establishment will be brought up to acceptable levels of vulnerability to the local natural hazard, achieving optimal functioning whilst also guiding educational communities on how to evaluate and promote any **mitigation actions that may be necessary**.

²⁷The Foundation of Educational Buildings and Furnishing (FEDE) has been in existence for 32 years, working under the Ministries of Urban Development and Education, and under Housing and Habitat since 2007. The website can be found at: <http://www.fede.gov.ve/web/>

The framework organises actions to be taken by first prioritising those related to safety and safeguarding the life and health of users, moving on to improved functioning and comfort, and leaving the aesthetics until last. Even though there is a general understanding that improvement of the educational infrastructure must be an integrated process that simultaneously resolves all these aspects, reduced budgets can sometimes result in partial or staged resolution of problems. This is the point at which the framework becomes a vital tool, providing reasoning to help rationalise the investment to be made on the basis of the levels of vulnerability and deterioration detected in the educational fabric.

The CRID webpage provides access to a great many documents on the issues of School Infrastructure (in Spanish) at: http://www.crid.or.cr/crid/CD_Educacion/index.htm

Non-Structural Factors (the Software of Education)

Non-structural and structural factors are complement each other in making the educational institution a safe space for occupants, users and the processes that take place within them.

The Institutional Education Project

The main non-structural factor is the Institutional Education Programme, which defines the perspective and political outlook of the educational community in terms of their perspective of what exactly constitutes a society, the school and the processes which take place within it. The document entitled 'La gestión de riesgos desde la escuela – Manual para docentes' produced by ITGD in Peru, states the following:²⁸

Every school has an Institutional Education Programme that describes the school aspired to by the entire educational community. This contains a description of the school we would like to be, how we would like to be identified, the levels of excellence we aspire to, the type of teachers we should have, the type of men and women that we hope to educate; all of which provides guidance for educational activity.

Within such a framework, we understand that if we aspire to a solid institution which fulfils all its objectives, we must also be concerned by anything that threatens this. This common sense approach obliges us to incorporate risk management into the Programme.

The Institutional Education Programme also contains definitions of the current school perspective and that of the educational community in general, setting the basis for the development of concrete tools for risk management. This includes the school's own risk management plan, which is specifically designed to this end, the profile of students leaving the institution, the way they relate to the surrounding community and how they play their part in solving the problems facing the community.

In other words, the Institutional Education Programme establishes the conceptual and methodological framework within which a 'safe school' is built, along with guidelines to help the school contribute outwards toward the construction of a 'safe territory'.

²⁸Another important ITGD contribution to the issue is the joint publication with Save the Children UK (2003) entitled "Riesgos de desastre y derechos de la niñez en Centroamérica y el Caribe" by Pedro Ferradas and Neptaly Medina. This publication can be found in full (in Spanish) at <http://www.crid.or.cr/crid/idrc/HerramientasGLR/Pdf+mhts/doc28/NinezyDesastres.pdf>

The Programme also contains – or forms the basis for - rules for coexistence providing a framework for relationships between members of the educational community. Following this guidance will guarantee the safety of community members to a large extent - particularly the most vulnerable. Candidly speaking, in very many cases school is not a safe place for children and young people (and sometimes not for directors, teachers and workers either). This is generally not because the structure lacks earthquake resistance or is unable to withstand a storm, but rather because of the level of aggression towards weaker members of the community from more abusive or exploitative individuals, or as a result of various types of harassment imposed on some members of the school community by others. The Programme must also establish mechanisms that guarantee rules for coexistence are observed, allowing those on the receiving end of abuses to enact institutional control mechanisms without increasing the hazards to themselves. This establishes something within the restricted territory of the school that would be the equivalent of 'legal and institutional security' in the broader territory of the community in general.

Environmental education and risk management education

A long period of reflection in Latin America has led to budding recognition that risk management education is a specific application of environmental education. Environmental education has a long history in the region and has achieved tangible results in its contributions to a quality education. In this situation, it would be pointless to cut new paths through the forest of education when others already exist that were built step-by-step with great difficulty. For these will already take us to the same place: a more sustainable relationship between nature and the community.



DEL SUELO AL CIELO (IDA Y REGRESO)²⁹

Enrique, the hero of this story, is a 15-year-old boy who increased his enjoyment and interest in science after spending the holiday on his grandfather's farm and taking part in an 'educational experiment' mounted by the Biology and Earth Sciences teachers at school, with support from the head teacher, who was responsible for teaching Ethics.

'Discussion sessions' on the cosmos formed the basis of the educational experiment and were attended by Enrique's grandfather - a character with a mysterious past involving exploration and life as a sailor - who took the role of guide for the teachers and students, helping them to 'navigate' along the waterways and through the starry night. Meanwhile, teachers and students helped guide the grandfather in 'navigation' on the Internet, seeking the latest photographs and scientific reports on the dynamics of the cosmos, and particularly those phenomena relating to environmental and risk management.

²⁹ Gustavo Wilches-Chaux, International Committee for the Development of Peoples (CISP) and Disaster Prevention and Response Office of Colombia (DGPAD). Project ECHO/TPS/219/2001/03002, Bogota, (January 2003).

The 'material' used to feed the discussion sessions included observations of nature, the content of the school curriculum (reorganised according to 'navigation charts' or 'maps' drawn up by the Science and Biology teachers), daily news reports from the television and written press, Internet pages (some of which had been discovered by Enrique's little sister and her group of friends), readings related to issues in the book (contributed by a friend of the science teacher) and direct contact of the group with nature and the harsh reality of the violence in Colombia over the last few decades.

Once the text was complete, the Head Teacher proposed that the participating teachers and students should collate their acquired knowledge and experiences into a 'School Risk Management Plan' in conjunction with the local Committee for Disaster Prevention and Response. The Plan did not arise as an additional load on top of other school activities, but as a natural outcome of work already undertaken allowing for the practical application of knowledge acquired in 'discussion sessions' and lessons in various subjects.

In Latin America in general, and Colombia in particular, many materials are already available for environmental education and risk management, most of which are of very good quality in terms of educational value, visual impact and content. As a result, CISP and the Disaster Prevention and Response Office had no reason to produce another 'conventional' teaching pack, which meant that we were able to explore other format options, where guidance for teachers and students would not occur merely as an annex to the main text, but would form an integral part of the story itself. In the case of 'Del Suelo al Cielo (Ida y Regreso)', the main teaching guidance is implicit in the 'educational environment' the text aims to inspire and transmit in each and every paragraph. And I personally would feel great satisfaction if the story were to encourage readers to partake in dialogue in an active and critical manner; 'dipping their spoon' repeatedly into discussion sessions, expressing their individual points of view, their concerns and their suggestions.



BRÚJULA, BASTÓN Y LÁMPARA PARA TRASEGAR LOS CAMINOS DE LA EDUCACIÓN AMBIENTAL³⁰

This book aims to serve as a support document to aid in understanding and application of the National Policy on Environmental Education adopted jointly by the Ministry of the Environment, Housing and Territorial Development and the Ministry of Education of Colombia. It also aims to explore advances made on an educational proposal principally based on the environmental education that has been gaining ground in the country in recent decades. This proposal is built on contributions from both theoretical and practical bases, from academia (ranging from schools to universities), and from field work by non-governmental and social organisations, public institutions linked to the National Environmental System (SINA) and frequently from joint and concerted efforts between various 'combinations' of all these contributors.

³⁰Ministry of the Environment, Housing and Territorial Development of Colombia and Gustavo Wilches-Chaux Bogota, (2006). http://www1.minambiente.gov.co/ministerio/educacion/brujula_baston_lampara.pdf

The book asks: what makes an education 'environmental'?

The answer, in summary, is that it is a form of education based in concept and practice on a 'values system' that includes respect for life in all its forms, citizen participation, democracy, intergenerational responsibility, supportiveness and reciprocity, equity, a gender perspective, understanding of the situation as part of a complex system and an interdisciplinary approach.

An 'environmentalised' education must also include political elements giving actors and students the capacity to participate actively in building a society; it must teach the humility that is a prerequisite for 'knowledge dialogues' and 'ignorance dialogues' amongst other things; it must prepare students to redefine the concept of 'development' and the way in which this should be applied in different territories and contexts; and, finally, it must 'educate for wisdom' which is a concept very different from the mere accumulation of information.

Consequently, the objectives of education cannot be satisfied by simply achieving dialogue between the various human disciplines, as it should aim to transcend these. This means not only a commitment to intellectual ends, but also contributions toward the development of all human faculties, including those that are not strictly rational.

One way of achieving this is through development of the School Risk Management Plan, providing an opportunity to practice the interdisciplinary and transversal approach and to gain the commitment of all members of the educational community with a concrete shared objective. Furthermore, the Plan then constitutes a 'toolbox' that could mean the difference between life and death for many members of the school community at some point in the future. It is no coincidence that risk management education is one of the key strategies of the National Policy on Environmental Education.

Environmental education provides us with the conceptual tools we need to understand the various natural dynamics that interact on a local and global level (in the biosphere and on the planet that sustains this in general). It also allows us to recognise how human beings relate to these dynamics: showing how we are both influential and dependent on these, in positive and negative ways. It also provides guidance on how we can lead these relationships toward increased sustainability.

Risk management education, meanwhile, helps us to identify which of these dynamics could present hazards to human beings and which of our activities could represent hazards for the ecosystems. It also teaches us to recognise the risks arising from a combination of various hazards added to the vulnerability of nature and the community. Above all, it shows us how we could act to reduce these risks and prevent them from leading to disasters.

It seems to me that the last two paragraphs simply say the same thing in different words.

The question of how to make issues like the risk management aspect of environmental education 'transverse' in practice has not yet been totally resolved, but advances have been made in this direction through experiences in environmental education. The content cannot simply be boiled down into an additional curriculum subject, as the issue must be present in all academic and extracurricular activities, including school administration, in one way or another.

In several countries of the region, processes are under way to incorporate risk management into the curriculum. Teachers in various disciplines are being asked to identify openings for the issue in their programmes of study, and they and their students are asked to take the challenge and become risk managers for the educational community. Earth Sciences, for instance, could study processes leading to the formation of hazards. Social Sciences could increase understanding of the human factors that increase risk. Language and Communication are important tools at various levels: increasing understanding of disasters as the outcome of problems in communication between nature and the community, or between various actors and sectors of humanity; or seeking the best way in which to disseminate risk management and disaster prevention objectives and methodologies in the school community. Hygiene and Health teachers, meanwhile, could lead first aid training in the educational community.

SOME PROCESSES UNDERWAY FOR THE INCORPORATION OF RISK MANAGEMENT IN THE CURRICULUM

Nicaragua: Conceptual, methodological and programming curriculum proposal to incorporate risk management education

Guatemala: Basic national curriculum including risk management at a pre-primary and primary level

Honduras: Inclusion of the risk management issue in basic national curriculum design

Panama: Revision of primary and mid-level education processes in order to add risk management content

El Salvador: Inclusion of the risk management issue in the educational coverage of primary education programmes

Costa Rica: National Education Plan for Disaster Risk Reduction (PLANERRYD), which forms the basis of risk reduction education in Costa Rica http://www.crid.or.cr/crid/CD_Educacion/pdf/spa/doc15094

On a subregional level:

'Incorporation of the risk management/disaster prevention and relief issue in the education framework in the curriculum of the various different levels and modes of the educational system in the countries of the Andean sub region'

This activity (still underway in June 2008) executed by Support to Disaster Prevention in the Andean Community (PREDECAN), uses a framework from one of the programmes of the Andean Strategy for Disaster Prevention and Response adopted by the Andean Committee for Disaster Prevention and Relief (CAPRADE).

This project has explored the current situation of the issue in the educational systems of the sub region. Twelve concrete risk management experiences have been described for use in schools, all containing significant elements of curriculum involvement. The issue has also been incorporated into public policy through the use of conceptual and methodological guidelines designed for this purpose.

The process has provided opportunities for discussions between educational authorities, curriculum compilers, teachers and risk management activists in each country and efforts have been made to identify opportunities for and constrictions on achieving the foreseen objective. Critical issues have been approached, including: the integral and systemic nature of the issue; the true meaning of 'transversal' and the methodological challenges of putting this into practice; the close relationships between risk management and environmental education; the lack of follow up and evaluation; etc.

It has been noted that the issue is commonly approached by considering the disaster as a discreet fact, with the attention focussed on the emergency. In fact, in educational terms the new concepts such as at risk, vulnerability, sustainable development, risk management with a rights focus and other related issues are of greater importance, but curriculum builders have not been stimulated into producing new proposals. However, exceptions occur when the issue is approached within, or closely alongside, environmental education. This method offers niches and routes for pedagogical exploration of risk management which have been developing for several decades.

Factors critical to the incorporation of risk management into the curriculum, include: ownership of the process by the educational community (as opposed to the 'imposition' by external actors); the need for follow up and conceptual and methodological support; coordination between actors; incorporation of the issue into the Institutional Education Project; school outreach work in the community; and community participation in school for risk management projects.



GUIA METODOLOGICA PARA INCORPORAR LA GESTION DE RIESGOS EN INSTITUCIONES EDUCATIVAS

This guide was drawn up as an outcome of the Disaster Preparedness and Risk Reduction in the Sandia River Basin – Puno Region Peru project, undertaken by Peruvian non-governmental organisation PREDES and OXFAM with financial support from ECHO/DIPECHO. The document aims to accompany Peruvian teachers to formulate an Institutional Education Project incorporating risk management to the curriculum, and goes on to discuss to what extent it is possible to incorporate and develop the issue within curriculum planning in regular primary education.

All these academic exercises can and must flow together into the development of **School Risk Management Plans**. These plans identify the risk factors affecting the educational community and suggest approaches to these - or the people responsible for decision-making on these - in order to manage them correctly and prevent disasters from happening. The School Emergency Preparedness Plan forms an important chapter of the **Risk Management Plan** that aims to prepare the educational community for adequate response in the event of an emergency or disaster. (See Annex 1: **A guide for the production of school participatory risk management plans**)

It is important to be aware of that risk management education does not end with the existence of a school emergency preparedness plan, nor will it be complete nor concrete if this plan is not included as one of its outcomes.

Risk management plans are equivalent to the measures taken by maritime authorities, the shipping company and the ship's crew to reduce the possibility of a shipwreck as far as possible. Emergency preparedness plans are the measures these same actors adopt to rescue the shipwrecked sailors and to reduce losses when a shipwreck occurs in spite of all their efforts to the contrary.

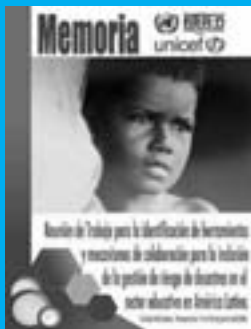
It is absolutely certain that the shipping company's plans will include measures to guarantee that passengers will be able to continue their journey to their destination even if the ship is abandoned. Similarly, school plans must anticipate how and where the educational process will continue should a disaster render the school infrastructure unusable, or, should it be used as a shelter when left in good condition, or should local conditions prevent safe access or use of the building.

Responsible institutions

The following people are responsible for taking those measures necessary to guarantee that schools are safe from the point of view of structural and non-structural factors:

- **Education ministries and educational authorities on a national level** in general; individuals responsible for educational infrastructure who must implement and apply national policy on school safety in accordance with the guidelines arising from **national systems of risk management and citizen protection** (or their equivalents in each country) of which they must form an integral part.
- The main **political authority** at the appropriate level for the educational institution. Thus, for example, if the school is a municipal school, the responsibility for building a school with appropriate characteristics or reinforcing those that are inadequate, lies with the **mayor**, through the intermediation of the municipal education office. If this is a small municipal area with insufficient economic resources, the mayor's office must assume responsibility and lobby higher authorities in order to achieve this end.
- The **educational community** of the respective institution, led by the **head teacher**, the parent associations, teachers and students in general. It is the responsibility of the school directors to procure the resources necessary to make the school 'safe' (in the terms we have used in this document) or to fund relocation where it is found to be in a zone of 'non-mitigatable risk'. Similarly, the educational community must recognise that **the safety of the school in its structural and non-structural aspects is a right that must be claimed and exercised**.

- The emergency services, such as: civil defence, the Red Cross, the fire service and others that may exist locally, can contribute to school safety in various ways. They can provide warnings about various types of risks facing an institution, they can co-operate in managing these in order to prevent disasters, or they can accompany schools and provide training in the educational community in order to implement school risk management and emergency preparedness plans.
- The media can become allies of the educational community when they are aware of the cause, helping to motivate decision-makers toward adopting the measures needed to guarantee school safety.
- The community in general, on the basis of recognition of the importance of the school institution within the community.



'Identifying Collaboration Tools and Mechanisms for the Inclusion of Disaster Risk Reduction Management in the Education Sector in Latin America' UNICEF and the International Strategy for Disaster Reduction (ISDR) called a working meeting of this name in Panama on June 14 to 16, 2006.

Content: Reports from the meeting can be seen (in Spanish) at: <http://www.eird.org/esp/tallereducacion.pdf>

Draft variables and indicators to identify the safe school

This draft list taken from the document 'School and adult community Environmental education and disaster prevention' can be used as a tool to 'evaluate' the safety level of a school Authors: Dr C. Orestes Valdés Valdés, Dr Jorge Mario García Fernández, Pedro Juan Ramos Pérez, Anabel Braña González, Mayrene Rodríguez Ramos.³¹

Variables:

- 1) Systemisation of environmental education and disaster prevention at school.
- 2) Improvement of environmental education and disaster prevention at school.
- 3) Dissemination of environmental and disaster prevention education.

³¹ The document forms part of the project 'A prepararnos y protegernos: educación ambiental y en desastres' currently underway in various river basins in the Republic of Cuba, Ministry of Education and National Institute of Hydraulic Resources of Cuba (2008)

1. Variable: Systemisation of environmental and disaster prevention education at school.

Indicators:

- Established gardens and areas with medicinal plants
- Established school vegetable gardens
- Nursery areas for forest regeneration
- Disaster reduction plan in place
- Risk map in place
- Civil defence programmes in place
- Civil defence programmes fulfilled
- Civil defence preparation plan for head teachers, teachers, or workers and students in the school
- Centre prepared to meet disasters
- Evacuation and fire protection brigades in place
- Environmental and disaster risk education actions included within the school long-term plan

2. Variable: Improvement of environmental and disaster prevention education at school.

Indicators:

- Existence of interest groups and scientific societies with established documentation
- Civil defence exercise training plan
- Documentation for the 'Ejercicio Meteoro' weather risk evaluation programme in place
- Registration and monitoring of worker and student attendance at civil defence classes and exercises
- Disaster reduction director role appointed
- Existence of means by which to transmit warning signals
- Existence of protective devices in schools in areas where dangerous substances may escape

3. Variable: Dissemination of environmental and disaster prevention education:

Indicators:

- Health prevention tasks undertaken
- School declared as being free of sources of infection
- General sanitation activities, cleaning and aesthetic improvement of the centre
- Recovery plan for raw materials and recyclable products
- Raw materials and recyclable products recovered
- Water and electricity economy plan
- Reduction of water and electricity consumption

- Family and community participation in school activities
- Establishment of work agreements with community representatives
- Presentation of experiences at events and local forums
- Effectiveness of the 'Ejercicio Meteoro' and of disaster or emergency simulations
- The school as promoter of territorial safety
- Continuity of quality education in the event of a disaster
- The school as shelter
- Contribution of the school to the normalisation process following a disaster



Photo: ©Gustavo Wilches-

OTHER ISSUES FOR DISCUSSION



The school as promoter of territorial safety.

Without a doubt, schools do not have power over most of the factors that contribute to a territory being integrally safe. They often do not have the capacity to oversee the positive transformation of these factors. However, this does not mean the educational community cannot exert great influence over the decision-makers responsible for this.

In the previous chapters of this document we have discussed several of the reasons why we think school safety is directly proportional (and also dependent upon) safety and security in the surrounding territory. Schools – and educational communities in general – are open systems, constantly interchanging people, materials, energy and information with their surroundings.

The educational community has the right to demand that control be exercised over the risk factors affecting the territory they occupy. Risk management is a right in itself (which is rarely recognised, claimed or honoured), but it is also a pre-requisite in order for the other human rights to be exercised. For example, how can we exercise the right to life if we are not able to survive the dynamics of our natural surroundings? How can we exercise the right to education if the school is built on ground exposed to landslide or flood in a heavy downpour?

The school also has interests in its own level of safety advancing in parallel, or even in conjunction, with the safety of other institutional and social actors within its local territory. If, for example, the school is structurally safe in the face natural or anthropic hazards like an earthquake or an armed attack but other vital installations of the community, like the building for the Mayor's office or the police station are not as safe, the school would remain standing while the other buildings would collapse in the event of a disaster. The strength of the school would then become a vulnerability (or the vulnerability of the others would become a hazard to the school), and it would be practically inevitable that the public offices or the police station would be promptly moved into the school, at least until their buildings were rebuilt.

Further on we will discuss the motives that may prompt the use of schools as shelters as well as some alternative strategies that could present other options. This is related to the insecurity of the territory surrounding the school.

If all members of the educational community - from sector authorities, through teachers, parents and on to students - recognise and understand the processes upon which the safety of the school depends, they could organise themselves into a pressure group to demand effective respect for the rights that protect education and life.

In some cases, the educational community can have a direct influence on some of the factors affecting the quality of the surrounding environment. School environmental projects, for example, seek to establish alliances between the school and other institutional and social actors working toward the resolution of some of these problems: conservation activities on the stream running through the neighbourhood; a project to economise on supplies and energy; an alliance with neighbouring communities to improve a public space, a park or a stream. And if environmental management of the territory is implemented as recommended around the concept of the 'hydrographic basin' or local watershed area, school projects can become a valuable tool for the school - and the educational community in general – linking in to a target that reaches out far beyond its walls.

The ultimate objective of these projects is not only to resolve or contribute to the resolution of the problem, but also to train people and provide them with the political and technical capacities required to manage their communities. Children and young people can be trained as social players through these school activities, something that will surely make them more responsible and active citizens with greater leadership capacity.

School risk management projects or school emergency preparedness plans, as we said before, are specific applications of environmental education that contribute to improving safety at school but that also produce citizens capable of building a more sustainable society in a safer territory.

The fact that children form one of the most vulnerable population groups in society can be used as a strength. Many national constitutions and legislations, governments, conventions and international organisations give priority to children and grant protection to their rights, an element that constitutes an advantage in efforts to build safe schools (in both structural and non-structural terms), and that can be extended to the quest for greater integral safety in the territories surrounding them.



Photo: © Gustavo Wilches-Chaux

PROPOSAL FOR ADULT INSTRUCTION AND EDUCATION IN THE COMMUNITY³²

A holistic study of any community will include the relationship between the society and nature as well as any transformations that occur as a result of this relationship. It is common for teachers to lead children to study the environment surrounding the school, undertaking explorations and investigations in subjects such as geography, biology, chemistry, history, literacy and art, to name but a few. However, teachers are not always aware of all the indicators they should bear in mind, whilst undertaking such activities.

If the aim is to integrate knowledge in the community, it would be advantageous for the teachers to establish methodological contacts within the community before undertaking projects, setting out the basic content (knowledge, emphasis on the conceptual system, skills and values). Such action would allow them to establish relationships with the community. They should also make preparatory visits to the community in order to establish where their project activities should be undertaken, a practice that would allow them to fulfil their proposed objectives whilst also establishing a risk management checklist for the community.

The following could be borne in mind during the study and the later compilation of the risk management checklist: physical characteristics, economic characteristics, history, demographic characteristics, levels of education and culture, recreational and sporting activities, health and local environmental problems.

The following section shows some aspects to bear in mind during work in the community, that can be supported by the 'Guía para el estudio en el terreno de la situación ambiental de la comunidad: Diagnóstico e intervención por parte de la escuela en un problema medio ambiental de desastres y gestión del riesgo de la comunidad' (Field study guide for the environmental situation of the community: analysis and intervention by the school in an environmental problem related to disasters and risk management in the community). Studies undertaken as environmental exercises in the community, have led to identification of the following stages:

- 1.- Analysis and description of the community - in order to assess the status of the natural and socio-economic environment, levels of preparedness, education and development of members of the community, as well as their main economic occupations.
- 2.- Planning and guidelines for the plan of action - consisting of the prior preparation of a system of actions or tasks by establishing the objectives, aims, methods, means and resources necessary to mitigate the environmental problems facing the community.
- 3.- Execution - the practical implementation of educational actions designed in the previous stage, demonstrating their feasibility, efficiency and validity.
- 4.- Monitoring of actions and impact analysis - an ongoing process of verification and updating of the actions being executed and the impact of these on the community. By this stage, the school and community will be aware of the true stage of development of the process, along with the difficulties they face and the achievements they have made. The reasons for any insufficiencies become clear as do ways in which to deal with these.

³²Note: Taken from the document 'Escuela y comunidad adulta: educación ambiental y prevención de desastres' Orestes Valdés Valdés et al, Ministry of Education and International Institute of Hydraulic Resources of Cuba, (2008)

General suggestions

- a) The organisation and execution of activities such as: scientific events, symposia, seminars, discussion sessions, panels and exhibitions, so that students can display the outcome of the work undertaken to their parents, family members and other citizens resident in the territory.
- b) The activities can be undertaken in the schools themselves, health centres, houses of family physicians, surgeries and institutions, work premises, factories, industrial centres, agricultural co-operatives, basic cooperative production units, video display rooms, cultural spaces, communities, neighbourhoods and any other places where there are the conditions appropriate for a large number of people to assemble.
- c) Assemblies or activities involving pupils and citizens of the region can be held while practical investigation of the various themes is underway, or at the end of the project for a conclusive presentation and debate.
- d) All the events and activities organised can occur in an ongoing manner, making the most of school holidays when there are less activities going on in schools. We recommend that assemblies for presentations, exchange and debate of the outcome be organised and celebrated at key points such as the end of the school year, or at a time the school deems appropriate.
- e) Events and activities undertaken in non-school institutions must have undergone sufficient prior organisation to ensure adequate preparation when these occur, for example, in health institutions, premises belonging to the water and sanitation systems, cultural spaces, video presentation rooms and recreational facilities.
- f) Teacher's groups can invite political organisations, student groups and bodies representing other sections of the population, as well as entities, ministries and institutions whose dependencies and delegations are in or near local territory, or adjoining the water collection basin and national parks.
- g) When pupils present their work to the local community at these assemblies, the audience can be invited to join voluntary schemes to carry out aesthetic, sanitation and hygiene improvements. Such drives can lead to environmental, agricultural, forestry and other improvements, using the active participation of parents, family members and the rest of the community in disaster prevention, risk reduction and environmental protection.

The continuity of quality education in the event of a disaster

School safety is also defined as the capacity to guarantee the continuity of a quality education even when the school, or the community to which it belongs, is struck by an emergency or disaster. This can also be described as the capacity to guarantee respect for a child or young person's right to education, even in the event of an emergency or disaster, always considering the safety of the educational community, especially that of the most vulnerable population, as a priority.

The degree of safety is largely dependent on the capacity of the educational community to adequately

manage the psycho-affective effects of the disaster on any of its members who are directly or indirectly affected, either by itself or through external support. This issue is far too broad to deal with in these pages, but we will provide a few examples of work on in this field from Cuba as an illustration⁶:

Stress-related disturbances

Following a catastrophe, people can develop serious stress or post-traumatic stress disorder - a psychological problem that can occur as the result of experiencing, witnessing or participating in an extremely traumatic or terrifying event. Disturbances that appear immediately are known as 'serious stress syndrome' and those that arise after a lapse of time of varying length are known as 'post-traumatic stress disorder'.

Children with these disorders experience repetitive episodes where they relive the traumatic experience. These children often tend to relive the trauma by repeatedly acting it out in their games. In small children, upsetting dreams about the event can become nightmares with monsters, or where they rescuing others from hazards facing themselves or others.

Parents should look out for the following changes in a child's behaviour:

- Refusing to return to school and clinging behaviour, shadowing their mother or father around the house.
- Recurrent fear related to the disaster (including fears such as permanent separation from their parents).
- Sleep disturbances, including nightmares, night frights and bedwetting that last beyond the first few days after the event.
- Poor concentration and irritability.
- Being easily scared and anxious.
- Behavioural problems, for example, bad behaviour at school or at home in a way that is not typical of the child.
- Complaints of physical illness (stomach aches, headaches, dizziness) for which no physical cause can be found.
- Isolation from family and friends, sadness, apathy, reduction of activity and preoccupation with the disaster events.

³²Escuela y comunidad adulta: educación ambiental y prevención de desastres', Orestes Valdés Valdés et al, Ministry of Education and National Institute of Hydraulic Resources of Cuba (2008)

Disturbance can be prevented or minimised through professional counselling or treatment for children affected by the disaster, especially those who have witnessed destruction, injury or death. Parents who are concerned about their children can ask their paediatrician or family doctor to refer them to a child psychiatrist.

Knowledge of the protective factors and how to use them is the most effective measure for avoiding psycho-affective damage in children and adolescents. The following actions are suggested to this end:

- Organise groups of young people, women, teachers, and members of the community as workers and advisors, both before during and after the disaster.
- Train staff working with children in all aspects related to promoting protective factors, avoiding risk factors, the early identification of disturbances and ways in which to deal with these.
- Governmental and non-governmental community organisations must lead strategies to organise all tasks in a co-ordinated and systematic manner.
- Avoid the separation of children from parents or other significant adults.
- The family must be made aware that it is important to maintain emotional contact by cuddling children frequently, above all at bedtime.
- Provide guidance for the family in order to keep the family together in their daily routine as far as possible, depending on the situation of each individual family.

The structural and non-structural factors, we have already discussed remain influential, whether or not an educational centre - or the educational community in general - has the capacity to guarantee respect for the right to education of children and young people in the event of an emergency or disaster. However, even when the school building is unusable as the result of the disaster, the school as institution can still be in a position to guarantee continuity of the process if there is sufficient community participation, decision-making capacity and support from the authorities. Similarly, the educational process can be interrupted or upset even when the building is not damaged at all, if, for example, it is temporarily ascribed for other uses, or if the people who form the educational community are directly affected or become dispersed as an outcome of the disaster.

The stated aim of guaranteeing 'the continuity of education in disaster situations' does not imply that we overlook the fact that education, and its constituent processes developed, are open systems that interact in a close and ongoing manner with the environmental dynamics. How then can we prevent the disaster from affecting 'normal' schooling?

To propose that the teaching and learning process continue its course in the midst of a disaster as though nothing had happened is not only impossible but would be unforgivable. On the contrary, the drive for 'continuity' means approaching the challenges generated by the disaster creatively in order to bring education (its content and methods) closer to the situations and demands of the setting.

In order for this to be possible, the education authorities must establish contingency plans including strategies to:

- Rapidly identify and equip alternate facilities where the school can continue to function if its buildings are affected or are commandeered for use as shelters or other purposes.
- Create and train ad hoc or 'emergency' teams of directors and teachers to support the educational institution where their own staff are affected or cannot continue to perform their duties normally. Teams of teachers can be formed from members of the community who have undergone previous training and who have been identified for this purpose, or with teachers from other places, or a combination of both options.

In emergency situations, the recruitment and selection of teachers and educational personnel must be participatory, transparent and based on established criteria. Whenever possible, educational staff must be selected from amongst the affected population. This will allow for the integration of traditional cultures, customs and experiences that respect positive practices, the belief systems and needs of those affected into their educational curricula.

Once recruited and linked in, the teachers and educational staff must work together with the community to develop a code of conduct and establish working conditions. Teachers and other educational staff must be employed on a contract, which explain their rights (salary or incentives, work hours and routines, conditions of work, and so on) their responsibilities and duties. The code of conduct must establish clear regulations for teachers and educational staff, whilst also specifying the consequences that will face persons who do not comply with these regulations. Seeking help for education from amongst the affected population will help in both the recruitment and retention of teachers and other educational staff and will encourage parents or guardians to send their children to school.

MINIMUM STANDARDS FOR EDUCATION IN EMERGENCIES, CHRONIC CRISES AND EARLY RECONSTRUCTION Inter-Agency Network for Education in Emergencies (INEE) www.ineesite.org

- Pre-design specific training and rapid in situ methodology for these 'emergency' teaching teams.
- Adapt timetables and the intensity of use of available spaces, taking into account the level of impact and the time at which the disaster strikes in the school year, the situation of the community and the school, and the real possibilities of normalisation in the affected area.
- Adjust content and method to the situation experienced in the affected communities. This includes the creation and training of advisory teams who can be transferred to the disaster zone to support directors, teachers, parents, administrators and workers within educational institutions and the student population, in order to provide teaching and administrative support.
- Define, in conditions of 'normality', which priorities and objectives of the educational process should remain unchanged, and which can be modified or even eliminated in the event of a disaster. The outcome of this definition will form a compass to guide the teams referred to in the previous point.

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



These standards are the outcome of work by the Inter-Agency Network for Education in Emergencies (INEE), a global network of more than 100 organisations and 800 individual members, who work jointly to lobby for the right to education in the emergency situations and reconstruction following a crisis. The network is responsible for collating and disseminating information on education in emergencies, promoting the right to education for those affected by these and lobbying for regular exchange of information between members and associates. The INEE is led by a group of directors made up of representatives from CARE in the United States, the International Rescue Committee, the International Save the Children Alliance, the Norwegian Refugee Council, UNESCO, the Office of the United Nations High Commissioner for Refugees (UNHCR), UNICEF and the World Bank.

The Minimum Standards are based on recognition that people do not lose the right to education during emergencies, and that education cannot remain outside the main current of humanitarian debate, and should be seen as a priority humanitarian response; and in the desire and broad commitment to lobby for a minimum level of quality, access and responsibility to education in crisis situations.

The document containing this information provides a guide for decisions making and execution in order to guarantee the continuity of quality education in disaster situations, concentrating especially on the role played by the local community in achieving this objective, both during the process of evaluating the effects of the disaster and the resources available to deal with these, and in the execution of activities to recover the educational process.

The complete text of the standards and other complimentary documents, including a Training Materials on use of the standards can be found at <http://www.ineesite.org/page.asp?pid=1056>

Minimum Standards Manual:
http://www.ineesite.org/standards/MSEE_report.pdf

The school as shelter

Ideally, of course, school buildings would not be used as shelters for families and people who should have been evacuated in a preventive manner or those who have lost their houses as a consequence of the disaster, nor should they be used for any other purpose than that for which they were built. However, the main feature of a disaster is that it is a disastrous, meaning that it becomes impossible to maintain these ideals in most cases where a disaster occurs either in the immediate environment or in the vicinity.

Very few communities (if any, at least in the 'Third World'), can grant themselves the luxury of having buildings exclusively designed and maintained as shelters in case of disaster. When the need arises, what normally happens is that public buildings such as sports centres, cultural centres or convention facilities, places of worship or, more recently, schools are used for this end.

This is not always the consequence of an emergency or disaster within the territory of the school either: sometimes groups of people from areas further afield are forced to abandon their own lands and to move temporarily or permanently to places where they can be protected from a given hazard. If the host areas are not equipped with any more viable alternatives (such as large stretches of unoccupied land, where a camp can be set up), the aforementioned public buildings will be commandeered, and educational institutions (the State run institutions at least) will form part of this group.

In all cases, the temporary change (sometimes for long periods) in the use and function of these spaces, creates a great deal of stress for the community, even when it is just a case of the park or sports field being covered in tents, or the use of green areas as rubbish dumps. The occupation of these spaces leaves large sectors of the population unable to access resources essential to their quality of life.



Juan Tacaxoy is a volunteer fireman in Panabaj. He woke up around midnight to find a river of mud two metres deep heading towards his home. "I started to shout at my brothers," he recalled, "but they couldn't do much because the house was surrounded by mud". "About 10 minutes later, this was followed by water full of sand, and a little later by rocks and tree trunks." He did not even have time to be scared, because the adrenalin was pumping around his body. He was one of the lucky ones. Although his house disappeared, all 13 members of his family survived. "It was a miracle, but the children were traumatised," said Juan Tacaxoy. Another fire officer, encourages him to sing to his children, to hug them and find ways of laughing with them. He has taken his family to one of 30 by shelters

that have been organised in schools, churches and government buildings in the centre of Santiago Atitlán. <http://www.santiagoatitlan.com/Disaster/disaster1s.html>

The next few pages list some of the measures that can be taken to minimise the negative impact of the use of educational institutions as shelters:

- Prior identification of alternative locations to be used as shelters in the event of an emergency or disaster, such that schools and educational institutions in general are only used for this purpose as a last option when there are no other or insufficient other alternatives available.
- Avoid as far as possible, the coexistence of school activity with other uses. This implies predefinition of where the schools should go (including recreational spaces) should it become impossible to avoid using the building as a shelter.
- If coexistence cannot be avoided, there must be a separation between the places where schooling activities occur and those used as shelters or storage, always bearing in mind, as a priority, the safety of the educational community (including environmental sanitation). New and serious threats can arise for the educational community, and particularly for the child population, from the coexistence of other activities. Prompt and adequate risk management must be exercised in order to prevent further damage.

- School property must be protected, including libraries, files, laboratories, and recreational and sport facilities and equipment, etc.
- If it has become impossible to avoid using the school as a shelter, guarantees must be in place that it will be in a reasonable state when returned to habitual use, and, wherever possible the opportunity should be taken to improve deficiencies that existed prior to use as a shelter (for example: extending and improving sanitary provision, reinforcing structures, improving playgrounds and pitches). Ideally, the inconveniences arising from the use of the school as a shelter should be compensated for with tangible benefits for the educational community and facilities at the school, such as additional water tanks, water purification systems, and waste management systems.
- In the same event, deadlines for returning the educational establishment to its original function must be established and fulfilled as far as possible, avoiding the situation (as has sometimes occurred) of entire families remaining indefinitely at the school long after the disaster has occurred.
- If suitable conditions exist, the educational community must be involved in administration of the shelter, and to activities that aim to provide a greater quality of life for users of the shelter in general, as long as they remain in the school. This will not only permit the educational community to exercise a degree of control over school facilities and property, but will encourage the formation of links with protection and recovery efforts for communities most affected by the disaster. There are remarkable examples of such programmes in Cuba, where some educational institutions have groups of children and young people as cultural and recreational volunteers, using their talents to lead activities that make the lives of people evacuated to temporary shelters more bearable.

The school contribution to normalisation following a disaster

The prompt renewal of educational activity interrupted as the consequence of an emergency or disaster constitutes a priority for the affected community for various reasons.

The formal membership and participation of children and young people in the educational system constitutes an achievement by their corresponding families, representing past and present investment of resources and effort. Every school year successfully completed, especially in poorer families, represents a step forward in the quest for better opportunities and living conditions. Education continues to be one of the most important factors in the progress of a community.

Meanwhile, the vast majority of parents need to ensure that their children are being kept occupied and cared for by responsible people while they are working away from home. The complementary occupation and caring functions are two of the most important services offered by the school alongside education.

When school fails to operate for any reason, including a disaster, parents with no alternative source of childcare are forced to leave their children (young children and adolescents) to care for themselves, quite often out in the streets.

Communities surviving a disaster have been observed to live through various well-defined stages. At the beginning, there is an impact stage (while event is taking place and in the hours immediately following

this) which is followed by an emergency stage, when the priority is to rescue victims and trapped people, to deal with the most serious injuries, save those who are at most risk and avoid any further damage as far as possible.

Slowly, each geographic and social sector will begin to move at its own pace from emergency to rehabilitation or recovery - a stage which partially overlaps with the emergency stage in most cases.

The community affected directly or indirectly by the disaster, begins to differentiate between hours of rest and hours of work, people spend more time at 'home', even though this may now be an emergency shelter, a hut or a tent. Those who have a job will try to find out if it still exists, and should the minimum necessary conditions exist, they will return to work. A new routine begins to be built, even in the midst of the very precarious conditions caused by the disaster. Mothers get up in the mornings to make breakfast for their families and dependents; they wash and dress their children and take or send them to school, even though this is now operating in 'on loan' facilities, in a tent or under plastic sheeting.

As well as being practical, all the activities described also constitute the daily routines necessary for material and symbolic recovery of control over a life beyond the consequences of the disaster. These are processes of individual and social healing, where the real or apparent 'normalisation' of educational activity fulfils an extremely important function.

The completion of a school year, the obtaining of another 'grade', the possibility of the return to celebrations of important community events as before the disaster, indicate that life is winning the game, that life still goes on.

We must not forget that the school directors, teachers and administrative personnel – and their families and property - are also often directly affected by the impact of the disaster. Therefore, they must personally go through all the various stages and rituals, meaning that they will require support from educational authorities and institutions like the teaching universities. Just such support was offered by the Francisco Morazán National Teaching University in Honduras when the earthquake struck Marale in 2007 and the institution provided accompaniment for those teachers affected.

Safe schools in safe territories in ethnic communities

We think that everything said on these pages is valid, and indeed becomes more evident, in schools in ethnic communities - those with a key link in belonging to and identification with an ethnic group and a specific culture.

In most cases these schools are enactors and engines of an ethnic education that, 'as a system, constitutes a process through which the members of a people internalise and construct knowledge and values, and develop skills and abilities in accordance with the features, needs, aspirations and cultural interests that allow them to adequately perform in their environment and project themselves and their identity toward other human groups.'³⁴



Photo: ©UNICEF-TACRO/

To a large extent, their education is based on the lack of separation between the daily life of the community and the life of the school, the learning of the children constitutes a direct and ongoing exercise in communication with individuals in the community who are considered wiser because of their greater knowledge, their age or their function within the group.

One important achievement of ethno-education, which should also inspire the teaching and learning processes in the so-called 'wider society', is the close link between education and the processes on which this depends, for example, food security or coexistence with natural dynamics in the surroundings.

Cultures whose survival down the centuries has depended largely on maintenance of ongoing dialogue with these dynamics have developed a series of strategies by which to maintain this dialogue. These include the reading of 'bio indicators' or signals emitted by the surroundings in an ongoing manner, that announce when changes will occur or that provide guidance on, for example, what the weather might bring in the coming days or months.

Some of these signs are simple 'common knowledge'. Others can only be identified or interpreted by wiser members of the community (shamans, amautas, yapushiris, jaibanas, the 'walas, and

³⁴ La etnoeducación: una dimensión de trabajo para la educación en comunidades indígenas de Colombia', Luis Alberto Artunduaga, In: Revista Iberoamericana de Educación, No.13. - Educación Bilingüe Intercultural. Organisation of Ibero-American States (OEI) (In Spanish) <http://www.oei.org.co/oeivirt/rie13a02.htm>



Photo: ©UNICEF/Luis Vera

similar individuals). In both cases, the school (in the 'broadened' sense that goes far beyond the building where schooling takes place) aims to transmit this knowledge to children, in order for it to form part of their identity and to maintain their capacity to relate to their territory in a sustainable manner.

These signals, for example, are fundamentally emitted by early warning systems (indicating when it will be necessary to activate the school emergency preparedness plan), for land-use (saying which activity can or cannot be undertaken in each place within the territory – for instance, where to build a school), and to understand and encounter as a real-life experience, processes that are normally covered in 'subjects' such as history, biology and earth sciences.

Ethno education - at least theoretically - does not renounce the contributions that can be made by 'Western' science, but takes them up and integrates them within the cosmovision and knowledge and values framework of the corresponding culture. This approach enables the education provided to qualify the identity of the individual and the community, and their capacity to interact with the territory.

As a result, the main function of education for risk management in this type of cultural and social environment is not so much to incorporate this interdisciplinary approach within the culture, but rather to recognise how the culture itself is a compendium of strategies on how to adapt to the dynamics of the territory, to strengthen these strategies, make them explicit, enrich them with other sources of knowledge and to guarantee their survival as collective heritage.

But on top of the conceptual and general elements stated above, there are particular features of ethnic communities that must be taken into account in risk management, particularly in disaster or emergency situations: for example, the concept of 'orphans' in wider society is not always applicable to these communities, where the social group immediately welcomes, adopts and protects children left parentless for any reason. As a result, the idea of establishing hostels or hospices for orphans is meaningless in these communities.

Similarly, psychological recovery (or mental health) support for those affected by a disaster, including children, must be provided in a particular manner where the local culture is taken into account. Many cultures possess their own 'soul healers' who presently fulfil and have fulfilled this function through the centuries. Any external intervention must aim to consolidate these cultural resources, rather than displace or compete directly with them. The same principle also stands in attempts to temporarily or permanently substitute teaching personnel lost by the school as a consequence of the disaster, and in all other aspects of risk management related to ethnic communities in general.



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A GUIDE FOR THE PRODUCTION OF SCHOOL PARTICIPATORY RISK MANAGEMENT PLANS

Annex: **1**

A GUIDE FOR THE PRODUCTION OF SCHOOL PARTICIPATORY RISK MANAGEMENT PLANS³⁵

School Risk Management Plans are a tool with two main objectives:

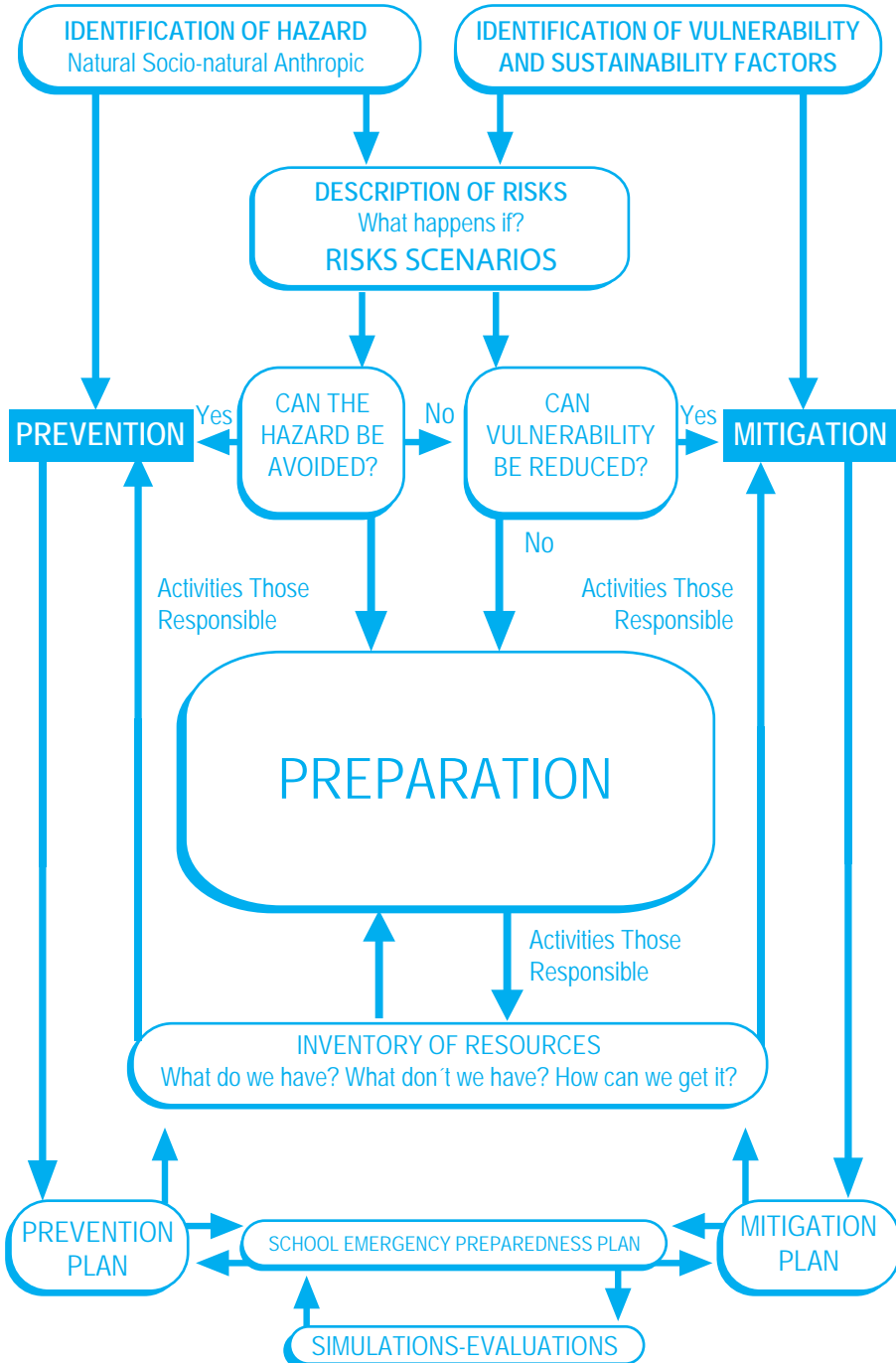
1. To know the risks that may affect the school community at a given moment, and to work collectively and in a participatory manner on the causes of this in order to: stop these risks from becoming disasters; make preparations in order to reduce losses; respond more adequately and facilitate recovery in the event of an emergency or disaster.
2. To prepare the school community, including the students, directors, teaching staff and parents, where possible, to incorporate risk management into all their daily activities.

School Risk Management Plans include the following components:

- a. Awareness of hazards of various origins (natural, socio-natural or anthropic) that can affect the school community at a given moment.
- b. Awareness of vulnerability and sustainability factors that weaken or strengthen the capacity of the school community to resist the effects of the said hazards without trauma, and identification of those actions necessary and possible in order to anticipate hazards and mitigate vulnerability factors.
- c. Prior identification of risks or adverse consequences of a hazard that could be suffered by the school community in the event of a disaster. (Risk = Hazard x Vulnerability).
- d. Preparedness measures allowing adequate response to an emergency or disaster situation, in terms of reducing the loss of property and human lives and to facilitate recovery.
- e. Identification of the resources available to the school community in order to respond adequately in the event of an emergency or disaster.
- f. Evaluation of the capacity of the education centre to support the surrounding community in the event of a disaster. (This demands the best possible knowledge of the risk scenario affecting this community.)
- g. Directory of people responsible for the various activities of risk management in the school community, in the municipal and regional area - the local and regional disaster prevention and response committees CLOPAD and CREPAD.

³⁴ Adapted from the text '¡NI DE RIESGOS! – Herramientas Sociales para la Gestión del Riesgo' by Gustavo Wilches-Chaux and Simón Wilches Castro, published by the Fund for the Reconstruction and Redevelopment of the Coffee Belt (FOREC), Bogota (2001) and published for the first time in Wilches-Chaux, Gustavo, 'Del Suelo al Cielo (Ida y Regreso)' publication of the International Committee for the Development of the Peoples, CISP/DIPECHO (2003). This annex was also published in the book 'Brújula, Bastón y Lámpara para trasegar los caminos de la Educación Ambiental' by Gustavo Wilches-Chaux, Ministry of the Environment, Housing and Territorial Development of Colombia, Bogota (2007)

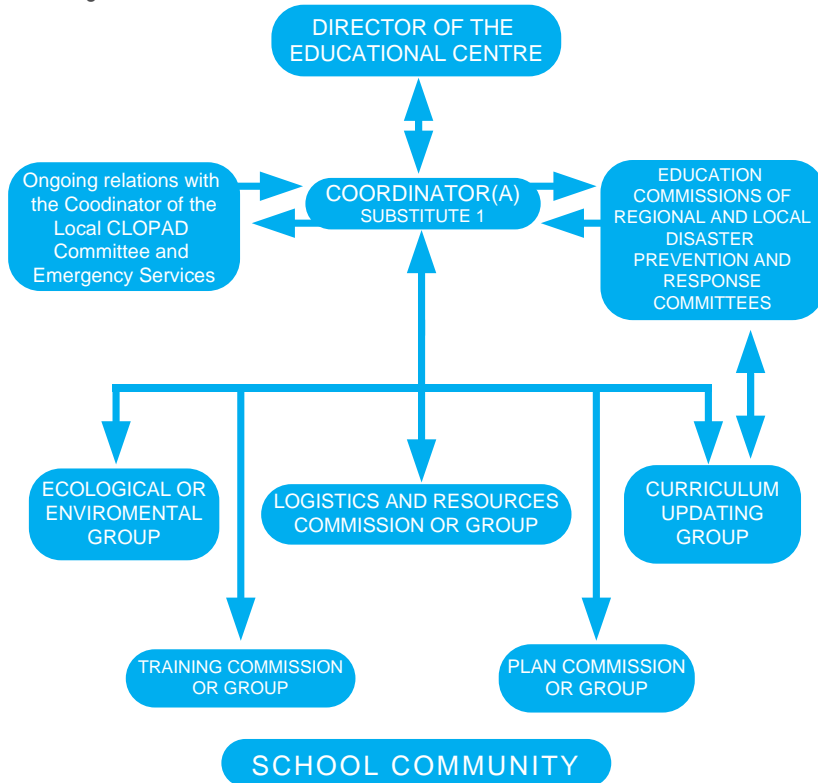
ITINERARY FOR THE PRODUCTION OF A SCHOOL RISK REDUCTION PLAN



The ongoing production, validation and updating of the School Risk Management Plan is the responsibility of the director of each education centre. The head teacher must be supported by the School Risk Management Committee, the composition and function of which will be discussed further on, who are always aware that that risk management is a normal and proper function of their role that cannot be delegated.

Every educational establishment must have a School Risk Management Committee, constituted as a general rule in the following manner:

Notes on the diagram above:



The existence and operation of the committee, which must be provided as far as possible with the necessary resources, is a responsibility that cannot be delegated and that requires the political will of a school director.

The chair of the school committee must be an enthusiastic teacher, not overeager on leadership, with an educational sense of leadership and a lifelong commitment to the issue. They must view the role of chair of the committee as an opportunity to move forward in their life project and contribute to their human and professional development. Preferably, although this is not obligatory, they should be a trained and experienced volunteer in some form of rescue service (civil defence or the Red Cross), and even more desirably, they should be members of environmental groups or activities: a pursuit that would allow them to understand and assume risk management as a tool in environmental management for sustainable development.

Each committee must designate at least one substitute chair with similar features to the main chair, someone capable of taking over the committee and its activities in the absence of the main chair.

One of the main functions of the chair is to stimulate and strengthen ongoing and effective participation on the committee from students, parents, workers in the centre, and the entire educational community in general.

The committee will develop its objectives through commissions or groups of teachers and students, each taking on specific issues or responsibilities that are interrelated in some way.

Each committee will decide on the number of its constituent commissions or groups, bearing in mind that only those committees with the will and capacity to operate should really exist.

The following list suggests possible committees and their respective functions:

ECOLOGICAL OR ENVIRONMENTAL GROUP

Responsible for promoting and carrying forward activities on environmental education and awareness, reforestation, organic agriculture, waste disposal and recycling, energy saving, and in general, all issues aimed towards improving the quality of relationships between the school community and its ecological setting. (There are frequent discussions over whether the term 'environmental' should be preferred to 'ecological' but no conclusion has yet been reached. For some people, including the author, 'environmental' covers all aspects related to the environment where the life of the community or a person takes place, including social, political, cultural, economic and, of course, 'ecological' issues, which refer specifically to the natural dynamics of the territory).

PLAN COMMISSION OR GROUP

Responsible for constant updating of the risk management plan on the basis of monitoring changing hazard and vulnerability conditions, and determining the need for resources and training. This function is very important because a plan becomes ineffective when it goes out of date due to changing conditions in the education centre or its surroundings.

TRAINING COMMISSION OR GROUP

Responsible for first aid training, fire control and other skills that increase the response capacity of the school community. It organises simulations that ensure the plan remains updated, running ongoing information and motivation activities within the school community. Some plans look perfect on paper but do not work when put into practice. Such weaknesses can be detected through simulations, where performance is evaluated and the conclusions of these evaluations are used to adjust the plan.

LOGISTICS AND RESOURCES COMMISSION OR GROUP

Responsible for managing the economic and material resources needed in order for the plan to fulfil its objectives, from participation in drawing up the school budget, to fund-raising activities and acquisition of equipment.

CURRICULUM UPDATING COMMISSION OR GROUP³⁶

There should be ongoing revision of the curriculum and programmes in order to promote risk management and environmental management through various subjects. One of the great successes of our plan is that, as we have already said in the text, it arose as a 'natural' outcome of an educational experience involving the head teacher, two teachers, students and some family members within our school community. As a result, we do not view the plan as something imposed from outside, but as offering an opportunity to put into practice everything that we have learned in the school year.

TASKS

IDENTIFICATION OF HAZARDS

A School Risk Management Plan should start with the identification of the various hazards facing a school, including all those that affecting the region where the educational establishment is found.

We already know that there are: **natural hazards**, those that arise from processes within the dynamic of nature; **socio-natural hazards**, those that are expressed through nature, but which are caused directly or indirectly by the intervention of human activity; and **anthropic hazards**, which are those clearly derived from human activities. Several of the figures within this document clearly show that hazards do not generally occur in an isolated manner in reality, but as **hazard chain reactions**. This means that certain hazards unleash others, such as when an earthquake causes landslides, or when the confusion generated by a natural phenomenon leads to looting or other civil unrest.

When analysing the hazards which can affect the education centre, schools can use the support of local disaster prevention and response committees (CLOPAD) and other institutions, such as the Autonomous Regional Corporations (CAR), universities, and others, that can provide and explain studies and the hazard maps for the zone, providing risk maps and other information that could be useful to the School Risk Management Committee.

³⁵ When Carlos Alberto Jiménez, Colombian researcher and author of several books on teaching, creativity, leisure, recreation and human development was kind enough to read the draft of this text, he sent me the following commentary on curriculum updating groups: 'I would change the name to curriculum building groups. The curriculum must be considered as a living entity that first organises itself, is then organised and finally develops (autopoiesis), and is not simply the study plan as seen in the traditional view. Alternative environments for education must be considered such as leisure, ethics, recreation, social, technological, communicative, so that the curriculum can expand beyond subject categories (biology, chemistry, etc). It is also necessary to clarify that there must be a justification, foundation, aim and problem to be resolved provided each of these environments. If you would like to have your own 'virtual' or even 'real' conversations with Carlos Alberto, or to see more about his work, see his website at: www.geocities.com/ludico_pei

Two especially interesting challenges for the school committees and the school community in general (directors, teachers, students, parents, workers, members of the community) are:

- One, incorporating risk management (and environmental management in general) into each and every curriculum area, subject and activity within the education plan or curriculum, such that risk management does not become an 'add on' or marginal activity, but a central component of education for coexistence in society and within the surrounding environment.
- Two, incorporate 'community knowledge and memory' into school activities, as a way of reducing the educational vulnerability of the school community and society in general. Community memory on changes that have occurred in the surroundings can be a tool to facilitate education on the 'Participation of Nature' in programmes and activities within the school.

Community memory lives in the experiences and memories of older people, in songs and legends, in books written by local authors (many of which are not sold commercially but have to be sought in family collections or libraries), and, very importantly, in the local place names used within the territory. When, for example, the dry bed of a small stream is named 'Quebrada Grande' (Big River), there are two possibilities: one, that water has never flowed along this river bed and it was named by a compulsive liar, and, two, perhaps more probably, that once upon a time, an enormous quantity of water flowed along this riverbed in a temporary or permanent manner. When someone is thinking of building a settlement along the banks of such a river, they should investigate the origin of the name in order to ensure the water will not reclaim its ground in the future, causing a disaster. The loss of the original names within a territory is a form of amnesia.

Examples of natural and socio-natural hazards:

- Active geological faults that can generate earthquakes
- Tsunamis as a consequence of local or distant tidal waves
- Active volcanoes and potential eruptions (and the collateral effects)
- Hurricanes
- Strong winds
- Electrical storms
- Unstable hillsides presenting the threat of landslide
- Floods

Examples of anthropic hazards:

- Technological accidents
- Transport accidents
- Violence (notwithstanding our reservations on classifying violence as just one hazard)

IDENTIFICATION OF VULNERABILITY AND SUSTAINABILITY FACTORS

The following questions serve as a guide in evaluating vulnerability factors (or sustainability factors) that negatively (or positively) affect the capacity of a school community to deal with a given hazard and to recover from its damaging effects.

These are not the only examples of positive or negative questions, but they aim to provide an example of the various aspects to be evaluated in order to determine the vulnerability or sustainability of any given educational establishment.

1. Physical vulnerability/sustainability factors, due to location:

Where is the educational centre in relation to identified hazards?

For example: distance from active geological faults, quality of soils upon which the building is placed (rock, man made in-fill, and such substances), distance from landslide or floods zones, etc.

2. Structural vulnerability/sustainability factors:

How is the education centre built?

Does it have an earthquake resistant structure? (Adequate foundations columns and beams structure and weight of roofs design of layout and so on.)

Are the roofs capable of resisting strong winds, additional weight due to the accumulation of ash, heavy rainfall, hail, etc?

Do we know when the building was built and who designed, surveyed and built it?

Has the building been well maintained? (Structure, walls, roofs, floors, electrical, plumbing and sanitary installations, drains, gutters and down pipes, etc).

Have changes being made that could affect its structural resistance? (For example: construction of an additional floor, demolition of walls and columns, etc?)

Are there special safety strategies for laboratories and other areas where chemical products or inflammable materials may be kept?

3. Economic vulnerability/sustainability factors:

Are there sufficient resources available for the School Risk Management Plan in the education centre budget?

Are there mechanisms in place to allow resources to be raised from outside the school budget?

Does the poor economic situation of members of the school community make them especially vulnerable to hazards in the environment?

Does the poor economic situation of the neighbouring community make it especially vulnerable to hazards in the environment?

4. Organisational vulnerability/sustainability factors:

Does the educational centre have active groups or organisations like a parent group, ecological or environmental groups, sporting clubs, musical groups, etc?

Do parents take an active and deciding role in the school community?

Are there leaders amongst the directors, teachers and students who have positive attitudes and real influence on the school community?

Do teachers and students have and demonstrate a sense of belonging within the school community?

Do the directors and teachers belong to the community?

Does the education centre have full information on each of the students? (Home address and telephone number, work address and telephone number of parents, etc)

5. Political vulnerability/sustainability factors:

Does the school community get its aspirations and needs taken into account by the authorities?

Do the content and methods of the education provided contribute to the formation of a 'political culture' among students?

6. Educational vulnerability/sustainability factors:

Do the contents of the various subjects, curriculum areas and methodologies with which these are delivered, contribute to students possessing a greater knowledge of the dynamics of their surrounding environment and to their participation in the construction of a more sustainable relationship with this?

Does the education incorporate community memory into its content? (For example: Is intergenerational dialogue encouraged?)

Is full advantage taken of the educational possibilities offered by the immediate surroundings? (For example, using streams as a living laboratory to teach natural sciences?)

Does the education offered truly contribute to the ethical and citizen education of students and the school community in general?

7. Cultural vulnerability/sustainability factors:

Does the education provided contribute to the building and adoption of a 'prevention culture' in the school community? Are values and attitudes such as solidarity, democracy and participation recognised and practised within the school community?

Do the parents understand and assume their responsibility in the education of their children, and in the good operation of the school community?

Are there problems of drug addiction, vandalism, or similar issues in the school community or surrounding community that weaken response capacity in the event of a hazard?

8. Ecological vulnerability/sustainability factors:

Is the ecological setting of the school community, adequately conserved, or is it the source of hazards and a vulnerability factor? Do the various members of the school community understand the dynamic of their natural surroundings?

9. Institutional vulnerability/sustainability factors:

In this section we shall concentrate exclusively on the capacity or weakness of the school institution to respond adequately to an emergency or disaster situation:

Is there a committee for risk management, or some equivalent operating within the school?

Does this contain representatives of the directors, teachers, students, workers and other elements of the school community?

Are there enough people with the necessary training to organise simulations, direct evacuations, deliver first aid, mobilise the wounded, prevent and control fires and execute the activities required in an emergency situation?

To what extent are the school buildings independent in terms of water reserves and electrical supplies, sanitary services and communications?

Does the institution have enough equipment and supplies in terms of: first aid boxes, cots, fire extinguishers and communication equipment?

Does the institution have the physical and logistical capacity to support the surrounding community in the event of an emergency or disaster? (Is it possible, for example, to convert the educational centre buildings into a temporary shelter or supply base, including facilities for lodging people, food storage, drinking water supplies, environmental sanitation and security for the school property and buildings?)

Does the school institution have the capacity to support members of the educational community whose families have been affected by a disaster?

What would be the capacity of the school to normalise academic activity, as soon as possible - even if only provisionally – in the event of a disaster?

I IDENTIFICATION OF RISKS

Risk is the product of a conjunction of a given hazard with vulnerability or weakness factors that affect the capacity of the school community to resist the effects of a given hazard without trauma ($R = H \times V$), the identification of risks consists of us asking ourselves: 'What would happen if...'

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

- What magnitude? (the magnitude is indicated by the energy released and is measured on the Richter scale)
- How deep? (the more superficial the earthquake, the more damaging for communities near the epicentre)

We must always remember that the capacity of installations to resist movement will be greater if they are built on rocky or firm soil than if they are on gravel or man made in-fill. They will withstand better if they have earthquake resistant structures and are well maintained, rather than being a mud brick house with a clay tile roof, or one that has not been well maintained.

If the building falls down in an earthquake, what losses will be experienced in terms of human lives, injuries, property, furniture and equipment, books and documents, etc.?

The same type of questions could be asked in the face of other natural, socio-natural or anthropic hazards, like for example, a volcanic eruption, a flood, a landslide or rock-fall, a fire, a blizzard or snow-storm, an electrical storm, an armed attack, or other such elements.

We must remember that the factors that make community and its property vulnerable to certain hazards are not necessarily the same as make them vulnerable to others. For example, a wooden building that would not be very vulnerable to earthquake could be very vulnerable to fire. Or a building on the slopes of a mountain, could be quite invulnerable to flooding because of its location, but very vulnerable to landslide.

We must also remember that risk is of a changing nature, whereby any situation analysis must be updated periodically. What may represent a serious risk today could be insignificant tomorrow, and vice versa.

And we must not forget that what would be vulnerability factors for some communities and some ecosystems, could be the cause of hazards for other communities and ecosystems. Thus, for example, the vulnerability of a deforested river basin signifies a flood and landslide hazard for communities living lower down.

IDENTIFICATION OF RESOURCES

Once the risks have been evaluated and we know ‘what would happen if...’ we must proceed to identify the resources available to the school community in order to prevent the hazards (whenever possible), mitigate vulnerability factors, or respond adequately in the event of a disaster.

For example, if we are facing a seismic hazard there is nothing we can do to prevent it, whereby work must be carried out on the vulnerability factors.

Resources available to mitigate the structural vulnerability of the building would include education sector budgets for the retro-fitting of school buildings or for their relocation when they are in a risk zone.

If the hazard is due, for example, to the poor level of conservation of a river basin, where the educational centre lies, resources could be provided by the Autonomous Regional Corporations (CAR) or by non-governmental environmentalist organisations (or the agencies that fund them), with the school community and its neighbours providing the labour needed to clear the watercourse, to carry out conservation tasks, collect seeds, organise nurseries or work on reforestation. In this case, an active ecological group or a biology teacher with conservation knowledge would be important ‘assets’ in reducing vulnerability.

Parents with knowledge of engineering or construction could also contribute. They need not necessarily carry out the work required to reinforce or adapt the building, but they could at least help to evaluate the vulnerability of the school building and recommend work needed. Volunteers from emergency services linked to the educational centre could contribute training for rest of the school community, or they could initiate contact with those who could take this training forward.

There will undoubtedly be many people capable of contributing toward the reduction or mitigation of the various vulnerability factors within any school community.

Resources needed for response begin with the plan itself. This constitutes a true resource where it is not just a written document, but where the various components of the school community have taken ownership of it. The next greatest resource is a properly functional school committee, and other resources include:

- Trained and motivated individuals
- First aid provision
- Fire prevention and control
- Physical spaces available or adapted to deal with and classify the injured, to shelter victims and to protect the more vulnerable people (children, old people, the disabled)
- Means of transport

- Telecommunications equipment (landlines and mobile phones, radio telephones, CB radios, Internet)
- Notice boards, sound equipment and other local means of providing information
- School newsletter
- Video and photography equipment
- Computers, software and people trained to use these
- Megaphones, torches, various tools
- Economic resources available in emergencies

Stores of water

- Independent energy sources (electrical generator, gas canisters, etc.)
- Food and drink stores (school supplies)
- Information such as:
 - Details of the school community
 - Municipal emergency preparedness plan listing those in positions of responsibility
 - The meaning of warnings and alerts
 - Scientific information and instructions provided by authorities
 - Resources that could be contributed by parents

SCHOOL EMERGENCY PREPAREDNESS PLAN

The School Emergency Preparedness Plan fundamentally involves a group of decisions that should be made by the school community on how each person is expected to behave in a crisis situation before any event occurs.

Risk analysis provides us with a prediction of what could happen in the event of an emergency or disaster - an element known as the 'Risk Scenario'.

Once the resources available within the community have been identified for a given risk scenario, the emergency preparedness plan determines how to deploy these resources, while anticipating any potential obstacles that could arise. For example, every school risk management committee it is recommended to have a coordinator and a least one equally well-trained substitute in case the post holder were absent in the event of a disaster, or if they or their family were seriously affected, preventing them from assuming their responsibilities.

The School Emergency Preparedness Plan must include aspects such as:

Alerts, warnings and alarms: ways to inform the community of an imminent phenomenon capable of unleashing a disaster; the meaning of each alarm and how to behave on hearing these.

- Main and alternative means of transmitting these alarms (for example, an electric siren may not work in a power cut, whereupon a bell or another substitute system would have to be used).
- Definition of who is authorised to activate the alarms.
- How to behave in the event of a hazard capable of unleashing a disaster (for example: what to do if there is an earthquake while the children are in school).
- The creation of brigades responsible for controlling fires, providing first aid, etc.
- Definition of a person or persons responsible for making contact with the media and providing 'official' information on the situation of the education centre. What to say, when and how to say it, and who to say it to.
- Definition of those responsible for coordinating emergency response on different days of the week and at different times of day or night.
- Decisions on measures that must be taken to guarantee the safety of people, facilities and property within the education centre. Definition of those responsible for safety issues.
- Alternative measures and contingency plans.
- Measures to guarantee the safekeeping of the academic and administrative files of the education centre. Copies of these must be kept in various locations, including the Internet, backups or backup copies on electronic media, updated at least once a month.
- Prior decisions on the conditions necessary to justify an evacuation, how to carry this out, alternative routes and assembly points.
- Decisions on which part of the building is safest for each type of hazard and an organised manner in which to access and occupy these locations. The capacity of these locations. The definition of alternate locations.
- Complete data on the school community. (directors, teachers, students, workers, administrative and support staff), indicating their age, blood type, special needs (example in terms of the use or restriction of certain types of medicines), address and telephone number of their family members, contact people, and so on. Several copies of this data must exist (both printed and in electronic form) in various places accessible in the event of a disaster. Identification of especially vulnerable groups or those with special needs (younger children, the disabled).

- Decisions taken jointly with parents as to where they should meet their children in the event of a disaster.
- Decisions taken jointly with parents on how to obtain information from the education centre in the event of a disaster (assuming problems such as congestion or the failure of telephone lines, difficulties in access due to road blocks). The Plan should prioritise communication, with one or radio broadcasting systems to provide parents with information on the situation of the buildings and their occupants.
- Locations in which to administer first aid treat and classify the injured, etc.
- What to do in the event of death.

The commissions responsible for the plan and providing the training must plan and execute **Regular Simulations** in order to validate the plan in practice and update it to the changing circumstances of the school community and its setting.

An Emergency Preparedness Plan can work inadequately or go out of date in the following circumstances:

- Where political will is lacking amongst school directors and teaching personnel, failing to give this the priority it deserves and to put it into practice. This support does not only consist of economic resources, but includes the time devoted to the issue by teachers and students, academic stimuli, negotiations with education and municipal authorities, etc.
- Where the plan is written but not accepted socially by the various components of the school community, whereby they have not taken ownership of it.
- Where the plan is written but not validated or tested in practice through simulations.
- Where the people who drew up the plan (directors, teachers, students, etc) have left the education centre and those who replaced them have not taken ownership of this.
- Where the plan has not been regularly updated and when the time came to put into practice in an emergency, the hazards and vulnerabilities had changed, as had the details of actors and the characteristics of the establishment (for example when a plan mentions exits that have been closed).
- Where the minimum resources needed to put it into practice definitely do not exist.



Photo: ©Gustavo Wilches-Chaux

QUESTIONS TO EVALUATE SUSTAINABILITY

Annex: **2**

Taken from the document: *'Brújula, Bastón y Lámpara para trasegar los caminos de la Educación Ambiental'* Ministry of the Environment, Housing and Territorial Development of Colombia and Gustavo Wilches-Chaux, Bogota (2007)

There is no simple definition of what sustainable development means in practice, and this makes it difficult to evaluate whether a decision or process is actually contributing to the increased sustainability of a community, or, on the contrary, making it more vulnerable.

These questions provide practical indicators to evaluate a process, or at least a starting point from which to formulate indicators effectively.

These questions appear in this document as an Annex, just as they have already appeared in other documents.³⁷ The questions are designed to help recognise and qualitatively measure the contribution of a given action to sustainability.

This is not an exhaustive list of the questions that need to be asked, nor is it a full bank of questions, but rather it provides a bank of ideas on the basis of which the protagonists of each particular process can formulate their own questions suited to the particular characteristics of their specific process, their territory and the actors involved.

Thus, in terms of the consequence of a given process, decision or action:

- Do the organisations and their leaders gain legitimacy, become more representative and management capacity?
- Does the exercising of leadership become less authoritarian and more educational and participatory?
- Are new organisations and networks created and consolidated within and beyond those already in existence?
- Do the community and the local authorities gain management capacity, autonomy and decision-making powers in the processes that affect them?
- Do the community and the region reduce their economic vulnerability through the diversification of sources of income, capacity to generate added value and to generate economic surplus, social security, food security, increased opportunities, and more equitable wealth distribution?
- Do the State and its institutions gain legitimacy, credibility, trust and governability?
- Does institutional management become more participatory and democratic?
- Do decisions contribute to processes that acquire meaning and significance within the community consciousness?

³⁶ 'Lineamientos para una política para la participación ciudadana en la gestión ambiental', Ministry of the Environment of Colombia and Gustavo Wilches-Chaux (1998). 'Educación para el desarrollo sostenible en América Latina y el Caribe', OAS/UNESCO/ Education Ministry of Colombia, Eloísa Tréllez and Gustavo Wilches-Chaux(1998).

- Do the weaker and more marginalised sectors acquire capacity to participate, manage and decide?
- Does the 'macho' perspective recede in favour of a gender perspective with effective consequences in terms of equity?
- Do women gain openings and opportunities for leadership, participation and decision-making?
- Are children and young people in the community offered opportunities for stimulation of their creativity, allowing them to develop their personality freely and make it possible for them to participate in building of a future where they would be able to live and take leadership?
- Does the culture offer opportunities for creativity and human achievement that allow for a reduction in levels of alcoholism, youth vandalism and drug addiction?
- Do 'senior citizens' play an active role in community building? Do older people remain open to new learning? Are their experiences and knowledge incorporated and valued in the living heritage of the community? Are there opportunities for meetings and intergenerational dialogue?
- Do indigenous, ethnic and Afro American communities acquire and/or consolidate recognition, territorial ownership and capacity to control and manage their territories with sustainability criteria?
- Do ethnic communities manage to strengthen their identity through internal and external valuing of their own particular features rather than by negation of the features of others?
- Are values such as co-operation and coexistence starting to gain ground as opposed to exclusive competition and domination?
- Is there increasing capacity to access and manage information, and to apply this to resolving local problems and needs?
- Is access to the media democratised, breaking or reducing the unilateral nature of the information provided?
- Is there increasing understanding of the problems in the community? Is knowledge of the problems, their causes, the implications and alternative solutions effectively disseminated through society?
- Is there increasing capacity to produce, recover, value and apply local knowledge in the analysis of situations and problem solving?
- Does education encourage the generation of new knowledge and 'learning how to learn'?
- Are people learning to formulate and manage projects to solve their problems in an integrated manner?
- Are there opportunities for dialogue on knowledge and dialogue on ignorance to be opened and completed?

- Is formal or non-formal education fitting for the community situation?
- Are learners increasing their capacity to discuss their knowledge, put it in context and look at it relatively?
- Are the desire and capacity for peaceful conflict resolution increasing? Are openings for dialogue and agreement being increased and used fully?
- Are there improvements in the ecological factors that affect the quality of life of the community (air, water and soil quality; noise levels, landscape quality)?
- Are there increasing and real opportunities to exercise the constitutional right to enjoying a healthy environment?
- Do the ecosystems fulfil their ecological function as well as their social function?
- Does environmental management lead to an increase in capacity for self-organisation and self-regulation of the ecosystems?
- Is soil productivity (and that of the ecosystems in general) increasing with reduction in the use of contaminating pesticides and chemical fertilisers?
- Are levels of risk reduced or controlled through the reduction or adequate management of hazard (natural, socio-natural, anthropic) and vulnerability factors in both ecosystems and the communities living or interacting with them (risk management)?
- Are the community able to reclassify common phenomena within the dynamic of nature as no longer presenting a hazard?
- Has Risk Management become a 'normal' tool in planning and management?
- Are there reductions in human and material losses caused by disasters in a given community?
- Have participatory and permanent systems of risk assessment (hazards and vulnerabilities) been established?
- Is there a reduction in the number of contradictions in current and potential land-use and, in broader terms, in the ecosystems in general?
- Is evaluation of the environmental services provided by the ecosystems included in the inventory of assets of a given region?
- Has water 'production' increased in a given water catchments area?
- Is biodiversity protected or increased in all its forms?
- Are advances being made toward environmental management with effective participation from the community and nature itself in the decisions that impact on them?

Questions directly related to environmental education in its various forms and possibilities:

- Is environmental education incorporated expressly (including risk management education) in the Institutional Education Project of the school community?
- Have strategies been established and applied to bring this dimension of the Institutional Education Plan into practice? Does the school culture effectively assumed environmental responsibility and the commitment to sustainability?
- Are Regional Environmental Education Plan (PRAE) school environmental projects being completed?
- Do these projects link various members of the school community (students, teachers, directors, parents, workers)?
- Are teachers from various areas participating in the PRAE (including those with a risk management goal), and are they linking these projects to their academic practice?
- Are the PRAE linked to social processes and actors on different levels? (For example with Citizen Environmental Education Projects (PROCEDA) or the like, Environmental Promoters, community organisations, public institutions and authorities on various levels, etc.)
- Is there a Citizen Environmental Education Project PROCEDA or a project with similar objective, in the neighbourhood, village or municipal area?
- Have indicators been created in participatory manner to provide a baseline for the processes, and do they allow for advances and effectiveness to be evaluated at various stages?
- Has the process managed to transform the state of play? Where have advances being made toward sustainability, what has remained the same, and what has moved backwards?
- Is the school safer that was before as a result of the project?

'Safety' must be understood here in its various dimensions: **structural**: with the building structurally safer in the event of natural or anthropic hazard; **social**: with the existence of a solid and, supportive educational community; **ecological**: where the relationship with the environment means the school does not threaten the ecosystems and nor do the ecosystems threaten the school; **institutional**: where clear regulations govern relationships within the educational community (like the Institutional Education Programme) and with authorities committed to this.

And of course, a better quality education, more appropriate in content and methodology, more closely linked to the actual situation of the territory.

- Is the school contributing to greater safety and security in the territory as a result of the project? (Reading from the spider's web of factors and interactions we have been working on in this publication.)

Have School Risk Management plans been put into place and have individuals responsible for each activity been identified? Have these been trialled through simulations? Have they been evaluated? Are there mechanisms in place to keep these updated and current in spite of changes in staff and circumstances since they were designed?

Annex 3 provides a tool for the systemisation of simulations applied in Guatemala.



Photo: © PAHO/J. Jenkins

SIMULATION EVALUATION FORM CONRED

Annex: **3**

NATIONAL COORDINATING COMMITTEE FOR DISASTER REDUCTION (CONRED)

You are urged to respond as objectively as possible to all the statements as the information you provide will be used in the validation of documents and enrichment of educational procedures.

Please mark your response as a cross in the appropriate box:

1. Did the School Committee demonstrate internal coordination and organisation during the exercise in terms of:

Understanding of Evacuation	YES	NO	Why?
Performance of the Plan	YES	NO	Why?
Timing of the Exercise	YES	NO	Why?

2. during the planning and execution stages of the simulation, what level of participation was given by:

	High Level of Participation	Medium Level of Participation	Low Level of Participation	Very Low Level of Participation	Reluctance to Participate
Local Authorities					
Teachers					
Students					
Parents					

3. Do you think the school committee teams fulfilled their emergency response duties or functions in terms of:

Safety	YES	NO	Why?
First Aid	YES	NO	Why?
Prevention and Mitigation	YES	NO	Why?
Links	YES	NO	Why?
Emotional Support	YES	NO	Why?
Evacuation	YES	NO	Why?

4. Are there any other teams you think should be organised?

5. Did other emergency services support the simulation?

Police	YES	NO	Hospitals/Health Centres	YES	NO
Fire Service	YES	NO	Volunteers	YES	NO
Armed Forces	YES	NO		YES	NO

Others:

6. What loss or damage do you think the school would suffer in an earthquake?

Doors Coming Off	YES	NO	Sinkholes	YES	NO
Glass/Windows Coming Loose	YES	NO	Fire within the School	YES	NO
Roof Collapse	YES	NO		YES	NO
Walls Falling	YES	NO		YES	NO

7. Did the simulation help strengthen capacity in the educational community?

YES		NO		Why?	
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8. Did the simulation help strengthen the capacity of institutions within the system?

YES		NO		Why?	
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9. Is the School Response Plan useful in an emergency situation?

YES		NO		Why?	
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10. List in logical order all the activities undertaken in the simulation from planning to evaluation:





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Graphic design: Carlos Cuauhtémoc



The European Commission's Humanitarian Aid department funds relief to millions of victims of natural and man-made disasters outside the European Union. Humanitarian aid is channelled impartially to affected populations, regardless of race, ethnic group, religion or political affiliation.