



Sistema Económico
Latinoamericano y del Caribe

Latin American and Caribbean
Economic System

Sistema Econômico
Latino-Americano e do Caribe

Système Economique
Latinoaméricain et Caribéen



Partnerships between public and private sectors for disaster risk reduction

Economic and Technical Cooperation

*Permanent Secretariat
Caracas, Venezuela
August 2012
SP/Di N° 15-12*

Copyright © SELA, August 2012. All rights reserved.
Printed in the Permanent Secretariat of SELA, Caracas, Venezuela.

The Press and Publications Department of the Permanent Secretariat of SELA must authorise reproduction of this document, whether totally or partially, through sela@sela.org. The Member States and their government institutions may reproduce this document without prior authorisation, provided that the source is mentioned and the Secretariat is aware of said reproduction.

C O N T E N T S

PRESENTATION

EXECUTIVE SUMMARY	3
I. INTRODUCTION	5
II. RECALLING THE IMPACT OF DISASTERS IN THE REGION	6
1. Given the harsh reality of an endogenous problem	9
2. Climatic change or development model?	11
III. RISK MANAGEMENT: READJUSTMENT OR A CHANGE IN PARADIGM?	13
IV. CHANGING TIMES TO ADDRESS DISASTER REDUCTION	15
1. Regional progress in terms of knowledge	15
2. Progress made in terms of the institutional framework	18
• Progress made in national legal frameworks	18
• Advances in regional agreements	22
V. SOME ELEMENTS FOR CONSIDERATION	25
1. The risks of risk management	25
2. Regarding the notion of “systems” of the Disaster Reduction Systems	26
VI. THE PRIVATE SECTOR AND THE NEW DISASTER RISK REDUCTION SCENARIO	29
1. Private participation in disaster preparedness and response	30
2. Private participation in risk prevention and mitigation	31
3. Financial transfer of disaster risk in the private sector	33
4. Corporate social responsibility and social investment agendas	34
5. Some sectoral initiatives and achievements of interest	34
VII. CONTINUITY OF GOVERNMENT AND OF OPERATIONS IN SITUATIONS OF DISASTER	36
1. Business continuity in cases of disasters	38
2. The lessons of Haiti	39
VIII. ELEMENTS FOR A BETTER PUBLIC-PRIVATE PARTICIPATION IN DISASTER RISK REDUCTION	42
IX. CONCLUSIONS	44
BIBLIOGRAPHY	47

P R E S E N T A T I O N

This document is in compliance with the Work Programme of the Permanent Secretariat of the Latin American and Caribbean Economic System (SELA) for 2012, in particular with Activity II.1.4 "Support to existing institutions for disaster risk reduction in Latin America and the Caribbean" of the Economic and Technical Cooperation Area.

This study also seeks to give continuity to the efforts arising from the Regional Seminar on "Cooperation between governments and the private sector for disaster risk reduction in Latin America and the Caribbean: Focus, progress and challenges" (Panama, 17 and 18 November 2011) and the Regional Seminar "Partnership between public and private sectors for disaster risk reduction: Continuity of government and continuity of operations during disasters" (Peru, 7 and 8 June 2012).

This document analyzes the issue of risk management, seeking to dismantle paradigms it considers erroneous and highlighting new and better forms of cooperation between the private sector and the governments of Latin America and the Caribbean. To that end, following a brief introduction to the subject, it develops seven key points: i) Recalling the impact of disasters in the region; ii) Risk management: readjustment or a change in paradigm? Iii) Times of change in tackling disaster reduction; iv) Some elements to help understanding; v) The private sector in the new disaster risk reduction scenario; vi) Some comments on the continuity of government and operations in disaster situations; viii) Elements for better public-private participation in disaster reduction; xiii) Conclusions.

This study was prepared by the consultant Alejandro Linayo, whose efforts the Permanent Secretariat acknowledges and for which it expresses its appreciation.

EXECUTIVE SUMMARY

Latin America and the Caribbean is a region of the planet where major disasters have occurred in the past and where everything suggests that there will be major disasters in the future. A number of studies conducted for the purpose of learning about our levels of threat suggest that natural events that have triggered disasters in our countries (earthquakes, flooding, hurricanes, volcanoes, etc.) will surely continue to occur in the future, and that is because said events, far from being a kind of isolated “anomaly” in how the space we occupy functions, are elements that are intrinsic to the dynamics that occur in our territory and with which we have to learn to live.

In our region, circumstances such as the one described have been promoting agendas of inter-sectoral work based on the principles today favoured by *comprehensive disaster risk management*. It is about a discourse that has been gaining considerable ground in Latin American and the Caribbean over the past decade and that has permitted, particularly in the last year, the consolidation of important innovative national regulatory frameworks and working agreements at the continental level.

In these circumstances, the appearance of an effort such as the one that the Latin American and Caribbean Economic System (SELA), the United Nations International Strategy for Disaster Reduction (UNISDR), and the United States Office of Disaster Aid (OFDA-USAID) have been supporting for the purpose of facilitating partnerships for disaster risk reduction between the public and private sectors necessarily forces us to conduct an in-depth review of fundamentals, roles, and mechanisms that demands the use of a discourse at times as diffuse as the one favoured by the disaster risk management approach.

This is a review where priority should be given to evaluating the schemes of operation and coordination currently governing the activities of two key actors in this process: the national and regional agencies responsible for sectoral development policies and the national and regional agencies in charge of disaster preparedness and response.

The importance of promoting constructive dialogues and work agendas of consensus between these two areas is clear and irrefutable and is based on the conviction that only through an open, thorough, and honest discussion between them can misunderstandings and possible disputes over spheres of competence be settled, thereby facilitating the consolidation of synergetic spaces of cooperation, understanding, and mutual benefit. In those spaces, the appearance of private actors committed to corporate social responsibility and interested in the continuity of both their facilities and their operations in the event of major contingencies could well give a boost to the implementation of promising ways of dealing with risk disaster in our countries.

The purpose of this study is to look at the principles, characteristics, and mechanisms that could be promoted for the purpose of maximizing the chances of these public-private cooperation processes coming about, and it is here that it will focus its interest.

I. INTRODUCTION

This paper contains the findings of a study conducted during April and May 2012 at the request of the Permanent Secretariat of the Latin American and Caribbean Economic System (SELA), with the purpose of giving continuity to the effort to explore new ways and better mechanisms for promoting cooperation between the private sector and the governments of Latin America and the Caribbean in matters having to do with Socio-natural Disaster Risk Reduction.

This study gives continuity and offers greater conceptual depth to the proposals set forth in the document "Guidelines for cooperation between governments and the private sector for disaster risk reduction: Approaches, achievements and challenges" (SP/SR-CGSPRRD/DT N° 2-11), which was prepared as a base document for the Regional Seminar "Cooperation between governments and the private sector for disaster risk reduction in Latin America and the Caribbean: Focus, progress and challenges" held in Panama City on 17 and 18 November 2011, with the sponsorship of the Permanent Secretariat of SELA, OFDA-USAID, UNISDR, and the City of Knowledge Foundation.

That document was conceived of as an invitation to debate the subject and, for that reason, it was full of examples of concrete cases of involvement by the private sector in disaster risk reduction. In this case, however, the idea has been to address in greater depth the fundamental elements that could make it possible to improve and expand the spectrum of cooperation in our region that the regional private sector might contribute to the regional effort to reduce the risk of socio-natural disasters.

In this regard, bodies such as SELA have been proposing the objective of promoting more and better ways of linking up the public and private sectors, particularly in terms of the comprehensiveness, profitability, and sustainability of their actions and results, the suitability and relevance of their agendas to each local context, and the cost-benefit ratios that said initiatives could represent.

Efforts of this kind could relegate the private sector's actions with regard to disaster risk, despite their relevance, to a back seat, to merely providing assistance and offering solidarity, which is customary in the wake of these adverse events, and would foster the undertaking of initiatives based on much more forward-looking and sustainable approaches. However, this challenge demands the existence of agreements and solid conceptualization and coordination, both between private entities and public actors and within the different institutional levels of each country that are in charge of both forward-looking and compensatory treatment of risk (prevention-mitigation) and disaster preparedness and response.

It is worth noting that the context conditions in which said agreements have to be developed are currently marked by the force with which policies, regulatory frameworks, and regional working agendas based on what is established by the comprehensive disaster risk management approach have been emerging in our region; a discourse that is bent on understanding disasters as symptomatic manifestations of the unsustainability of our development models, and maintains that addressing the "crux" of the problem of disasters will only be possible insofar as we manage to step up future-looking and compensatory risk management in the daily round of each and every one of the actors responsible for sectoral development in our countries.

6

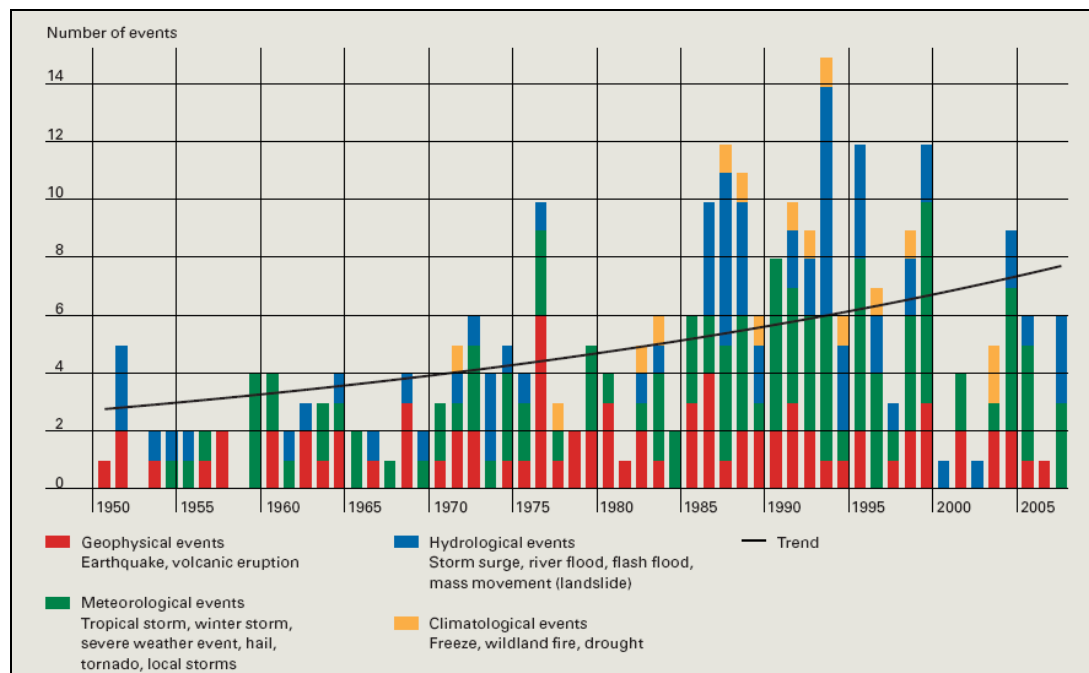
Given such a statement, it is understandable that, on occasions, scenarios of confusion and conflicts of competence might occur and this, necessarily, makes it obligatory for there to be a review and in-depth reengineering of fundamentals, roles, and mechanisms, which requires issuing a call to action as generic as the one that is in the making on the risk management side; a reengineering that will undoubtedly demand the active, coordinated, and "protagonistic" participation of three key actors: the entities responsible for sectoral development, the institutions in charge of disaster preparedness and response, and finally the presence of some private actors who, committed to corporate social responsibility and interested in the continuity of their businesses, enhance the possibility of consolidating better ways of dealing with disaster risk in our countries.

II. RECALLING THE IMPACT OF DISASTERS IN THE REGION

Sustained growth associated with losses as a result of disasters in both Latin America and the Caribbean and in the rest of the world has always been a matter for debate. And everything that has been proposed in this regard suggests that the impact of disasters on our societies has been growing steadily for decades, regardless of the efforts we have made thus far to reduce these trends.

Some interesting data relating to this matter are referred to in the document cited by the Permanent Secretariat, which maintains that, over the past 40 years, the number of disasters and their repercussions on human development worldwide has steadily increased each year, and even though information available for the period 1900-1980 does not seem to be totally reliable, different authors suggest that, while it would seem that we are having success in reducing morbidity-mortality levels associated with the impact of some disasters, in terms of social and economic repercussions, we are in the presence of exponential growth in the impact of disasters, particularly in developing countries.

CHART 1
Trends in the number of disasters recorded for the period 1950-2007



(Source: Munich Re Group, 2007 – Cited by Cardona, 2001)

This document also mentions some investigation that has been done to try to identify the causes that could be behind the increase in the world impact associated with the occurrence of natural and/or technological disasters. It would seem that there are three basic conclusions that might be drawn from that review:

- a) That the increase in the impact of disasters is not associated with an increase in the frequency of what we could call “trigger events,” and that this means that no elements exist to suggest that, in the case of natural disasters, the number of earthquakes, volcanic eruptions, and destructive hurricanes is larger today than previously.
- b) Nor does the sustained increase associated with the impact of disasters seem to be associated with the severity of these “trigger events.” This is tantamount to saying that the present impact of natural disasters is not due to the fact that today we have earthquakes, volcanoes, hurricanes and so forth that are intrinsically more powerful than their predecessors. That is something that has been disproved by sciences such as climatology, volcanology, seismology, hydrology, and so on.
- c) Also discarded have been hypotheses that suggest that the reasons for the increase in the number of people in the world affected by disasters have to do with demographics, which would be tantamount to saying that the increase in the human impact associated with disasters grows as the population grows. With a view to refuting these ideas, rigorous research¹ involving records and statistical analyses

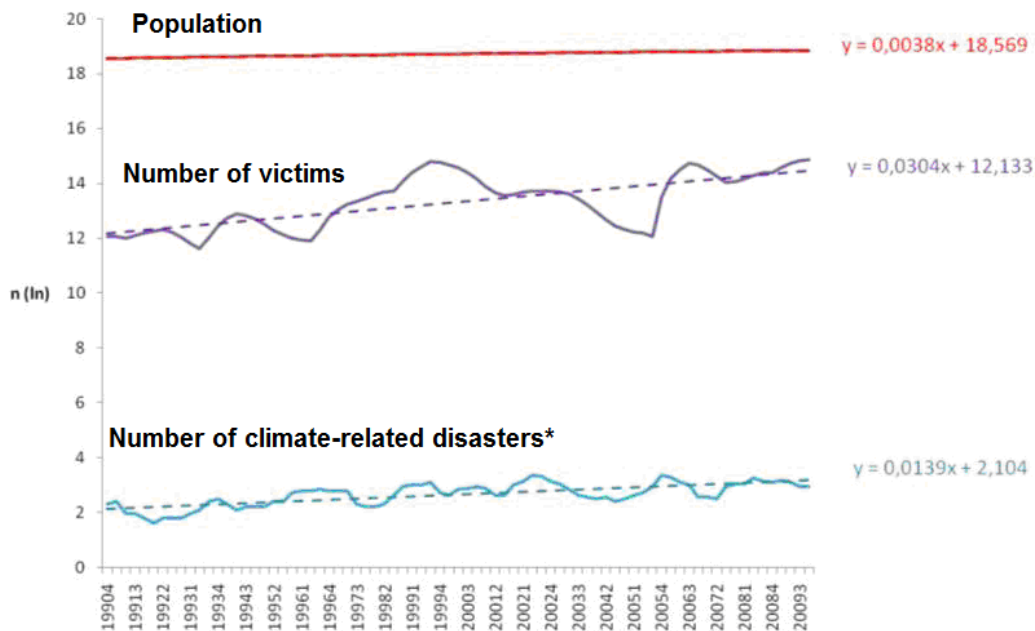
¹ Research geared to correlating population growth, the number of climate disasters, and the number of associated victims in different regions of the world suggests, based on statistical records spanning more than a century, that the disaster victim rates, particularly in our region, are far higher than the population growth rates and even the rates of recorded climate-related disasters.

8

conducted at the *Université catholique de Louvain's* Centre for Research on the Epidemiology of Disasters CRED (www.cred.be) in Brussels (Belgium) has been cited.

CHART 2

Comparison with trends in population growth, increase in climate-related disasters, and associated victims in the Central American region



(Source: *International DisasterDatabase* www.emdat.be)

Note: These trends show that the growth in the impact of disasters (victims) quadruples the trend in the number of trigger events and is ten times greater than population growth rates.

The relevance of reflecting on and redesigning approaches and strategies based on the results referred to is clear and, having acknowledged that fact, four basic aspects need to be mentioned:

- The sustained growth in the levels of affectation by disasters that there has been in the last half century cannot be associated with external natural causes, such as the existence of increasingly frequent or severe earthquakes, volcanoes, hurricanes or other disaster-triggering events.
- The growth in the levels of impacts on people associated with disasters cannot be explained in terms of demographic growth rates, and this is proven both by correlating trend scenarios such as those referred to and by corroborating the minimal impact that natural events usually have on some of the most densely populated societies on earth, which could turn out to be devastating were they to occur in other regions.
- Despite the global, regional, national, and local efforts that have been made, particularly in the last decade, aimed at reducing the impact of disasters, "the trends towards increasingly more and worse disasters in the future" than in the 1980s persist, warned E. Quarantelly (Quarantelly 1983, 12).

d) And, finally, given this last fact, far from maintaining a merely contemplative position, we are forced to reflect in depth on the approach and practices we have been implementing to deal with this problem, and that is because, as a society faced with the challenge of reducing disasters, we must be doing something wrong, something that we should stop doing.

CHART 3
Number of natural disasters per year (1975-2010)



(Source: International Disaster Database www.emdat.be)

1. Given the harsh reality of an endogenous problem

The scenario described thus far leads us to face up to a harsh reality: The problem of the impact of disasters is one whose origins are due to internal causes associated with the unsustainability of our present development models. This hypothesis is based both on theoretical contributions from different regional and world studies on the subject and on the abundant empirical evidence and case studies available on conditions of risk and the impact of disasters in Latin America and the Caribbean.

It is from this approach that the reader is invited to understand disasters as symptomatic manifestations of a particular way of comprehending development in our region; a way that, it has been said, has been conducive to both human settlements becoming a threat for the environment and to the environment becoming a threat for human settlements.

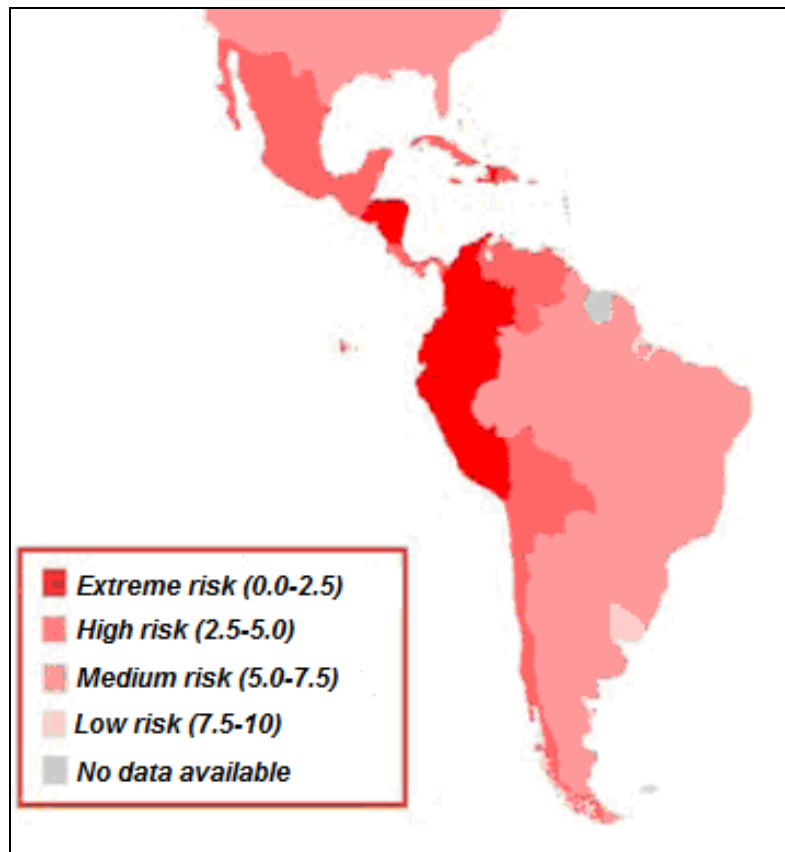
The challenges and intervention strategies proposed based on this particular way of understanding and addressing the problem of disasters are to be found "inside" said development practices, and extend an invitation to open an approach that deals with the issue of disasters from an opposite point of view to the biased and limited assistance-based and reactive way in which attempts have been made to address the issue thus far.

10

Bearing in mind the characteristics of such conditions, which are conducive to our countries being prone to major disasters, not too great an effort is needed to understand that the question of habitat, occupation, and regional urban growth poses an extremely difficult situation. Different regional studies suggest that the deficit of new housing is around 30 million homes and that similar figures could apply to existing extremely precarious housing, which lack adequate basic services (water, sanitation, electricity, sewage systems, etc.) and are in urgent need of improvement and consolidation. Most of this housing is anarchically located around practically all the major urban centres in the region, with the result that hundreds of thousands of people in Latin America and the Caribbean today occupy housing that is, among other things, in unacceptable conditions of risk.

It is from this perspective that it becomes evident that the term "natural" disasters, calamities, starts to undergo a major change in value; a change that abandons the idea that these disasters are "natural" because they have their origin in nature. People begin to understand that they are "natural" because, in the long run, they end up being a *natural and inevitable* consequence of the particular way in which we conceive of and build our societies in the territory we occupy.

Chart 4
Map of disaster risk levels by country in the region



(Source: Global map of natural disaster risk en<http://maps.maplecroft.com>)

2. Climate change or development model?

One element that we necessarily have to refer to here, albeit briefly, is the issue of climate change and, in particular, the possible relationship that could have been occurring between climate change and the devastating hydro-climatic events that have hit our region in recent years.

Naturally, it is tempting to maintain that the increase in this type of disasters is the result of perturbations in rain frequency and intensity levels being recorded today, a result, in turn, of a global increase in temperature that is being exacerbated by the uncontrolled emission of greenhouse gases associated with human activity. However, in response to these hypotheses, some authors have been warning (Linayo, in Wisner et al, 2012) of the importance of rigorously evaluating the real relationship that might exist today between climate change and the impact that hydro-meteorological disasters, particularly in the countries on our continent, are leaving in their wake. The arguments on which this position is based could be summed up briefly in three core proposals:

- a) Without ever ceasing to acknowledge the real threat that climate change poses in terms of "even more and even worse disasters in the future," much care must be taken when attributing the increase in the number of hydro-meteorological disasters that we are witnessing today *exclusively* to a change in the continent's rainfall regimes.
- b) A good example of the above is that, in the case of a fair number of the hydro-meteorological disasters we have suffered from recently, there is solid evidence to show that the hydro-climatic events (rains) that triggered them, far from being extraordinary and unexpected events, were in fact expected maximum events known to recur throughout history, and that the enormous difference in the levels of damage recorded today has been due more to the extent and ways in which the territory has been occupied than to changes in the characteristics of the phenomena that unleashed them.
- c) it is important to highlight that, far from being a merely conceptual matter, the danger of focusing the problem of the increase in the impact of hydro-meteorological disasters exclusively on climate change lies in that, by adopting that position, the *locus* of the problem necessarily is put, once again, in a context that is external to that of the management of local development, and this is an extremely dangerous fact.

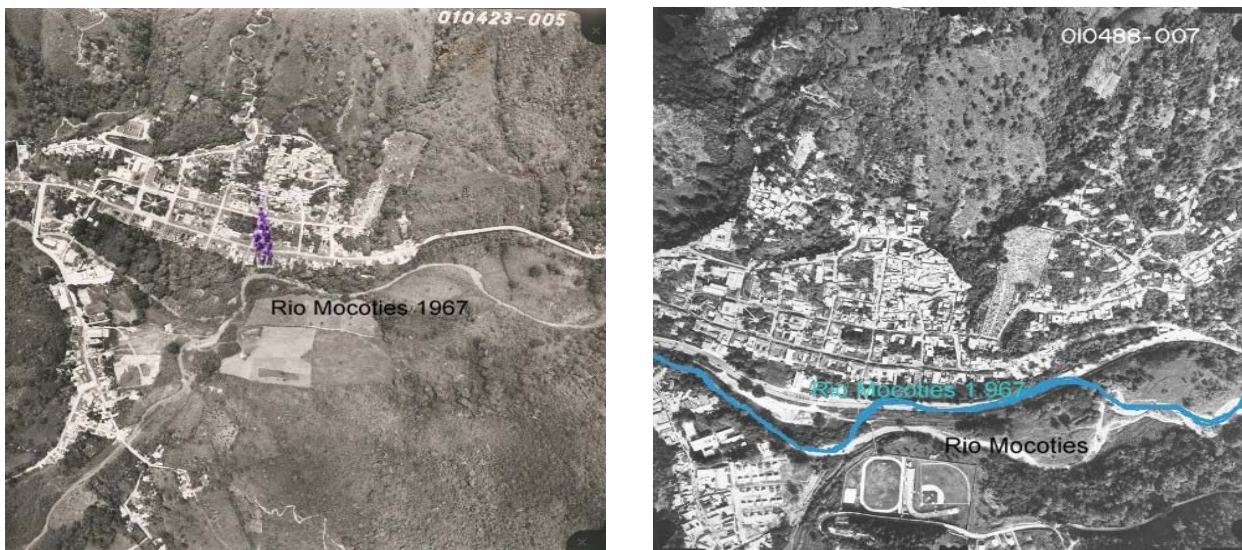
For the purpose of briefly illustrating this point, we will refer to one of the innumerable examples that demonstrate the underlying reasons that could be behind the serious effects caused by the hydro-meteorological disasters we have experienced recently. To do this, we will make use of the findings of a study conducted by Professors Marbella Dugarte, Jaime Laffaille, and Carlos Ferrer on the causes of a hydro-meteorological disaster that affected the town of Santa Cruz de Mora in Mérida state (Venezuela) in February 2005².

This complete "forensic" analysis of that disaster illustrates in detail how much of the damage done to the infrastructure on that occasion was due to inadequate constructions on old stream- and riverbeds surrounding the area. As proof of this, attached is a meticulous aero-photographic analysis of the area most affected by that disaster. In this analysis, aero-photographs of the area taken in 1967 are compared with

² These findings were published in "*Estudio preliminar de alguno de los efectos geomorfológicos del evento meteorológico observado el día 11 de febrero del año 2005.*" FUNDAPRIS, 2005.

12

others taken in 1994, and it can be clearly appreciated how the town's population gradually grew until it occupied the banks of the Mocoties River and even how, in order to be able to build the ring road that today runs along the southern edge of the town, the original course of the river was rerouted towards its right bank.

CHART 6**Aero-photographic analysis showing how the original course of the Mocoties River was rerouted**

(Source: Ferrer, Laffaille, and Dugarte)

Note: The photograph on the right (1994) contrasts the original course of the river (in blue) and the modified course it was given in order to be able to build the ring road.

It is a well-known fact that, after that disaster, different local and regional authorities gave statements to the media in which they blamed what had occurred on "global warming." However, papers such as the one mentioned make us think that, if rains similar to those registered in 2005 had happened in 1967, such a disaster would have not occurred, and that is simply due to the fact that it would seem to be increasingly evident that, instead of it being rivers and streams that ride roughshod over urban infrastructure, it is human infrastructure that is bent on violating the natural courses of rivers and streams with an ever-increasing lack of respect.

Situations such as the one described have been addressed thoroughly and in detail in the Fifth Global Report issued by the Intergovernmental Panel on Climate Change (IPPC, 2012), which refers to the issue of climate change and local risk and from which we consider it relevant to take three extremely important conclusions:

- a) Climate change is a fact, and it can be proved that the global temperature of the planet is increasing.
- b) Despite the foregoing, both the degree to which human activity could be contributing to this warming and the extent to which this could be causing more or worse hydro-climatic disasters is still open to debate. On these issues there is still no consensus.
- c) Despite the uncertainty, today the importance of efforts to adapt to climate change has been recognized. However, it must be stressed that the actions that require

adapting to climate change in this case are, in essence, the same actions that are required by hydro-climatic disaster risk management. *These two tasks are equivalent.*

III. RISK MANAGEMENT: READJUSTMENT OR A CHANGE IN PARADIGM?

Both the contradictory results obtained from our effort to reduce disasters and the new challenges that would seem to be in store in the future (climate change) have been conducive to the treatment of the problem of disasters being advocated by the risk management approach gaining ground in our region.

Based on the foregoing, it is worth taking a brief look at the nature and extent of the transformations that adopting this emerging approach to disaster risk reduction could require of our societies, our development models and practices, and, in particular, our institutions. For that reason, it is advisable to reflect on whether it would be possible to assume the risk management approach as a readjustment of existing institutional practices or whether, on the contrary, it should be understood as a change in paradigm that requires a reengineering and redefinition of said practices.

To address this issue, we will try to give a very brief overview of the notions and principles supporting the idea of what a paradigm is and the ways in which said paradigms change. Here our starting point could be the fact that, as we accumulate experiences, whether they are successful or not, said experiences nourish us and thereby permit knowledge and practices derived from that knowledge to advance. This, then, is a dynamic that is developed in the transformations that support and dictate how we view ourselves and the environment that surrounds us.

Suffice it to recall the profound social, cultural, axiological, and other repercussions of the work of Galileo, consolidating the heliocentric theory and clearly demonstrating that the earth was not the centre of the universe, or the contributions that allowed Charles Darwin to demolish the creationist approach and impose evolutionism had in their day to show that advances in knowledge of phenomena, far from representing changes that affect only the interests of the scientific community, have the potential to become factors that profoundly affect and transform society as a whole.

This suggests the importance, both scientific and social, of the contribution made by some researchers who have applied themselves to trying to learn how the theories and concepts that permit us to understand – and, therefore, respond to – the situations in which we live evolve and how likely acceptance or resistance to change usually is in the face of new ways of explaining the phenomena we observe. Here it is worth referring to some answers that the US researcher Thomas Samuel Kuhn has given to these and other questions in his book “The Structure of Scientific Revolutions.”

Kuhn’s proposal maintains that knowledge advances cyclically, starting with a paradigm that is initially accepted by a community that investigates and acts based on the postulates and principles of that paradigm. This occurs during a period that he calls *normal science*, and during this period efforts are made to adapt available theory to scientific and social practices. However, as the empirical evidence on a phenomenon increases, certain discrepancies may arise, and if not solved satisfactorily within what the dominant paradigm establishes, they become *anomalies*. If in addition these anomalies build up, a crisis is invariably produced and entails the downfall of the old paradigm and the emergence of a *revolution* in which the old paradigm is replaced by a new paradigm that is incompatible with the old one.

14

Kuhn's idea that our knowledge is not developed by the linear accumulation of individual discoveries or experiences, but is formed as a permanent process of rupture with what went before, throws light on the way in which society advances in both the interpretation and treatment of many issues making up its contemporary agenda and the treatment of what constitutes its main challenges.

Subsequent contributions that have been made in order to characterize the phases in the way the process of transferring from one paradigm to another occurs (Wells 1976, quoted by Linayo 2011) suggest that, when it comes to explaining how the old series of ideas gives way to the new one, the community of scholars of a given subject tends to follow these steps:

1. Acknowledgement of anomalies
2. Period of uncertainty
3. Development of alternative groups of ideas
4. Identifying schools of thought
5. Mastering the new ideas

The question that this summary invites us to consider is: Could the appearance of the risk management approach that has been occurring in our region be understood as the emergence of a new paradigm in our way of understanding and responding to the problem of disasters? Or does the appearance of this approach mean a readjustment of the traditional practices we have used to address the problem of disasters in recent years?

The comprehensive and in-depth response that these questions deserve is still pending, and this is due to the fact that developing such a response could lead us into areas that fall outside the scope of this paper. However, we consider it important to evaluate, if only briefly, just a few elements that Kuhn's contributions might suggest in connection with said response and that allow us to realize and make sense of some of the difficulties and disputes that implementing the risk management approach in the region would seem to face today.

First of all, it is worth repeating that Kuhn's contribution revolves around the following concepts: paradigm, normal science, and scientific revolutions. The suggestion here is that there are alternating periods of science and normal social practices and periods of crisis. This change is gestated during the normal phase, when an essential body of theory, a concept and a dominant practice are accepted and situations (anomalies) that cannot be convincingly explained start to emerge. When these anomalies increase, an unsustainable scenario is produced that gives rise to the appearance of new theories and approaches, which, ultimately, involves one paradigm being replaced by another.

There are three essential elements in the context of this dynamic of advance: The first is the forming of a disciplinary and interpretive framework, made up of conceptual generalizations that are promoted and characterized by the existence of particular models that are assumed as judgments of precision and typical examples of problem solving, which are accompanied by particular forms of communicating and implementing what the dominant paradigm maintains.

The second of these elements points to the forming of a sociological aspect that is expressed in the number and type of relations established among the members of the community sharing the paradigm. On this point, it could be said that the group of people that works within a particular paradigm tends to share sociologically similar interests, and

this makes it possible for actors and researchers of the most diverse cultures who only share their identification with the paradigm to overcome obstacles, understand one another, and share experiences with little difficulty.

The third and last aspect to which we wish to refer with regard to Kuhn's thesis is his assertion that a new paradigm is incompatible with the paradigm it replaces. This is explained based on a relationship of "incommensurability," a term used to convey that, since each individual theory establishes a meaning for all its terms, even a tiny change between one approach and another may be enough so that the meanings of all the terms of the former change radically.

In the next pages we will make reference to and try to illustrate the importance that some of the elements we have taken from Kuhn's contributions on the notion of paradigms and paradigmatic changes might have, emphasizing how useful they might be in order to become aware of and understand the causes of some of the institutional processes that have been occurring in our region in response to the emergence of the disaster risk management approach.

IV. CHANGING TIMES TO ADDRESS DISASTER REDUCTION

The contradictory results that may be related to the huge regional effort that has been done in the past few decades in an attempt to reduce the impact of disasters are likely one of the main *anomalies* that have led to the emergence of changes in the way of conceiving and dealing with the issue of disaster reduction in our region. According to the guidelines outlined in the previous section, we are dealing with some anomalies that have led to the emergence of alternative ways of understanding (*normal science*) and acting (*common practice*) to tackle the issue of disasters.

Although there are several sources that could provide us information about how the approach to disaster risk management has been gaining ground in Latin America and the Caribbean, we will focus particularly on the regional developments in the field of knowledge (represented by the initiatives that have been implemented by several academic institutions) and in the area of institutional activities (represented by the analysis of changes that have been taken place in the legal and regulatory frameworks in an effort to establish national and regional mechanisms to implement disaster risk management policies).

1. Regional progress in terms of knowledge

It has been argued that the worrying levels of risk of disasters that now characterize our hemisphere are mainly focused on the extremely high levels of vulnerability that prevail in many of our countries. This vulnerability may be related not only to the physical and structural aspects of our infrastructure, but also includes other key visible features that allow us to speak today of economic, institutional, cultural, political, idiosyncratic vulnerability, etc. These are all weaknesses that increase our propensity to be victims of disasters. Therefore, they must be modified and corrected.

If we were to do a mental exercise and try to find the primary source of vulnerability in order to specify the primary source from which all other vulnerabilities come, we could dare to suggest that ignorance and oblivion are among the main sources of these weaknesses. An ignorance that prevents us from knowing how to live in harmony with the territory we occupy and its dynamics, and an oblivion that prevents lessons learned in previous disasters that have battered our countries from being assimilated.

16

When trying to tackle these two problems, there is a natural strategy that aims to strengthen training on issues related to disaster risk management. This is currently done at different levels and forms of our educational systems. This is an issue that may seem old-fashioned, particularly when we consider the great number of initiatives that have been taken out in our continent in the past few years. However, their results have been very questionable. Therefore, a thorough process of revision and redefinition is required.

Among the different elements of this issue that could be reviewed and adapted are: the lack of coordination being evidenced in the educational approach to topics related to disaster risk management among the various levels of the education system; the ever-present bias to react to problems, encouraging people to deal with problems “before, during and after the disaster” rather than promoting new ways of knowing and living with the peculiarities of their local environments and fostering lower levels of exposure to disasters; the sometimes fragmented, fragile and incomplete approach to this issue at the technical and higher education levels prevails over the need to include disaster risk management elements in strategic degree courses that ensure the sustainability of actions to be taken by their future graduates, and so forth.

In spite of the described weaknesses, major steps forward have already been made in the academic field in our region. In this regard, it is worth showing the results of a comparative study that was carried out by The Network for Social Studies on Disaster Prevention in Latin America (LA RED), sponsored by the Venezuelan Office of the United Nations Development Programme (UNDP). The study was entitled “Estudio sobre Iniciativas y tendencias en la formación de talento humano en el área de gestión del riesgo de desastre en América Latina” (“Study on Initiatives and trends in the training of human resources in disaster risk management in Latin America” (LARED-CIGIR 2011).

This effort was completed at the end of 2011. It identified several initiatives that have been carried out by regional universities in order to provide ongoing university programmes in their academic offerings, as well as specific courses leading to recognized certifications, such as subjects and/or seminars related to risk management that have been included in programmes leading to undergraduate or graduate degrees that are currently offered by universities.

The overall preliminary results of this study are summarized as follows. We should emphasize that short courses, isolated experiences or programmes sponsored by external institutions, in which the role of universities was limited to endorse the certificates and/or allow the use of their spaces, are not included in these results.

“Study on Initiatives and trends in the training of human resources in disaster risk management in Latin America”

OVERVIEW

TOTAL OF COUNTRIES ASSESSED: 17 COUNTRIES

South America:

Colombia, Ecuador, Peru, Bolivia, Argentina, Chile, Uruguay, Paraguay, Venezuela.

Central America and the Caribbean:

Panama, Costa Rica, Nicaragua, Honduras, El Salvador, Guatemala, Mexico, Dominican Republic.

NUMBER OF ACADEMIC INITIATIVES IDENTIFIED: **111 INITIATIVES**

TOTAL OF RISK MANAGEMENT ACADEMIC PROGRAMMES: **64 PROGRAMMES**

TOTAL OF SUBJECTS RELATED TO RISK MANAGEMENT ISSUES INCLUDED IN PROFESSIONAL TRAINING PROGRAMMES: **47 SUBJECTS**

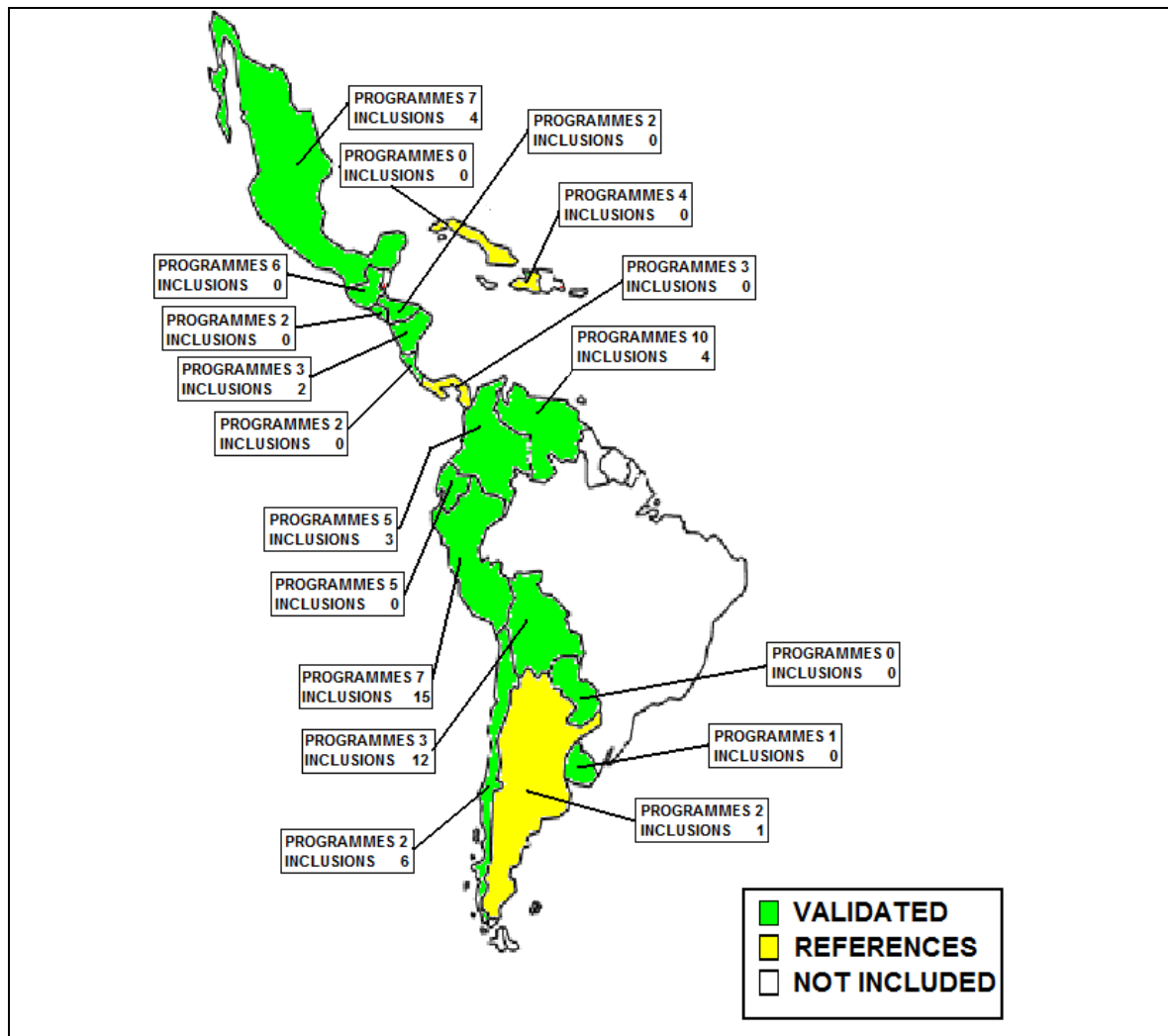
PERIOD IN WHICH THE PROPOSALS WERE OPENED: **2000-2010**

PREVAILING ACADEMIC LEVEL OF INITIATIVES: **POSTGRADUATE (M.Sc. - Spa)**

Following is a map of the findings by country and the level of coverage achieved by these initiatives:

Chart 7

Map that summarizes the results of the inventory of existing academic initiatives for the training of human resources in disaster risk management in Latin America



(Source: LARED-CIGIR)

Note: The VALIDATED results (green) are based on field research carried out by LA RED staff in each country, while REFERENCES (yellow) identify those cases in which field research was not possible. As a result, a literature review was decided in order to identify the training initiatives.

2. Progress made in terms of the institutional framework

These advances would be based on the progress made in national legal frameworks and on the progress made in the regional agreements.

- *Progress made in national legal frameworks*

The above-mentioned results are an interesting indicator of how the regional academic centres are trying to implement the disaster risk management or are adopting it in the context of a process that could well be contributing to create new concepts, and consequently, new social and institutional practices about this issue³.

³ As explained above, this scenario could suggest the way how a “normal science” might be in the making that could boost in the region a future “normal practice” as far as the issue is concerned.

It is worth mentioning that these new concepts are taking shape in an absolutely explicit way both in the legal and regulatory frameworks of different countries, as well as in the political and regional cooperation agendas. Some elements in common have been found in these initiatives. It is worth pointing out those elements for the purpose of the current study:

- a) The idea of **understanding** disaster risk management as a priority in national public policies and development strategies. It views risk management as a determining factor for the sustainability of development efforts.
- b) The effort to promote the treatment of risk management under the principles of responsibility and decentralization involves a direct responsibility of each and every one of the players of the society (governments, international agencies, civil society, private sector, etc.) that work in their respective geographical areas.
- c) The priority given to the promotion of initiatives aimed at prospective and/or corrective treatment of risks (prevention and mitigation) in order to facilitate the approach of the problem at its roots (risk) and not only from its consequences (disasters).
- d) The idea of promoting the private sector's participation in this issue, not as a call for philanthropic and altruistic cooperation but as an important issue in terms of business sustainability and profitability of their investments.

The summaries of some legal initiatives that have been reviewed in the context of this research are tabulated below. These legal initiatives are being implemented in several countries in the region in order to regulate the commitment to disaster risk management.

Table 1
Some national legal initiatives of interest related with the consolidation of disaster risk management

Location	Experience
Peru 27 May 2011	<p>On 26 May 2011, the Supreme Decree N° 048-2011-PCM was issued, establishing the Regulation of Law No. 29,664, of Peru's National Disaster Risk Management System (SINAGRED).</p> <p>This legal framework regulates the objectives, composition and functioning of SINAGRED, an agency created to identify and reduce disaster risks, minimize their effects and address dangerous situations through management guidelines. The regulation establishes that such law applies to all government entities and state-run companies, to all levels of government, to the private sector and to citizens in general. It also defines the National Policy for Disaster Risk Management as a set of guidelines to prevent or reduce disaster risks, avoid the emergence of new risks and take appropriate preparedness, care, rehabilitation and reconstruction measures in case of disasters.</p> <p>In its 21 articles, this Law regulates the organization of SINAGRED, and provides that its governing body is the Presidency of the Council of Ministers. It also establishes that it is made up of the National Council for Disaster Risk Management, the National Institute of Civil Defense, the National Centre for Disaster Risk Assessment, Prevention and Reduction, the National Centre of Strategic Planning (CEPLAN), and regional and local governments.</p> <p>The articles of this regulation provide for the powers of the Presidency of the Council of Ministers and of the National Council for Disaster Risk Management and other agencies that are part of the system.</p>
Colombia 24 April 2012	<p>On 24 April 2012, the Law 1523 was enacted. This legal instrument provides for the adoption of the National Policy for Disaster Risk Management and the establishment of the National System for Disaster Risk Management. This legal</p>

	<p>framework was introduced by Colombian President Juan Manuel Santos (http://www.youtube.com/watch?v=1jFXSdczrAM&feature=relmfu), as part of a presentation in which he explained in detail the grounds, new design and proposed institutional structure to carry out this important mission towards the sustainability of national development, safety, welfare and quality of life for all Colombian citizens.</p> <p>In this legal framework, disaster risk management is considered a social process aimed at the planning, implementation, monitoring and evaluation of ongoing policies, strategies, plans, programmes, regulations, legal instruments, measures and actions aimed at promoting knowledge, risk reduction, and disaster management.</p> <p>It is also understood that risk management is a key development policy to ensure sustainability, homeland security, collective rights and interests, to improve the quality of life of the population and communities at risk. Therefore, it is intrinsically related to a safe development planning, a sustainable territorial environmental management at all government levels, and the effective participation of the population.</p>
<p>Venezuela 9 January 2009</p>	<p>On 9 January 2009, the Law on social-natural and technological risk management was published in the Venezuelan Gazette. It is the legal framework that defines comprehensive risk management as a process aimed at drawing up plans and implementing actions in a conscious, harmonized and planned manner between the State and the individuals to reduce disaster risk.</p> <p>In its articles, the law provides for a National Policy for Comprehensive Social-natural and Technological Risk Management as a cross-cutting exercise in all government bodies and individuals aimed at preventing or reducing risk levels in the country and build capacity to address disasters, encouraging the active involvement of public and private institutions, as well as the continued participation of the community in its implementation.</p> <p>The articles of the law establish that any natural or legal person, public or private, is required to comply with the national policy for comprehensive social-natural and technological risk management according to the principle of joint responsibility underlying the process of sustainable development of the country. This principle also implies the responsibility of the State, the private sector and the communities to promote aspects related to risk prevention and mitigation, as well as ongoing preparedness, care, rehabilitation and reconstruction in cases of emergencies and disasters in the educational and cultural fields.</p> <p>The law also provides that organized communities, civil protection agencies and emergency care institutions will be able to play an auditing role of the risk emerging in their environments. These bodies may file complaints to the competent authorities, to public and/or private bodies, or to individuals, whose actions or omissions contribute to create scenarios of social-natural and/or technological risks within their locations.</p>
<p>Ecuador</p>	<p>Ecuador now considers Risk Management as a Public Policy issue, according to the Constitution. Article No. 389 provides that the National Decentralized System for Risk Management includes risk management units in all government and private institutions at local, regional and national levels. Meanwhile, Article No. 390 of the Ecuadoran Constitution states that risks will be managed under the principle of subsidiary decentralization, which will involve a direct responsibility of the institutions within their geographical area.</p> <p>According to this principle, when the capacity of an institution for risk management is insufficient, the bodies with the broadest territorial scope and greatest technical and financial capacity shall provide the support required with respect to their authority in the territory, while respecting their competencies. Additionally, paragraph "d" of Article No. 11 of the Law on Public Security and State provides that: "Prevention and measures to counteract, reduce and mitigate the risks of natural and man-made origin or to reduce vulnerability are the responsibility of government and private,</p>

	national, regional and local entities. The coordination of this work is carried out by the State through the National Secretariat for Risk Management. "
Haiti 2012	<p>In early 2012, Thierry Mayard-Paul, the Haitian Minister of the Interior, and Helen Clark, who is in charge of the United Nations Development Programme (UNDP), launched the "Plan to Reduce Seismic Risk in Northern Haiti" in a historical ceremony.</p> <p>This national initiative has the support of UNDP, several national partners and Haiti's National System for Disaster Risk Reduction, which is part of the Ministry of the Interior. According to UNDP's Helen Clark, "this is one of the first times that a developing country has taken advance measures to reduce the vulnerability of its people and economy to future earthquakes.</p> <p>This project is a historical landmark and this is to the credit of the Haitian government, which decided to engage a proactive strategy of risk reduction in order to avoid a similar tragedy to that which struck Port-au-Prince and its region on 12 January 2010."</p> <p>In response, Minister Mayard-Paul remarked, "The Haitian Government chose to take action, rather than wait for the next earthquake, storm or hurricane, as part of our national strategy for decentralization. We are putting in place a very pro-active strategy for risk reduction to protect our people and our economy as a way of strengthening our communities throughout Haiti, in full alignment with our decentralization strategy."</p>

Finally, it is worth noting that although the consolidation of such legal frameworks may represent an interesting strategy to consolidate new and more comprehensive ways to deal with the issue of disaster reduction; the passage of such laws should not be understood as a condition for the implementation of processes promoted by disaster risk management. This is due to the fact that, since disaster risk management is a determining factor of the sustainability of sector development, its implementation may well occur within the framework of regulations governing these sectoral efforts and investments.

For instance, we believe that the discussion of a couple of regional cases could be interesting, because they suggest a sort of implicit adoption of guidelines that promote the disaster risk management approach in the context of national development plans. The cases of Chile and Mexico are clear examples.

With regard to the first case, it is worth recalling that on 27 February 2010 at 3:30 a.m., an earthquake of 8.8 on the Richter scale (the highest recorded at that time in the last 50 years in our planet and the fifth largest in the last 1,200 years, according to U.S. Geological Survey) struck Chile. Its effects spread over 300 kilometres of coastline, hitting five cities with over 100,000 inhabitants and another forty-five cities with over 5,000 people.

When the magnitude of this earthquake is put into perspective with the data provided by EMDATA data which suggest that 500 people died in the earthquake, it becomes clear that Chile set an example to the world of the success of the construction standards and the urban sustainability policies that have been implemented as a result of the lessons learned through similar events occurred in that country in previous years. As a result of this policy, a massive earthquake with the potential to kill tens or even hundreds of thousands of people in any of our countries only led to the collapse of a few buildings. As a consequence, the levels of morbidity and mortality were relatively low.

With regard to the Mexican case, the steps that have been taken in that North American country to address issues related to the prevention of natural disasters and, in particular, to the levels of exposure to seismic risk existing in that country have been recognized by

22

several institutions (World Economic Forum – as quoted by *El Economista*, 2011). According to these views, the progress made, far from being confined to the effectiveness of the response preparedness and the good management of the aftermath of recent events, includes achievements related to “a vision of disaster risk reduction aimed principally at reducing disaster losses and damage,” such as those reported during the earthquake in 1985 and the earthquake in Colima in 2003, among other seismic events in the last two years.

It has also been also recognized that apart from the steps taken in that country following the 1985 earthquake in terms of improved control and dissemination of building codes and microzoning and local risk management, several national initiatives for the financial protection have also been developed. They include the timely catastrophe bond agreement with some international banks in order to minimize the potential economic impact of a major disaster in that country.

In view of the above mentioned references, some dissenting voices may arise. They could doubt or sharply disagree with what has been done to reduce disaster risks. However, the objective of this paper, far from defending what the revised sources could say, is to demonstrate that it is perfectly possible to promote concrete actions and even State policies that foster the principles of disaster risk management. To that end, it is not necessary to create specific laws on the issue, such as the regulations that have been recently adopted in many of our countries.

- ***Advances in regional agreements***

The issue of disaster risk management is also promoting the implementation of very interesting decisions, policies, work programmes and cooperation projects in several regional forums. In order to illustrate this fact, we will briefly summarize two experiences that are particularly interesting: The Implementation of the Central American Policy for Comprehensive Disaster Risk Management (PCGIR), which has been promoted by the Central American Integration System (SICA) with the active participation of the Coordination Centre for the Prevention of Natural Disasters in Central America (CEPRENAC), and the mandates put forward by the recent Summit of the Americas (Cartagena 2012) on the issue of Disaster Risk Management and Reduction.

Central American Policy for Comprehensive Disaster Risk Management (PCGIR)

In view of the high impact that disasters have had in Central America and the Caribbean and following the lessons learned from Hurricane Mitch and other major disasters, the Central American countries have been recognizing the economic, social and environmental causes underlying the generation of risk scenarios that pave the way for such disasters and their impacts. In view of this fact, a series of political decisions have been taken and international and regional instruments and mechanisms for strengthening the institutions responsible for promoting and coordinating disaster risk reduction have been adopted.

At the II Regular Meeting of Presidents from Central America, the Dominican Republic and Belize, known as the Twentieth President's Summit (Guatemala, October 1999), an important landmark was reached through the development of political and institutional guidelines to address the relationship among risk, disasters and development in that region of the Americas. At that time, the Central American leaders recognized the need to create “a comprehensive and intersectoral Central American commitment of public and private sectors as well as the community at large” to allow the adoption of an ambitious and systemic vision of the problem which was raised in the “Strategic Framework for the Reduction of Vulnerabilities and Disasters in Central America.”

Under this Strategic Framework, risk management has been included in many policy initiatives and regional management of water, environment, agriculture, health, education, housing, public works, and food security, among others. All against the backdrop that has been described in a Regional Plan for Disaster Reduction, and more recently in the Central American Policy for Comprehensive Disaster Risk Management (PCGIR) that has been promoted by the Central American Integration System with the support and active participation of the Coordination Centre for the Prevention of Natural Disasters in Central America (CEPREDENAC)

The Summit of the Americas – Cartagena 2012

The statements and joint agreements signed by the leaders of all countries in the Americas, who met in the Sixth Summit of the Americas held in Cartagena (Colombia) in April 2012, are a final, interesting and recent example that illustrates the progress that the issue of risk reduction has made as a strategy for sustainable development.

This hemispheric forum dealt for the first time with the issue of disaster reduction as one of the main discussion topics on the agenda of Presidents of the Americas. Six very interesting mandates were adopted in the debate of hemispheric leaders. They are presented below:

MANDATES FOR DISASTER RISK MANAGEMENT AND REDUCTION:

- 1) To reaffirm that disaster risk management is a priority within our national public policies and development strategies.
- 2) To prioritize the allocation of resources and the design of financial protection strategies, as appropriate, aimed at mitigating the social, economic and environmental impact of disasters, with the support of subregional, regional and international financial institutions, *inter alia*.
- 3) To strengthen its institutional platforms for disaster risk management, in collaboration with regional, subregional, and international mechanisms, through strategies of mutual assistance and partnership, in order to facilitate joint research, and the exchange of knowledge, information, best practices, lessons learned in this area, and technology transfer, under mutually agreed terms.
- 4) To strengthen regional and subregional instruments as well as existing initiatives in the area of disaster risk reduction and management and humanitarian assistance, as well as cooperation and coordination mechanisms to generate synergy, underscoring the importance of coordination.
- 5) To work with subregional, regional and international financial institutions to strengthen financing mechanisms for adaptation to climate change, mitigation, recovery, rehabilitation and reconstruction geared toward reducing and managing disaster and strengthening the resilience of the communities and nations that are vulnerable to or affected by disasters.

6) To designate, where needed, and support where they exist, national and institutional focal points to promote the more efficient coordination among agencies of the Inter-American System, the international and regional organizations and entities, and subregional mechanisms and to foster the use of online tools in this context, in order to bring a more rapid and effective response to disasters and catastrophes.

It is worth doing the exercise of briefly outlining how these guidelines could be taken into account by any of the development agencies operating in our countries or even in our region. In principle, it is evident that both the interpretation and the particular commitments that each development body could undertake with regard to these six mandates will depend on the nature and on the sectoral and geographical scope of each entity.

As an example, we will explore very briefly the possible SELA's responses to these guidelines. We must recall that the Latin American and Caribbean Economic System (SELA) was created as a regional intergovernmental organization, based in Caracas (Venezuela), which groups 28 Latin America and Caribbean countries in order to promote a system of consultation and coordination for the adoption of common positions and strategies on economic issues vis-à-vis third countries, groups of nations, international forums and organizations.

The SELA's capacity as promoter of cooperation and economic integration among Latin America and Caribbean countries leads us to think that some of the six aforementioned mandates are of particular interest, especially those that are more prone to policymaking in areas such as financial cooperation and investment in prospective and/or corrective treatment of regional risk scenarios. Therefore, the contents of the first, second, third and fifth mandates are of particular importance.

Regarding the first of the mandates, it could be said that although this guideline was one of the most emphatic statements approved by the Presidents, its lack of specificity would make it difficult to take direct and concrete actions. However, it is undeniable that the content of the mandate justifies the fact that a permanent system of intra-regional economic and social cooperation such as SELA, which promotes consultation and coordination of positions of Latin American and Caribbean countries on development issues, does not promote some actions in terms of disaster risk reduction.

It is worth remembering that from the moment of its inception (Panama 1975), SELA has understood that the issue of disasters should be part of its agenda. However, at that time the institution was essentially asked to facilitate regional cooperation and assistance after the disasters occurred⁴. The challenge imposed by disaster risk management is not only to respond to disasters, but to minimize the risk of regional development models that make disasters possible. This requires a real reengineering that allows the inclusion of Risk Management as one of the organization's main purposes.

With regard to actions that might be suggested in accordance with the second, third and fifth mandates, we could say that they are much more concrete statements. As a result, SELA has the possibility of promoting initiatives, studies and strategies relevant to its activities. From this point of view, it is possible to explore mechanisms that could make SELA an entity aimed at coordinating, collecting and promoting best practices related to

⁴ This is set forth in the objective L of the Panama Convention establishing the SELA, which states that one of the objectives of SELA will be to "support all efforts to assist those countries which face emergency situations of an economic nature, as well as those resulting from natural disasters."

the design and implementation of financial strategies for risk reduction. A space where such practices were selected, based on the development of serious studies of cost-benefit ratios, with comparative analysis of opportunities and regional financial mechanisms for risk prevention and mitigation, as well as databases of resources that could be used by (government or private) economic and sectoral development actors working in its member countries that may be interested in developing specific initiatives related to disaster risk reduction, etc.

What we have tried to illustrate with this brief example is that the request that has been made in our region to promote disaster risk management, at both national and regional levels, is an open call to each and every one of the development actors: each of them has to design and implement its own agenda for action. This is one of the challenges, one of the opportunities and one of the most complicated risks that the issue of disaster risk management poses to our development agendas.

V. SOME ELEMENTS FOR CONSIDERATION

Understanding disaster risk management as a key factor for sustainability of development policies and strategies certainly brings various disadvantages (inconveniences) when specific agendas for action are being promoted. These disadvantages are intensified as such an approach opens spaces in institutional resistance conditions inherent to the paradigm changes.

1. The risks of risk management

On several occasions, these and other events have caused inconveniences and institutional perplexities in our region when trying to implement initiatives in this regard. Based on such experiences, some authors⁵ have warned about the risks that should be taken into consideration when considering implementing risk management policies and, in this sense, we would take the liberty of summarizing five aspects that we consider relevant to this task:

1) Disaster risk management is not achieved by simply changing the nomenclature, substituting the labels traditionally given to those institutional bodies responsible for the disaster management tasks with the name "Risk Management". On the contrary, this approach invites us to differentiate the treatment that should be given to the disaster problem along with its causes (promoting prospective and corrective actions to risk scenarios) and consequences (guaranteeing effective preparedness and response to disaster situations).

2) Disaster risk management, far from being a "physicalist"⁶ and technocratic effort, should be focused on geospatial characterization of the levels of threat and vulnerability of a given area. It represents a joint effort towards the continuous search for the causes of the problem in institutional practices that, due to ignorance, omission or incompetence, intensify the risk.

3) Disaster risk management, far from being implemented with the consolidation of institutional structures that have assumed in a departamentalized manner the responsibility of reducing the risk, fosters and facilitates a rethinking of powers to be

⁵ For more information on this topic, we recommend the chapter "The Risks of Risk Management", contained in the book "Risk Management: Guidelines for the implementation of a State Policy" Jimenez V., Linayo A., et al (MCT, Caracas, 2006).

⁶ For more information on this topic, we recommend reviewing the text "Disasters are Not Natural" by Maskrey A. et al; LARED 1992. Available at www.desenredando.org.

26

exercised by each and every one of the public, private and social actors so as to mainstream specific responsibilities related to the issue. The most popular strategy, far from being limited to the creation of equipment and institutional offices that deal with the topic in a unilateral manner, promotes coordination and ownership of the challenge as part of the daily practices of the institutional system in place.

4) Risk management, far from being a well-intentioned, ethereal and impractical speech to implement, leads to the establishment of mechanisms, resources, programmes, projects and actions of direct impact that mediate the causes of the problem and/or have an impact on the preparation capabilities that effectively address eventual disasters.

5) Disaster risk management, far from understanding that the role of communities in this effort is limited to be "passive recipients" of the institutional guidelines for the exclusive purpose of informing them of what should be done "before, during and after" disasters, makes it possible for them to actively join in the task of defining and promoting local development tasks and strategies to facilitate risk prevention and mitigation in their environment.

The previously summarized aspects only show the levels of complexity underlying any initiative intended to promote comprehensive mechanisms aimed at reducing disaster risks, such as those that are being promoted for some time in our region; some levels of complexity that normally encourage the proposal of approaches and organizational structures characterized by its "systematic" nature, and on which it is worthwhile doing some fundamental reflections such as those we endeavour to present as follows.

2. Regarding the notion of "systems" of the Disaster Reduction Systems

The concept of *system* that emerged in the context of the so-called systematic thinking and which, in the middle of the past century, was proposed by Bertalanffy and Bogdamoc⁷, has given rise to significant advances in various areas of human endeavour, and the success achieved in its adoption becomes easily understandable when we insert the intrinsic complexity that such term allows in the increasingly complex context that has characterized human endeavour over the last few decades.

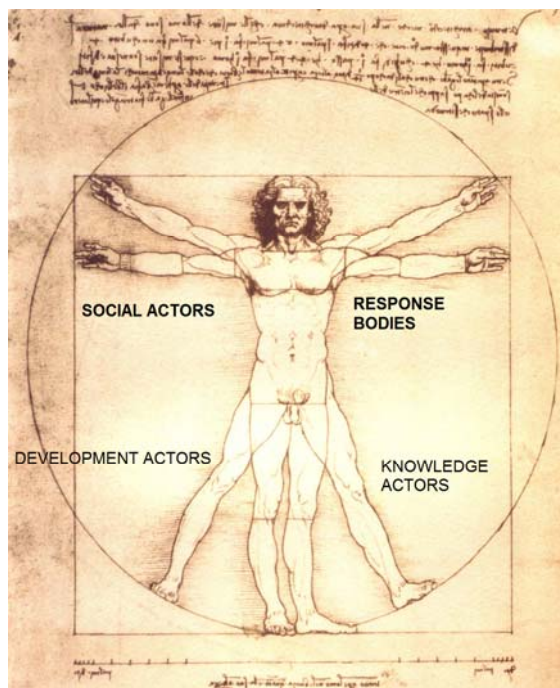
The universalization process of the concept of system has led to a number of indisputable benefits. Nonetheless it has also raised some setbacks associated with the existence of indiscriminate, and quite often slightly rigorous and unfounded, use in different contexts. The existence of this mismanagement (*mala praxis*) is interestingly explained by Fernando Savater when arguing that "It is possible to prove that high levels of erudition or ignorance invariably lie behind the ideas of complexity."

One of the scopes where it is considered necessary to specify the use of the concept of system is in the field of disaster risk reduction and/or management systems. Of course the relevance of the term in these cases becomes obvious when considering the complexity and multiplicity of tasks and the actors that must intervene in order to deal with disaster-related issues, both in the approach to the causes as well as in the attention to their consequences. In this setting, it is customary to hear in our region about the existence of national systems of Civil Defense, or Civil Protection, or Risk Management, or Disaster Prevention and Response, etc. In all cases, the use of the concept is based on the need

⁷ Various opinions are maintained regarding the authorship of the movement of systems. Authors such as Checkland and Schooles suggest the biologist Von Bertalanffy as its creator, but researchers like Dudley and Pustynnik argue that these credits belong to Russian Bogdanov. In either case, this dispute is not relevant to the purposes of this document.

to refer to a set of social actors and institutions joined in some way for the purpose of achieving the reduction of disaster impact.

When trying to characterize these systems, the first question to ask is which of the sectors can comprise them and, in this sense, it has been suggested (Linayo, 2005) that, for the purpose of sketching out an approximation of the kind of sectors that should be incorporated into an integrated disaster risk management system, it might be useful to use Leonardo Da Vinci's well-known drawing of the "virtuous man," given what this drawing implicitly illustrates in terms of convergence, proportionality, articulation and coordination of "sectors." Within the framework of this simile, the coordination of 5 actors has been proposed which, by way of head, arms and legs of the figure, should achieve a synchronized and harmonious risk management system. These components are the social actors (left arm), the response bodies (right arm), the knowledge actors (left leg), the development entities (right leg) and the government (head).



It is worth mentioning that, even recognizing that different approaches may exist with regard to the number and type of "parts" that must be integrated into a risk management system, in the regional context there has been convergence on the idea that the organization methods to be designed should base their strategies on the large national structures, of pyramidal nature, with perfectly established communication, coordination and subordination channels.

Various reasons may have led to the predominance of this type of approach. However, the regional experience of the last few decades seems to demonstrate how ineffective this type of structure has been with regard to the consolidation of permanent national policies and programmes that are intended to promote prospective and corrective treatment of risks and, with this, the causality of disasters.

In order to promote alternative methods of integration and operation for these institutional structures, it may be useful to consider the ways in which systemic thinking and

28

organizational analysis have evolved over the last century. In this sense, it is worthwhile to compare, even though in a very general way, two chronologically lineal ways of understanding the notion of systems and of designing organizational forms, with the first of them being based on a mechanistic approach and the second on the so-called organicist approach.

Regarding the origins and principles of the mechanistic systemic approach, we can point out that the complexity of the productive processes that had been developing at the end of the nineteenth century in the context of the industrial revolution required the approach to the complexity of organizational structures. At that time, the answer was based on understanding the organizational complexity in a way that is similar to a set of parts that, once well-articulated, guarantees the performance of a machine.

Broadly speaking, the mechanistic view of organizations assumes looking at these basic or elementary combined parts that interact mechanically to carry out the processes for which they were designed, as the parts of a clock. An interesting element that should be highlighted here is that, in the same way any machine assumes the preexistence of an "owner" who designs and controls its function so that it carries out its tasks properly, the mechanistic approach of the organizational design also implies the need for structures, procedures and protocols that facilitate the follow-up, coordination, subordination and control of the processes that operate therein, which presupposes the idea of separating the machine from its owner, the observer or agent interested in directing, controlling and improving its operation.

These principles seem to have configured most of the institutional methods that currently surround us. That is why educational, health, safety and civil defense structures follow organizational designs based on large national structures, normally of a pyramid nature, with well-established channels for communication, coordination and subordination. They always have an "owner" who plays the role of an "orchestra conductor" and are governed by a previously established "score," which strictly respects the rhythm set by the director.

The systemic mechanistic approach experienced an important "turning point" in the mid-twentieth century with the emergence of biologist Bertalanffy's ideas. He argued that even though we accept that a body is a structure composed of a set of parts, the body, as an entity, has properties that none of its individual parts has. For example, all living beings have matter. However, life proves not to be merely matter but a property developed from the matter itself. Likewise, the parts or organs of a living being work harmoniously to the benefit of the entire body, cooperating for the entire body to survive, maintaining its unity, adapting itself to different environments and different situations, etc. In this case, the parts influence each other and these influences allow changes in the nature and key functioning of the system that increase its ability to endure continuous evolution.

The concept of system and organization that emerges from these ideas suggests leaving the vertical regulation and subordination structure in the background and emphasizing the role of defining appropriate communication and self-regulation processes. Likewise, the definitions of Checkland are interesting when stating: "a system is an organized, self-regulating entity, which has developing properties and which at first is characterized by its ability to survive in a changing environment thanks to its internal self-regulation communication processes."

The relevance that these concepts have when designing national and/or regional structures for disaster risk management in the Latin American and Caribbean region is proven by the possibility that they offer us to reconcile visions in accordance with different expectations that may exist on these structures. This conciliation between the mechanistic and organicist approaches could result in the possibility that, in order to coordinate efforts of social and institutional stakeholders that require the establishment of coordinated protocols for disaster preparation and response (the consequences of established risk), preference is given to pyramidal structures of hierarchical type, with clear, pre-established subordination and communication channels, similar to those encouraged by mechanismism.

On the contrary, given the complexity and multiplicity of actors, processes and tasks that should be considered for the purpose of dealing permanently with the problem of reducing the causes of the risk (prevention and mitigation), it would seem interesting to promote organicist organizational strategies, which are much more focused on the definition and promotion of processes and instruments to facilitate the mainstreaming and self-regulation of the various actors than on the consolidation of vertical mechanisms for coordination, regulation and control.

The establishment of this or another similar agreement will be essential to minimize misunderstandings and confrontations among the different institutional sectors that are required to lead the consolidation processes of initiatives for integral disaster risk management that are currently being promoted in Latin American and the Caribbean.

VI. THE PRIVATE SECTOR AND THE NEW DISASTER RISK REDUCTION SCENARIO

The efforts that should be made to promote institutional cooperation and agreement scenarios that disaster risk management requires open the possibility of incorporating into this cause actors who, even though they have not usually formed part of the disaster risk reduction efforts, today have the motivation, skills and potential to encourage favourable ways of cooperating with this issue. Among these sectors stand out the partnerships that could be developed with representatives from the different areas that today comprise the regional private sector.

Based on the fact that the cooperation of the private sector during disasters is not new and that the support of these actors has been demonstrated in all the disasters that have been recorded in our region over the past few years, what has been happening with respect to the change of approach in the region appears to be an invitation to promote improvements both in the mechanisms as well as in the foundations on which the private actors may be directly involved in new challenges imposed by disaster risk reduction.

It has been suggested⁸ that one of these challenges is to promote more and better public-private cooperation practices, particularly in terms of the integrality, sustainability, relevance and profitability that these efforts could represent in the interest of private entities. Achieving this would open an authentic window of opportunity that would enable the public-private cooperation for disaster reduction provided during the past few years to stop the biased treatment given exclusively to contingencies when they appear, and to start advancing through a much more prospective and sustainable approach.

⁸ SELA "Guidelines for cooperation between governments and the private sector for disaster risk reduction. Approaches, achievements and challenges" (SP/SR-CGSPRRD/DT N° 2-11) Year 2011.

30

In this regard, an effort that should be promoted is to continue identifying, systematizing and analyzing mechanisms that could be used to improve disaster reduction in Latin America and the Caribbean. In this regard, the inclusion of the private sector, in addition to representing an opportunity for cooperation at the disposal of the governments in the region, is also a profitable investment for the private interests, particularly in terms of safety of goods and property, business continuity, and consolidation of their corporate image.

This profitability is evident when analyzing data, such as that collected by the Federal Emergency Management Agency (FEMA quoted in SELA 2011). According to this information, 40 percent of businesses that are closed as a result of a disaster never reopen their doors and 25 percent of businesses that try to reopen their operations fail in a period of one year. This type of data undoubtedly invites us to consider the involvement of the regional private sector in efforts to reduce disaster risks in their areas of operation.

For the purposes of structuring in some way how public-private participation could become effective in the complex challenge that disaster reduction represents, it has been suggested the proposal by Cardona (2001, 35), who suggests that the integral approach to the disaster risk problem provides for work agendas divided into four key areas of action:

- *Risk identification and characterization:*
Focused on the development of efforts aimed at identifying as detailed as possible the levels of threat and vulnerability to which we could be exposed.
- *Risk prevention and mitigation:*
Focused on the design and implementation of measures to prevent exposure of new developments to known threats (prospective approach) and reduce the levels of vulnerability of existing developments to known risks (corrective approach).
- *Preparation for disaster scenarios:*
Focused on strengthening the internal operational capacities and inter-institutional coordination to ensure fast and efficient response in the event of disasters.
- *Risk transfer:*
Focused on promoting the transfer of the financial risk involved in the potential loss of property that may occur during a disaster and results in the implementation of insurance and reinsurance policies.

Hereafter we will summarize some of the aspects that have been suggested for the purpose of promoting public-private participation in the different fields of action described.

1. Private participation in disaster preparedness and response

Although the logic in the approach to the problem of disaster risk should initially be based on the treatment of the causes of the problem (risk and management) and subsequently on the treatment of the consequences (disaster response), we will start to analyze this topic from the viewpoint of the consequences, preparation and response during disasters, and the reason for this is that this is the most voluminous scope of public-private participation and it is where the most experience can be found.

The reasons for the above may be associated with the solidarity and support that the private sector often provides in cases of disasters. The most customary of these expressions of solidarity are evident in cases of disasters that affect the country or region, where each private actor develops its operations. However, more frequent examples arise from private solidarity that begins to erase the national borders that exist in Latin America and

the Caribbean⁹, and starts integrating and becoming effective by means of the multinational cooperation mechanisms that operate in a large part of our region.

The foregoing suggests that the effort needed to promote public-private participation in the tasks of response is not to motivate participation or collaboration of the private sector, but to encourage higher levels of efficiency and coordination in the way such cooperation is provided. In this regard, it is essential to make an analysis based on the premise that the efficiency of any type of humanitarian aid is directly proportional to the previous levels of preparation and coordination that exist between those who provide and those who receive such assistance¹⁰.

In order to solve the existing challenges in this regard, different international, regional and local initiatives are being developed and are committed to strengthen the private sector's capacities of preparedness and response to disasters. Some of these initiatives are promoted by various regional institutions focused on disaster relief (OFDA/USAID, the International Red Cross, WHO/PAHO, OCHA, UNISDR, etc.), while in other cases the efforts come from the organizations responsible for preparation and response to disasters in some countries in the region.

On the conceptual foundations that could define the bases and nature of the coordination of the private actors in disaster scenarios, we could say that what is required here is to optimize the appointment of these actors within the functional and mechanistic hierarchical structures that the ex-post disaster management requires. This would ensure higher levels of coordination and effectiveness in the joint efforts that should be developed by social, institutional and private actors, allowing for the possibility that such efforts operate on the basis of articulated response protocols composed of pyramidal hierarchical structures (mechanistic), with clear pre-established subordination and communication channels, which tend to be very effective in the ex-post disaster management.

2. Private participation in risk prevention and mitigation

Something that is common to the multiple national and regional initiatives recently being encouraged with the intention of reducing the impact of disasters is that they all, without exception, prioritize prospective (prevention) and corrective (mitigation) risk management as strategy. This fact invites us to suggest that the most important challenge that must be promoted in the public-private relationship for risk reduction is to stop limiting the actions of these alliances to disaster preparation and response, and to start working on initiatives that would propitiate conditions to avoid the occurrence of disasters rather than being limited to what to do before-during-after the disaster.

The reason behind this call, as paradoxical as it may seem, appears to be much clearer and understandable for the private actors than for an important part of national and regional institutions specialized in the issue of disaster reduction which is called **profitability**. In fact, as already noted (LARED), even today most of the investment being made to deal with the disaster issue is intended for post-disaster assistance, following post-disaster reconstruction programmes; another part is aimed at preparations for contingencies and, in the very last place, the activities aimed at reducing vulnerability and avoiding the construction of risk scenarios. This fact suggests that we have been

⁹ A vast number of examples of this type of public-private agreements can be found in the document "Guidelines for cooperation between governments and the private sector for disaster risk reduction. Approaches, achievements and challenges" (SP/SR-CGSPRRD/DT N° 2-11) developed by SELA in 2011.

¹⁰ It is worth mentioning the work that PAHO/WHO, as well as other multiple agencies dedicated to humanitarian support, have developed (<http://www.paho.org/spanish/ped/pedhumes.pdf>)

32

operating in a kind of inverse logic that keeps us anchored to the tasks that are less profitable than those offered by the spectrum of action for risk reduction.

This fact should be reviewed, considering that the private sector has always shown its strengths in calculation and decision-making that optimize cost-benefit relationships, and based on this fact it is essential for regional institutions responsible for promoting disaster risk reduction to increase the number of choices that are currently being offered in order to promote the prevention and mitigation of risks within the framework of public-private work alliances.

As for their work agendas, it is appropriate to suggest the type of guidelines that private actors could develop in order to ensure a better incorporation of the aspects for disaster risk prevention and mitigation. In this sense, it seems possible to promote their participation in three central work plans: a) The characterization of threats and vulnerabilities of their facilities and operational environments; b) The prospective consideration of risk in their plans and expansion projects, and finally; c) The reduction in the levels of risk in their operational infrastructure, depending on cost-benefit studies.

In order to illustrate the type of language that seems appropriate when promoting this kind of initiatives on the part of the private sector, we will mention some examples related to structural risk mitigation efforts that have been developed by private entities and clearly show how these investments can be highly functional and profitable.

We should recall that the guarantee of seismic safety that most seismic resistance codes offer in our region is essentially limited to protecting the safety of human lives and not to property safety or business continuity. In this sense, it should be noted that, at the time of an earthquake, what may be expected to occur is that the buildings constructed in compliance with seismic rules would not collapse; however, this does not exclude the likelihood that their damage can be very severe and even irreparable.

This is an element that should be known by some private actors who, in addition to the loss of patrimony that the foregoing might represent, must add the costs that might be associated with the forcible interruption of operations, the damage that could be caused to their furnishings and equipment, the costs that would be incurred by the loss of market share, etc. All this may comprise a speech capable of persuading a private entity operating in areas of seismic risk to become concerned and invest in risk prevention and mitigation.

A very interesting example that illustrates the rates of profitability of these investments was published by the structural reinforcement company Miyamoto International (available at: www.miyamotointernational.com) and refers to the economic and social cost that the "doing nothing" action may represent for the private entity operating in seismic areas as far as seismic risk mitigation of its facilities is concerned:

Study: Multinational food company before the 1994 earthquake in Los Angeles

- **Value of the facility:** US\$1.3 billion (1993)
- **Location:** Los Angeles, in the area of the epicentre, after the earthquake, surrounded by buildings that had been destroyed or severely damaged
- **Original construction:** 1954
- **Potential business interruption:** Up to 18 months

* **Before:** Prior to the earthquake, a study of risks was carried out, and some of the buildings were urged to carry out thorough inspection. The report on the deficiency of the buildings showed that they had a possible maximum loss of over 50 percent due to the inappropriate use of anchors for the walls and shear walls that were already experiencing 40 percent stress. The potential consequences were partial collapse and general fracturing that would make the building unserviceable. The cost-benefit analysis showed that the best option would be to reduce the possibility of business interruption to less than a week. The company decided to upgrade the building according to the recommendations from the structural feasibility audit.

* **After:** In 1994, the massive Northridge earthquake impacted this sector. The minor damage caused by the earthquake to this company showed a cost-benefit rate of 75 to 1 and a business interruption that was only 4 days. The company estimated that it managed to prevent US\$350 million in damages and US\$400 million in business interruption. When we take into account the potential for loss of market share, the total loss avoided would be more that US\$ 1 trillion. The total cost of the remodeling was approximately US\$10 million.

This type of experience and this kind of language seem to be what should be promoted when inviting the private actors to incorporate the potential threats and risks of disasters in their environment as part of their operation and investment agendas.

3. Financial transfer of disaster risk in the private sector

It has been acknowledged that the private actors often protect the security of their investments in the case of disaster through the acquisition of insurances that transfer their financial risks to companies specialized in insurance and reinsurance. In this sense, it is useful to make some considerations as to how these instruments operate.

Generally, it is not customary that an insurance policy covers losses that were caused by business interruption. It would be appropriate to ask how the operation of a company that is not directly affected by the disaster would be impacted by the loss of telecommunications, energy and other basic services, or how it would be impacted by the fact that there are no service providers or the community where their employees live was destroyed or isolated.

“There is no business continuity when the company’s employees are trapped in a shelter.”
Daniel Gallardo, President of the National Commission for Risk Prevention and Emergency Care, Costa Rica

In addition, it is often ignored that the mortgage insurance only supports the balance that is still owed on a loan given to a businessman, and without an additional insurance, the capital and other investments that the private actor may own could be lost as a result of a disaster. It should also be noted that, from the amount the insurance would provide in

34

these cases, it may be necessary to calculate the deductible and that in these cases the depreciation per building could reach very high values.

Finally, it is important to mention again a powerful argument which should call to reflection and to the diversification of actions that the private sector develops in order to prevent and mitigate disaster risks as shown in the following reflection:

"The first condition to claim the insurance in case of an earthquake is to make sure we are not killed by the earthquake."
Diana Vilera, Manager of Sustainable Development of
Total Oil and Gas - Venezuela

4. Corporate social responsibility and social investment agendas

Corporate social responsibility is a widely interpreted concept that promotes the private sector's commitment to the institutional and social development of its environment. On this principle of action, the United Nations suggests the following:

"The social responsibility of the private sector goes beyond the sector's day-to-day operation of producing a certain range of products and services in the most efficient and economical manner. The social responsibility of the private sector concerns the relationships of a company not just with its clients, suppliers and employees, but also with other groups, and with the needs, values and goals of the society in which it operates. All these groups can be regarded as stakeholders in the company. Stakeholders can be identified as those individuals or groups of individuals that have an interest, or take an interest, in the behaviour of the company both within and outside its normal mode of operation."

The implementation of this principle could suggest, in view of businesses that are characterized by the firm commitment to the promotion of human development in the areas where they operate, the development of efforts and initiatives for disaster risk reduction that could arise from questions as follows: How sustainable is a portfolio of investment in local human development, sustained by private capital, whose products have the potential to vanish after a few hours of heavy rains or after a few seconds of a moderate earthquake?

As a concrete example of private commitment with this approach, we can quote the effort that has been promoted between the years 2007 and 2012 by the Sustainable Development Management of the subsidiary of the multinational company Total Oil & Gas that operates in Venezuela. In the year 2007, this private stakeholder decided to comply with tax provisions established in that country by promoting a pilot experience to build national capacities for disaster risk management. For five years, this experience has made it possible to consolidate a portfolio of 28 research and development projects related to disaster reduction issues that have resulted in the formalization of 22 cooperation agreements with local, national, and international institutions. In addition, it has supported the academic training of more than 400 professionals in various topics related to risk management and sustainability, encouraging the creation and strengthening of pioneer academic programmes, such as the first Master's Degree in Social-Natural Risk Management (currently operative in the Universidad de Los Andes).

The support that the company Total Oil & Gas Venezuela has provided on this issue represents an effort that has been developed in an area of absolute importance which, paradoxically, has so far been very rarely taken into account by the authorities

responsible for the support of sustainable development that maintain both energy companies and other stakeholders of the private sector.

5. Some sectoral initiatives and achievements of interest

As mentioned in the introduction, the previous document prepared by SELA which was entitled, "Guidelines for cooperation between governments and the private sector for disaster risk reduction. Approaches, achievements and challenges" (SP/SR-CGSPRRD/DT No. 2-11), includes several cases of interest that are taking place at the regional level on both public-private cooperation and private initiatives aimed at promoting disaster risk reduction .

In this document, emphasis was made on how large trading houses, dairy companies, communications companies, industry associations, transport companies, etc., were beginning to articulate themselves with actors and institutional networks in order to support post-disaster efforts in the region. Mention was also made of some steps that are being taken among private stakeholders in the region in order to incorporate disaster risk as an element of their agendas for business continuity and security of their investments.

Regarding this kind of initiatives, outstanding experiences are worth mentioning. An example of this is the experience in the financial, agricultural and insurance sectors, related to the establishment of mechanisms for the transfer of agricultural risks associated with large climate-related disasters.

In this respect, it is very important to review what is stated in the draft document entitled "Policies for Climate Risk Management in the Farming Sector"¹¹. that was prepared by the Work Team on Risk Management and Farming Insurance of the Coordination System of Farming Policies of MERCOSUR (REDPA/CAS). This document presents a series of analyses and mechanisms, which have been promoted by some public and private stakeholders in the southern countries of the continent, in order to propitiate mechanisms that would enable them to withstand specific levels of sectoral risk affecting their economic activity.

As part of the inventory included in that report on the resources available to reduce the risk of climate disasters in the agricultural sector, emphasis is made on the creation of more companies and instruments for financial security in this sector, the training and strengthening of public and private human resources in the field, the generation of technological platforms that would enable permanent access to information that these private producers may need for a better sectoral management of risks, etc.¹²

Also on the same line, it is interesting to note the effort that is being undertaken by certain institutions, such as the Inter-American Development Bank (IDB), to finance research activities and projects to improve the development of the private and financial sector in an attempt to improve the financial risk management in the agricultural sector with the intention of reducing the volatility of prices or to improve the productive capacity; an attempt that has given rise to a recent call for projects at the regional level, the results of which shall be seen soon.

Similarly, it is encouraging to confirm in other institutional spaces, not directly linked to the issue of disaster reduction, that measures are being taken to promote risk management

¹¹ Available at <http://gedu.secnepro.com>

¹² A remarkable element in that document is that, when referring to the national system responsible for the preparation and response in cases of disaster, it confirms that: "The National Emergency System acts in a rather ex post manner and is aimed at planning, coordinating, executing, evaluating and understanding in prevention and other actions required in all exceptional situations of emergency, crisis and disaster caused by natural phenomena or by human action (...) i.e. that transcends the area of farming and climate phenomena."

36

and business continuity in the private sector. In this respect, it is important to mention as an example the provisions published in January 2012 by the Superintendence of Institutions of the Banking Sector of Venezuela among all the financial institutions and commercial corporations that offer their clients the opportunity to make electronic transactions for payments or withdrawals.

Based on the results of a diagnosis made in 2011, which demonstrated that in the risk analyses that were required to authorize the installation of principal and alternate centres for processing the electronic operations being developed by these banks, and based on the knowledge of the threat levels of disasters that have been developed by the entities of knowledge in the country, this superintendence decided that the principal and alternate centres for processing the aforementioned data could not be located in areas that share common levels of seismic threat and that all studies on risk that must support the installation of this type of facilities must incorporate at least the consideration of the following aspects:

- Seismic areas prone to flooding, mudslides and landslides or instability of the land.
- Military installations or areas declared as "security" by the State.
- Areas with high industrial risks, such as leaks, spills or escape of dangerous or inflammable materials, gas pipelines, gas stations, oil wells, among others.

This type of measures is an excellent example of how the prospective disaster risk management is praxis in private sectoral areas of absolute importance through provisions of sensitized public entities that are, more than respected, accepted by some private entities that understand the importance of such guidelines for the continuity of their business.

These examples also suggest how, despite the complexity and multiplicity of actors, processes and tasks that are required when implementing actions to promote the prospective and corrective treatment of disasters (prevention and mitigation), it is possible to take specific steps. And how, in response to the change of paradigm that has been evolving with respect to Disaster Risk Management, the design of interventions on organizational conceptions of organicist nature materializes. They are much more focused on the definition and promotion of processes and instruments that mainstream the topic among the various private stakeholders than on the consolidation of vertical mechanisms for coordination, regulation and control.

VII. CONTINUITY OF GOVERNMENT AND OF OPERATIONS IN SITUATIONS OF DISASTER

Although the development and promotion of mechanisms aimed at both prospective (preventive) and corrective (mitigation) treatment of disaster risk is the main challenge we have in our region as far as disaster reduction is concerned, we must not forget that the results obtained from this type of effort is usually medium and long-term. When we consider this fact and compare it with the large amount of accumulated risk currently existing in our countries, it is easy to realize the great importance of strengthening efforts in our region with respect to issues such as preparation for response in cases of disaster in order to be better prepared to face calamities that will unfortunately and inevitably affect us in the future.

If we ask ourselves: What is the priority objective of the efforts being made in preparation and response to disasters? the answers may be varied. Among them stand out the rescue

and saving of victims and giving them immediate medical attention; restoring fundamental public services (water, light, communications, roads, etc.) that have been damaged; maintaining security and public order in the affected areas; guaranteeing an adequate, efficient and expeditious treatment and control of both local and international aid that is usually provided to the regions and/or countries that have been affected by disasters, etc.

While all those aforementioned aspects are fundamental, there is one that we usually forget and determines that all the others are managed and operated adequately, which is the need to ensure a certain level of continuity of operations after a disaster that enables both public and private organizations to continue operating. It is important to recall that in the recent past our region has witnessed disasters that not only have destroyed the lives of thousands or tens of thousands of people, generated losses of tens of billions of dollars and broken economic and production infrastructures, but also have caused partial or total collapse of the operation of the State and its institutions.

Based on the foregoing, it becomes necessary to strengthen the efforts that are being made in our countries in an attempt to guarantee the continuity of essential operations of governments and of the institutions of the State in case of different types of contingencies. This commitment requires the use of protocols that ensure that the authorities and officers are available to assume their roles during emergency periods.

Another central aspect that must be considered in these protocols is the type of measures that should be taken into account if a disaster causes injuries; the death of some key Government officials; the destruction of offices of governmental entities and loss of documents or equipment that might be essential for the continuity of government activities. In such cases, it should be understood that the government, at all levels, should be responsible for planning actions in each and every one of these cases and providing the continuity of efficient leadership and authority, direction of emergency operations and management of recovery operations.

In this respect, and as an example, certain mechanisms have been suggested to guarantee that for every government official who plays a role in the management of operations during a disaster there should be at least three other persons, previously designated and trained, who can, if necessary, perform his/her responsibilities. These officials would have, if necessary, the same responsibilities and authority as the disabled official.

It is also important to consider in these protocols the preservation of essential archives and equipment for the operations and functioning of the government and its institutions. In this respect, it is important to establish the respective responsibilities associated with the preservation and protection of vital archives, the instrumentation of data backup mechanisms, the implementation of guidelines to ensure that the institutions identify, maintain and protect their vital archives, etc.

The vital archives should include those that can become essential to support the response and recovery operations, the location of emergency equipment and supplies, lists of personnel, etc., as well as those that would require the operations of government after the disaster, including those that are essential for the rights and interests of individuals (payroll, civil records, financial records, etc.), government entities, corporations, or other entities, vital statistics, title deeds, paid taxes, license records, articles of incorporation, and proprietary and historic information.

38

A final aspect that we would like to mention, and which should be considered in these protocols of continuity of operations, is the obligations that should be assumed in this type of scenario by companies providing services to the public sector and its employees. It is important to note that this is an aspect that involves responsibilities of both government and private sectors, and in this respect it is essential to guarantee that in the event of a disaster, these actors or companies providing public services are forced to work and provide those services required by the community.

1. Business continuity in cases of disasters

In the same manner and under similar principles as those that promote the development of efforts and preparations in response to contingencies that guarantee the continuity of government in cases of disasters, mechanisms have been promoted, particularly during recent years, with the intention of fostering the continuity of business and operations of the private sector in cases of different types of contingencies.

The management of efforts to guarantee business continuity in these cases has been suggested as a process of holistic management that identifies in the companies the potential impacts that might threaten the organization and, on this basis, design mechanisms and structures aimed at increasing both resistance and resilience¹³ in contingencies.

In order to achieve these objectives, various methods, standards and strategies have been suggested with the intention of developing among the private actors their respective Business Continuity Planning and Policies for Business Continuity Management. These guidelines provide the structure around which the capacity of Business Continuity Management of a company is designed, built and finally outlined in a document that describes the scope of the programme, the actions to be assumed, and it also assigns responsibilities.

It should be noted that although the private protocols for business continuity management have not been outlined with the intention of specifically dealing with the risk of disasters or the response to contingency, their basic structure makes them useful in promoting better capabilities of disaster preparedness in both companies and industries, and businesses. Some of the elements of greater interest that are considered in this respect in business continuity planning are the following:

a) *Risk assessment of the company:*

The context of the Business Continuity Planning: a Risk Assessment focuses on the probability of the impact of a specific number of threats that might cause business interruption. The activity of Risk Assessment in this respect suggests focusing primarily on the most important business functions identified during the prior process of Business Impact Analysis.

b) *Identification of business continuity strategies:*

This phase addresses the issues of identification and selection of Business Continuity Management Strategies that should be used to maintain the activities and processes of production in case of an interruption.

c) *Considerations of business continuity management strategies:*

¹³ Although the term *resiliencia* is not accepted by the *Real Academia Española*, its use is becoming more common in the literature on disaster management and is associated with the capacity to recover and react efficiently and rapidly after suffering the effects of a disaster.

This consists of the selection of alternative methods of operation that can be used after a business interruption, with the intention of maintaining or resuming the activities of the organization and its (internal and external) dependencies based on the priority and the time schedule established by the Business Impact Analysis and protection in the presence of vulnerabilities and unique points of failure in the critical processes of the business identified in the Risk Analysis.

It is worth mentioning also the contributions that methodologies such as the ISO, commonly related to the quality of business, can offer to the establishment of private standards applicable to disaster risk reduction. The most well-known standards on this subject include the following: ISO 9000 Standard (Quality Management Systems), ISO 10000 Standard (Guidelines for Quality Management Systems / Technical Reports), ISO 14000 Standard (Environmental Management Systems of Organizations) and ISO 19011 (Guidance for Quality and/or Environmental Management System Audits).

It should be noted that since 2006, ISO Standards are being discussed and approved, and are exclusively aimed at establishing what their creators have defined as management security systems, business continuity and disaster recovery. In fact, one of the most important standards that has been developed in this respect came to light in 2007 and is known as ISO 27006 Standard: "Guidelines for information and communications technology for disaster recovery services." However, a review of the contents of this standard immediately reveals that, although the terms used therein are very similar to those applied to the scope of disaster risk management, its emphasis is centred on providing the companies that supply or depend on information technology services with resources so that their data (databases, payroll, service records, list of clients, dispatch, etc.) would not become victims of what they understand, probably for justified reasons, as "a disaster."

Another compulsory reference is related to the international ISO 31000:2009 standard, aimed at "risk management" and made up of a set of principles designed to help organizations make an effective management of the risks that could undermine the achievement of business objectives, including the risk of breaching the objectives of production, or failing to comply with legal requirements, or lack of confidence, or operational inefficiency, or the emergence of crisis in governance or financial crisis, etc. All of these are undoubtedly issues of interest to the private stakeholders, but can hardly be linked directly to the objectives imposed by disaster risk reduction.

2. The lessons of Haiti

In order to provide some examples of the challenges and opportunities that can arise as we improve our mechanisms of preparation and response, and with it the continuity of government in cases of disaster, we would like to refer briefly to the case of Haiti and the impact that the earthquake recorded on 12 January 2010 had on that country.

In a report developed by the United Nations humanitarian agencies¹⁴ a few days after that terrible earthquake, it was confirmed that the seism in Haiti was the worst disaster they have had to confront in terms of organization and logistics, and this was due to the total collapse of local government, institutions and basic infrastructure of services.

¹⁴ Quoted by BBC in <http://www.surlink.cl/elmundo/4445-en-haiti-ni-siquiera-hay-gobierno.html>

40

Image of the Palace of Government of Haiti destroyed by an earthquake on 12 January 2012

From the news that were spread on that disaster, the collapse of the institutions and the breakdown of priority structures and functions of government were evident. President René Preval did not have a space where he could govern from since his Palace and private home had collapsed with the earthquake, and this forced him to set up a makeshift office and dwelling that were conditioned in a police station which did not have the minimum acceptable requirements for a centre of operations. Similarly, the various members of Cabinet of the Haitian Government were also left without offices and without a space where they could meet to take decisions.

Global news also reported the deficiency of national capacities to operate the convulsed airport in Haiti, which collapsed after a few hours with the arrival of a great number of aircrafts from different countries that started to send all kinds of help, most of them unsolicited, due to the lack of adequate protocols for the assessment of damage and analysis of needs implemented by the local authorities.

Blocked roads, structurally and/or functionally collapsed institutions, crowded hospitals and in some cases with few or no doctors, etc. All of these are elements that suggest the devastating earthquake that rocked Haiti that Tuesday not only left the nation with hundreds of thousands of dead and homeless victims, but also broke the very foundations of its institutional system, allowing anarchy, chaos and insecurity to characterize the state of the country. "We must rebuild everything. The palace fell down, Parliament is destroyed, the Palace of Justice collapsed," reported President Preval at the time.

It is worth mentioning that the lack of protocols to mitigate inefficiency and chaos and guarantee continuity of government and emergency operations that were developed in Haiti on that occasion not only showed the weaknesses of the country, but also revealed significant problems of coordination between the regional and international agencies of humanitarian help.

This type of situation should invite us to strengthen and review periodically both local and regional mechanisms for disaster response in Latin America and the Caribbean, and most particularly to promote among the governments of our region the development of protocols that will guarantee the continuity of government operations and institutional functioning in cases of disaster.

A final aspect that is also worth mentioning with respect to what happened in Haiti has to do with the nature of humanitarian response and welfare that was offered to that country by the region and the rest of the world. In this respect, we must mention in the first place the strong spirit of cooperation that emerged both in our region and in the entire planet after that terrible disaster. A contribution that, in many cases, was not preceded by major conventions or bilateral agreements among countries, and despite this, it came naturally and on the basis of strong moral imperatives of solidarity that fortunately seem to exist in our region.

The problem that arises from the experience of Haiti is therefore not one of solidarity, but of efficiency. And in this respect, it is once more necessary to make a rigorous assessment of how the authorities have performed and how they are performing, including at the time of implementing protocols of humanitarian and emergency response to calamities.

An excellent work prepared in this respect has been published recently by the Pan-American Health Organization (*PAHO*), which is entitled "Health response to the earthquake in Haiti January: Lessons to be learned for the next massive sudden-onset disaster"¹⁵. The data contained in this work is simply staggering: for example, in relation to the intervention of international rescue organizations and teams that arrived in that country to contribute to the rescue of victims trapped by the earthquake, it is reported that more than 60 rescue teams (USAR) from 30 different countries mobilized around 1800 rescuers to Haiti after the earthquake.

It has been estimated that a rescue team (similar to those mobilized from the United States), operating in a foreign country, can cost up to US\$ one million daily. This value, extrapolated to the number of teams that participated during the 10 days that the rescue activities lasted in the collapsed structures, suggest that the cost of that operation could have reached between US\$ 300 and 500 million.

Another aspect mentioned in that study is that, according to the figures of OCHA-UN, all that immense effort – both financially, and logistically and technically – developed with the most laudable intention, resulted in the rescue of a total of 132 persons¹⁶. Obviously, the lives of 132 human beings is something that we cannot put a price on, and therefore we cannot question the investment of whatever is necessary to ensure the life of someone who needs help in a contingency. However, this fact does not prevent us from asking questions such as the following: How many local rescue teams in collapsed structures could have been equipped and maintained in Haiti with what the externally developed intervention cost? Would the operative response have been more efficient, if it had been done with local workers, previously equipped and trained and who know the area, the language and local idiosyncrasies? How much could the response time of these support teams have reduced if they were local, and how many more persons could have been saved in that period?

¹⁵ Available only in English at <http://new.paho.org/blogs/haiti/?p=2147>

¹⁶ The cost per rescued person in the region could have been around US\$ 3 million

42

Another interesting element that gives answers to these questions is also presented in the aforementioned report, which suggests that the immediate local response given in Haiti by two rescue teams assigned to the Civil Protection Department of the country achieved the rescue of 78 persons, despite the limited resources and the lack of adequate equipment to work with. These cases of rescued persons were not included in the reports on the total number of persons rescued that were given as a result of that earthquake.

These elements, among others, should invite us to foster mechanisms for cooperation, including those of public-private nature and much more efficient. Rather than being activated after a disaster, they should start to think and act to mitigate the exacerbated risk levels that exist in most parts of our region.

VIII. ELEMENTS FOR A BETTER PUBLIC-PRIVATE PARTICIPATION IN DISASTER RISK REDUCTION

The way in which the postulates promoting the approach to integral disaster risk management are being accepted in Latin America and the Caribbean invites us to explore new mechanisms that incorporate a permanent promotion and participation of the private sector in this crusade. It is within this framework that the initiative assumed by the Permanent Secretariat of SELA and aimed at promoting more and better ways of public-private cooperation for disaster reduction shows both its potential and its relevance.

A strategy that could make the results of these efforts much more promising and sustainable is to show that the idea of involving the private sector in the issue of risk management not only is an opportunity for cooperation at the disposal of governments, but also an intelligent and highly profitable investment for the private sector in the region. The key is to know how to promote partnerships on the issue, built on a "win-win" relationship among governments and their institutions, and the representatives of the business and commercial economic activity. It is on this basis that it will be possible to promote more sustainable, diffused and efficient practices for public and private cooperation in disaster risk management.

When trying to convince the private sector that investment and cooperative work with government entities in issues inherent to risk management is a "good business," there seems to be a need to remind the local and regional institutions responsible for this task about specific aspects of conceptualization, speech and practices that can be better understood, and therefore accepted, in each of the distinct sectoral areas that make up the private activity. In the context of these practices, it will also be fundamental to incorporate as partners other private actors who may have positive experience in the subject, in order to enable a communication between peers that would allow them to exchange specific approaches and experiences that might have been identified by and before their peers in favour of risk reduction.

Another of the commitments that must be faced by the structures for risk management in the region is to continue implementing mechanisms to promote prevention and mitigation among the private actors, such as highly profitable strategies for disaster risk reduction. In addition, they should not leave aside the support that must be given to the aspects of disaster preparation-response.

In order to systematize some specific recommendations in this respect, we consider it useful to recall the recommendations that were proposed in the document entitled "*Guidelines for cooperation between governments and the private sector for disaster risk reduction. Approaches, achievements and challenges*" (SP/SR-CGSPRRD/DT N° 2-11)

SELA 2011, to provide guidelines for promoting more and better ways of public-private cooperation for disaster risk reduction:

1. They should be based on the fact that private cooperation has been a constant feature in disaster scenarios in our region over recent years. This presence has sometimes been possible even without institutional mediation, which shows the interest and solidarity of many of these actors in this area.
2. In order to make efforts more efficient and use the aforementioned readiness, it is necessary to promote, within the framework of both public and private institutions, forms of work not limited to the occurrence of disasters and their aftermath.
3. Efforts should be made to improve regional mechanisms aimed at promoting participation and strengthening the private sector in disaster preparedness and response. These initiatives should continue to be the subject of agendas of the regional and national entities for disaster preparedness and response, in particular with respect to optimizing protocols to facilitate the coordinated use of available local capacities during a disaster.
4. It is reiterated that a very promising channel to promote private cooperation is the unions, which represent this sector and make up the Chambers of Commerce and Industry or their equivalent. Coordination through this means could well promote specific mechanisms that are pertinent to the nature of the work of the various sectoral spaces (chambers of telecommunications, construction, pharmaceutical industries, chemical industries, etc.).
5. One challenge still lies ahead, and that is the promotion of private cooperation in the prospective and compensatory treatment of disaster risk. This is the less developed area in the region and, paradoxically, is the one that has been pointed out as the most profitable and with the best cost-benefit relationships.
6. One of the elements that has an impact of the lack on the private sector's commitment to the prospective and compensatory treatment of risk is the absence of clear, accurate, relevant and convincing information on the levels of risk in their areas of operation and the measures they could implement to reduce such risks. The private sector cannot be asked to implement practices that are ignored even by the institutional actors themselves, which leads to the need to insist that prevention and mitigation should be promoted as strategies to prevent risks and thus disasters, at least with the harshness that they have been occurring in our region.
7. We believe that the growing regional interest in integral risk management is a guarantee of the private sector's increasing interest in becoming involved in risk prevention-mitigation activities, and this will stress the need, in the short and medium terms, to promote new and innovating forms of confronting the prospective and compensatory treatment of risk that are in tune with the interests of the private sectors.
8. A requirement to promote the foregoing will be the development of regional and national efforts aimed at, rather than training, the academic professionalization of officials working in disaster management institutions, so that they have more and better tools to promote both risk prevention-mitigation and disaster preparedness-response.
9. The principles of the organicist approach of systems should invite to demystify the prevailing idea that the contribution of the private sector to disaster reduction should

44

exclusively focus on activities being developed by regional disaster management institutions. A private actor aware of the level of risk of its areas of operation and sensitized/concerned about the sustainability of its business is the best guarantee of successful agendas of intervention in this topic.

10. Finally, it is necessary to promote permanent platforms that identify and boost best practices of public-private cooperation in the area of disaster risk reduction in the region, i.e., spaces that enable permanent exchanges of studies, information and experiences that serve as input and/or model for ongoing and future initiatives in this direction among the countries of Latin America and the Caribbean.

IX. CONCLUSIONS

Already at the beginning of the nineties, shortly after the United Nations General Assembly through Resolution 44/236 (1989) declared the International Decade for "Natural" Disaster Reduction 1990-2000, voices in Latin America were beginning to raise warning that the approach that was being used to promote the treatment of the issue of disasters was lacking in integrality and depth that demanded an effective approach and not merely symptomatic to this complex problem of development.

Throughout this quarter century, the evidence we have accumulated seems to demonstrate that the warnings that were then made by those minority groups were real, and as an example of this recognition we refer to three fragments of the speech delivered on 5 July 1999 by the General Secretariat of the United Nations, Mr. Kofi Annan, on the occasion of the closing of the International Decade for Natural Disaster Reduction, at the International Conference Centre in Geneva:

- *"As the International Decade for Natural Disaster Reduction (IDNDR) draws to a close we have achieved much, but we continue to confront major challenges. It is a tragic irony that 1998, the penultimate year of the Disaster Reduction Decade, was also a year in which natural disasters increased so dramatically."*
- *"The humanitarian community does a remarkable job in responding to disasters. But the most important task in the medium and long term is to strengthen and broaden programmes which reduce the number and cost of disasters in the first place. Prevention is not only more humane than cure; it is also much cheaper."*
- *"Prevention policy is too important to be left to governments and international agencies alone. To succeed it must also engage civil society, the private sector and the media. We know what has to be done. What is now required is the political commitment to do it."*

Fortunately, in Latin American and the Caribbean and the rest of our continent, various elements suggest that those calls have been gaining in importance in the different areas of our society. We can say today with satisfaction that the voices that were clamouring a quarter of a century ago for a more sensible, comprehensive and coherent treatment of the issue of risk disaster are no longer minority and are achieving more and more echo at the highest levels of political decision both nationally and regionally.

The way in which this discourse seems to be advancing in our region is around the consolidation of initiatives that promote the so-called approach to *integral disaster risk*

management. A markedly systematic¹⁷ discourse that mainstreams practices, both in risk prevention-mitigation and disaster preparedness-response, and is breaking into our region in a very similar way the changes of paradigm have been suggested.

In view of the convergence with respect to where our efforts should be directed in order to reduce the impact of disasters, the challenge we now face is to define how we can walk this way. Our problem today no longer seems to be defining what has to be done, but how to do it.

And these "Hows" will definitely vary depending on the different areas of action, both sectoral and spatial and inherent to each actor of development, whether these are public or private and called on to give their own answers. It is in the light of this that we must continue to promote efforts in the search for more and better practices and mechanisms that will allow more efficient forms of public and/or private participation for disaster risk reduction.

In terms of the documentary contribution that has been sponsored by the Permanent Secretariat of the Latin American and Caribbean Economic System to achieve this goal, we could say that in the first document published in November 2011 entitled: "*Guidelines for cooperation between governments and the private sector for disaster risk reduction: Approaches, achievements and challenges*" (SP/SR-CGSPRRD/DT N° 2-11), the intention was to generate an invitation to the treatment of the topic based on the collection and analysis of a series of interesting and specific examples of joint work between the public and private sectors on topics related to disaster risk reduction.

In this document, the approach has been focused on strengthening some of the theoretic and conceptual fundamentals that could make it possible in our region to improve and broaden the spectrum of public-private cooperation that demands the growing commitment to disaster risk reduction that is currently being recorded.

Once these steps have been taken, what remains to be done is to start designing and implementing specific sectoral work agendas on the topic that are aimed at promoting forms of appropriation of the discourse on disaster risk management that are much more sustainable and relevant to the specific practices of sectoral development in the different groups of actors, national and sectoral, public and private, that must necessarily be incorporated in this effort.

In light of the current circumstances, this is the path that would seem to augur more promising results in our quest to consolidate regional spaces where the existence of private actors committed to disaster risk reduction is multiplied, and this will enhance new and promising ways to deal with the risk of disasters in our countries.

¹⁷ Understood particularly from the *mechanicist* and *organicist* notions previously summarized in this document and on the basis of which the term can be used.

BIBLIOGRAPHY

- CARDONA, O., La necesidad de repensar de manera holística los conceptos de vulnerabilidad y riesgo. Internacional Work-Conference on Vulnerability in Disaster, 2001.
- CIGIR – LARED, Estudio sobre Iniciativas y tendencias en la formación de talento humano en el área de gestión del riesgo de desastre en América Latina, UNDP – Venezuela, 2011
- El Economista, 2011, <http://eleconomista.com.mx/sociedad/2011/04/29/reconocen-mexico-gestion-riesgo>
- EMDAT. Desastres en Números. International Disaster Database. Available at www.emdat.be
- International Panel for Climate Change, Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, SREX, 2012
- KUHN, Thomas Samuel. La estructura de las revoluciones científicas. Fondo de Cultura Económica, 2006.
- LAFAILLE J., C. Ferrer, M. Dugarte, Informe del Desastre de Santa Cruz de Mora 2005, FUNDAPRIS. 2005
- LAVELL A. Viviendo en Riesgo. La Red - FLACSO. Editorial Tercer Mundo. Bogotá. 1994.
- LINAYO A. Los Riesgos de la Gestión del Riesgo. Centro de Investigación en Gestión de Riesgos, CIGIR – LaRED. Mérida. 2006.
- LINAYO A., Sobre la noción de “sistemas” en los sistemas para la gestión de riesgos y desastres, en “Gestión de Riesgos: Lineamientos para la Implementación de una Política de Estado”, Caracas 2005.
- LINAYO A., De la Administración de Desastres a la Gestión de Riesgos: ¿Avance en el Conocimiento o Cambio de Paradigma?, CIGIR, 2011
- Mapa de riesgo de desastres. Global map of natural disaster risk. Available at <http://maps.maplecroft.com>
- MASKREY A. et al, Los Desastres No Son Naturales, LARED 1992.
- QUARANTELLI, E. L. Future disasters in the United States: More and worse. Preliminary Paper # 125. Disaster Research Center. University of Delaware. 1983.
- Permanent Secretariat of the Latin American and Caribbean Economic System (SELA), “Guidelines for cooperation between governments and the private sector for disaster risk reduction: Approaches, achievements and challenges.” Regional Seminar on “Cooperation between governments and the private sector for disaster risk reduction in Latin America and the Caribbean: Focus, progress and challenges,” Panama 2011 (SP/SR-CGSPRRD/DT N° 2-11). Available at

http://www.desenredando.org/public/vari0s/2011/2011_SELA_ALinayo_LineamientosCooperacionGobiernoSectorPrivadoDDR.pdf)

WISNER B., JC Gaillard and I. Kelman, eds., Routledge Handbook of Hazards and Disaster Risk Reduction, London: Routledge, 2012.