

The Impact of Disasters on Development Gains: Clarity or Controversy

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Introduction.

In 1983, Fred Cuny published his seminal work on *Disasters and Development*. Although a number of studies had been published previously on the theme of disasters and social change, Cuny provided a first systematized and comprehensive series of ideas on the ways disasters may interrupt development processes, whilst, at the same time, offering opportunities for future development. Important considerations were added to this debate during the eighties, particularly by Mary Anderson (1985; 1989). By the end of the decade the theme of disasters, environment and sustainability had also been vented in a number of works edited by Kreimer (1989), Kreimer and Zador (1989) and Kreimer and Munasinghe (1991).

During the present decade, the debate on disaster-development relations and the analysis of their practical implications for risk and disaster management finally came of age. The theme has now become an almost obligatory point of reference and reflection when discussing the topic of disasters. This is the product of various circumstances amongst which, particular importance may be attributed to: a) the IDNDR and its emphasis on risk reduction and mitigation; b) the outstanding economic losses associated with Hurricane Andrew, the Mississippi floods and the Kobe earth-quake during the first half of the decade; c) the generally accepted fact that the number and human and economic impact of disasters is rapidly increasing at a world level, with the developing countries and their poorer populations suffering an undue amount of the burden; d) the idea that such factors as global climatic change, the introduction of new untried technologies and increased social vulnerability may provide conditions for more and larger disasters in the future. Towards the end of the decade, the debate has been fuelled by the recent impacts of such phenomena as El Nino and Hurricanes George and Mitch in Latin America and the Caribbean.

One of the results if not one of the causes of the growing concern for the development impact of disasters has been an increase in the number and types of institution involved with the disaster problematic. These are no longer limited to the humanitarian preparedness and response organizations as was essentially the case towards the end of the last decade. Increasingly over the last few years, a number of the major "development" institutions have become more closely involved with the problem. This includes the World Bank, the Inter American and Asian Development Banks, the United Nations Development Programme and Germany's GTZ. Moreover, El Nino, George and Mitch had a significant impact in terms of the visible presence of a number of the more important organizations concerned with environmental problems and management.

The principle objective of this short paper is not to provide an analysis or evaluation of the impacts of disasters on development as such. This, as we hope to demonstrate, is difficult to achieve given the present way in which disaster impact data are presented and analyzed. Rather, we will concentrate on

a series of what we consider to be important partialities, misrepresentations, inaccuracies, distortions, and fallacies in the ideas and direction of the arguments put forwards as regards the relationship between disasters and development.

Given the space available it is not possible to fully develop and document our arguments. Rather, we provide a somewhat sketchy and intuitive picture that we hope provides sufficient material to generate an interesting debate. Little of what we will argue has not been argued previously in one way or another. However, it does seem necessary to reiterate certain arguments in order to attempt to achieve some sort of consensus as regards the real nature of the disaster problematic and of the particular relations that exist between disasters and development.

Six basic premises inform our comments and analysis. These are also conclusions.

Firstly, any serious analysis of the disaster-development problem must use a temporal framework that guarantees that the full "life cycle" of a disaster can be closely examined, and not just the short-term period immediately after disaster occurs.

Secondly, large-scale events should not typify and dominate the problem of disaster (Hewitt, 1983). More concern should be given to the wide range of lower level damaging events that recurrently affect different regions, localities and communities throughout the world.

Thirdly, the statistics produced to date on disaster impacts are not particularly conducive to any detailed analysis of the disaster-development problem. Other uses and attributes they may well have, but a comprehensive analysis of the disaster-development question is not amongst these.

Fourthly, concentration on the question of the impacts of disasters on development basically serves as a distraction from the fundamental question, which is the impact of development on disasters. Only by resolving this latter question will we ever get anywhere in terms of risk and disaster mitigation, and, consequently, in terms of reduced disaster impacts.

Fifthly, the basic problem is not that disasters may have important negative development consequences, particularly where their impact is large relative to the size of the affected economy. Rather, the real problem is the reduced size and/or level of development of the affected economy and society. Instead of satanizing hazards for their impacts on society, it would be probably be more correct to satanize society for its impacts on hazards!

And, lastly, the use of economic criteria and cost-benefit equations for attempting to justify risk mitigation and reduction may reap rewards for the modern sector economy, but this is not the case for the poor and traditional sectors that make up the majority of the victims of disaster. The attainment of securer living conditions for the poor and a substantial reduction in their vulnerability is more a case of ethics, equity and social justice, than economic rationale and efficiency.

Throughout this paper our arguments are particularly directed at the problem of disaster in developing world counties. Many of our arguments are illustrated using the case of Mitch in Central America as an example. However, these arguments are, we believe, generally valid.

A Critical Problem: The Need for an Adequate Temporal Base for an Analysis of the Disaster-Development Problematic.

Risk and disaster are complex social problems. Many partial disciplinary approaches to their study have been promoted with important analytical and practical results. Despite this, the complex nature of

the topic also requires integrated, holistic approaches that are capable of providing a general theory of disaster. Partial approaches often lead to partial or biased conclusions. The disaster-development discussion has suffered from this problem. Amongst the problems confronted, the use of inadequate temporal analytical frameworks is of particular importance.

Disasters, in the same way as other types of economic or social crises, have a life history. This includes the period of maturation in which the structural conditions for disaster are established, the period of onset and development of disaster conditions as such, and the subsequent responses of society during what are known as the relief, rehabilitation and reconstruction "phases". In the jargon of disaster experts these distinct moments are somewhat inaccurately portrayed as the "before", "during" and "post disaster" stages.

Although it may be convenient to use this distinction between different moments or stages for certain analytical and practical purposes, at other times it clearly leads to a distorted, partial or inaccurate depiction of reality. With reference to the disaster-development problem it is our belief that an accurate and relevant assessment of this can only be achieved using an integrated temporal framework for analysis. One that considers disaster causes, consequences and social response in the same analytical framework. This signifies that if we are to achieve an adequate balance as regards the interpretation of the impact of disaster on development, we must also consider the ways in which different models and patterns of economic growth have contributed to the very disaster conditions we are analyzing. These two "moments" can not be considered apart as if they were two different problems. Using an analogy with human growth and development, it is impossible for us to fully understand the stage of adolescence and its significance for adult growth without understanding the process of growth and development during infancy.

Adhering to the above criteria, we will begin our argument analyzing the factors that contribute to the creation of risk in society and, consequently, to the conditions that permit that disasters occur. In other words we will briefly examine the ways in which processes of social change, growth and development lead to the creation of vulnerability and risk.

Risk: A Structural Component or Forgotten Dimension of Economic Growth Models?

Disaster impact, loss of infrastructure, production and human life are, except in very exceptional cases, directly related to the levels of preexisting social vulnerability. The types, structure and levels of vulnerability that exist when the event occurs precondition the damage any particular physical event can cause (Blaikie et al, 1994; Hewitt, 1997). Vulnerability is the result of ongoing social processes. It is socially constructed. These processes are consequences or components of the different styles or models of economic growth and social change adopted by or imposed on different countries or societies. Here, it is probably fair to say that different growth models have different consequences and manifestations of risk and vulnerability. Some expression of risk and vulnerability is inherent to, or structurally determined by the types of social process that typify these different models. Although poverty and vulnerability are not in themselves synonyms, it is generally accepted that poverty explains a significant part of the vulnerability that affects the vast majority of the population of the developing countries today.

These affirmations characterize what is known as the Vulnerability Paradigm of disaster explanation. The premises are, of course, open to discussion. At the same time, few today would adhere to the idea that disaster is the unilateral result of an extreme physical event impacting on an innocent and neutral society. Although in many cases it is only lip service that is played to the idea of social vulnerability as the primary causal factor in disaster, mention of it is now almost obligatory in almost

any discussion of the topic. The fact that little has been done to fundamentally alter the nature and magnitude of vulnerability, at a time when the discussion on disaster reduction is in vogue, can probably best be explained by the fact that this would require fundamental changes in the parameters of existing economic growth models which, given the present status quo, are all but impossible to achieve. The still prevailing dominance of structural engineering and disaster preparedness measures as strategies for risk reduction reflects their inherently lower political sensitivity when compared to the problems that arise if we advocate redistribution of income, reduction of poverty levels, empowerment of communities etc. as key factors in providing a real basis for reducing risk and vulnerability.

At a political and technocratic level, one common way of denying that vulnerability is structurally determined is by projecting the idea that risk and disaster are a collateral, forgotten or unintended effect of economic growth initiatives that are, in themselves, necessary and adequate. The solution to the problem is, then, to take these effects more into account in the design of new investment projects, introducing more rigid safety criteria that guarantee risk reduction. Given that the growth model does not structurally determine the problem, it is possible to recur to marginal adjustments in order to resolve the situation in the future.

This type of argument can be well illustrated in the recent case of Mitch and its impacts in Central America. On the occasion of the November, 1999, meeting of Central American Presidents in Comalapa, El Salvador, and the publication of their declaration on the disaster, they clearly indicated that the disaster had had serious impacts on development in the region, but that the development model under way was essentially correct. It was necessary to strengthen the model whilst at the same time giving more attention to the reduction of existing vulnerability to disasters in the isthmus. The development model is thus portrayed as something that does not cause vulnerability as such. Rather, this is a forgotten condition or factor that should be taken more into account in the future and placed under control.

Although it is not difficult to understand why governments defend the models they promote and why in today's world of neoliberalism and globalization, structural adjustment and privatization, it is difficult to escape the inherent logic of the model, the real question is still whether it is really possible to significantly reduce the levels of vulnerability without fundamentally changing the parameters of the growth models as such.

This question is particularly relevant when it comes to the vulnerability that affects the masses of urban and rural poor in the developing world who have little access to the resources, power and choice mechanisms needed to radically change their life circumstances. These people and the vulnerability they suffer end up being the "necessary" and supposedly "non structural" result of someone else's adequate growth and development policy. Any effort to significantly reduce their vulnerability, whilst maintaining the parameters of existing growth models, would clearly require social compensation mechanisms that go well beyond the resource capacities and political will of even the most socially advanced and humanitarian governments. It is extremely difficult to imagine an economic growth model that continually leads to an increase in poverty being accompanied, at the same time, by a government inspired social policy that guarantees that those affected by poverty live on safe land, in safe houses and with safe livelihoods!

If vulnerability is a structural component of dominant growth models, as we believe it is, then without fundamental change we can only sit back and wait for the next disaster to occur. Disasters become the necessary and inevitable result of "development". They are built into the process, and are the price to pay for the "gains" achieved by following a model that guarantees growth and development for some and poverty and vulnerability for the majority. Here, it is of course tempting to draw analogies with the idea that economic crisis and depression (disasters?), and the devalorization of capital,

unemployment and social stress associated with them are in fact structural and necessary responses to prevailing modes of capital accumulation.

Continuing with this line of inquiry, and with the case of Mitch as an example, some searching questions can be posed as regards the overall balance in terms of the disaster-development relationship. Here, we will only develop a limited number of arguments to support our case.

In the immediate aftermath of this "disaster of the century", Honduran President, Carlos Flores, was widely reported in the press as having stated that the country's development had been thrown back between 30 and 50 years by the loss and destruction suffered during Mitch. This idea also appeared in various documents and publications prepared by international and national organizations. At the same time, it was also widely reported that near to 70% of the country's infrastructure had been destroyed or damaged. Besides the fact that these data are impossible to substantiate and clearly grossly exaggerate the situation, falling more into the realm of political fantasy than economic reality, the real question is: what and whose development was purportedly thrown back so far in time? What development gains were lost? Are we referring to that associated with the modern and advanced commercial agricultural, industrial and service economy or that associated with the 80% of the country's population that lives below the poverty line?

The answer is surely the former. Few, I imagine, would be cynical enough to suggest that the housing, livelihoods, living conditions and production facilities of the poor and destitute that made up a good part of the socially significant losses suffered, constituted "development gains", even if they are products of the "development models" implemented in the country over the last 50 years or more. The suffering that this loss signifies for the affected families is a completely different matter. Loss at the margin always has tragic human consequences. Rather than losses in development gains, it is probably more correct to refer here to losses in "underdevelopment gains". Moreover, if we had access to adequate information we would probably find that between 30 and 50 years ago both the percentage of poor population and their levels of vulnerability to disasters were lower than that existing today!

Clearly what distinguished this disaster from other large-scale events in the Central American region over the last 30 years was the magnitude of the losses and disruption suffered by the dynamic, advanced sectors of the economy, and their dominant spatial expression, the so called Central American Commercial Corridor. This was complicated by the fact that Mitch wandered unpredictably through various countries causing what has been called a "regional disaster" and contributing to a severe short-term interruption of intraregional trade and commerce. If the disaster had thrown back development gains by up to 50 years it would be in these advanced sectors and not amongst the poor. The disaster made immediately apparent that the future productivity and competitiveness of the isthmus were severely compromised by the existing levels of vulnerability. This is what dominates the concerns of government and the international financial community when it comes to plans for reconstruction. Allusions to the construction of a new and more just society in the region post Mitch probably constitute the relevant dose of political wishful thinking and rhetoric needed on such occasions.

The fact that the Central American Institute for Business Administration-INCAE-, the principle neo liberal think tank on economic growth in the region, along with the Harvard Institute for International Development, were given a dominant role by the governments in putting together a reconstruction plan for the region to be presented in Stockholm in the decisive May meeting of the post Mitch Consultative Committee on Reconstruction, is a vivid illustration that when we refer to disasters and development loss in the isthmus, the principle focus is on the modern economy. Of course that is the

way it should be as we are constantly reminded that only with economic growth, competitiveness and the development of capital can we hope to reduce poverty in the future. The fact that this argument has been used persistently in the past, whilst poverty continues to increase in most underdeveloped countries can not of course escape our attention. But in the end, what better excuse than a disaster or succession of disasters that can be used as an additional spurious explanation for this?

Central America's economic growth over the last 50 years has been more or less constant. At times it has been more rapid than at others. But, in the end, growth has taken place. A good part of this can be attributed to the development of large-scale commercial agriculture, the export of traditional agricultural products, and, increasingly, tourism. This process has led to a concentration of capital and income that has favored the few and left the vast majority in conditions of scarcity or outright poverty. Recent economic policies have only accentuated historical trends. One clear result of the growth models implemented has been the continuous increase in disaster vulnerability, not only amongst the poor but also in modern agriculture, in public sector infrastructures and others. Much as we have said previously finally revealed this vulnerability in its different dimensions.

The models have in part been based on the over exploitation of the environment, the destruction of watersheds, depletion of soil resources and the wholesale modification of natural ecosystems. This has had important consequences as regards the destabilization of the environment and the creation of new "socio-natural" or "pseudonatural" hazards such as erosion, deforestation, flooding, drought and landslides. This has occurred both in the rural areas and the urban centres. The spread of commercial agriculture and the marginalization of the traditional rural population have led to the constant occupation of marginal and unsafe land and to rural-urban migration. Urban migrants have been forced to occupy hazard prone areas of the cities, using inappropriate building techniques and materials.

In sum, these are but some of the repercussions of the growth model implemented and their "natural" consequences in terms of disaster vulnerability. These conditions were concomitant with the growth models implemented. They were structurally determined and part of the basis of these models and the growth they permitted. Environmental degradation, rapid urbanization, cheap labour and poverty are both consequences and needs of the growth models and their socially concentrated development gains.

If these arguments are in fact correct, then they have important consequences as regards the way we see the problem of disaster impacts on development gains.

If growth has been achieved during the last fifty years by necessarily increasing disaster vulnerability and if the creation of vulnerability was a factor in explaining the rates of growth, then it is only logical to argue that when we lament the losses occurring during disasters like Mitch and the negative impacts they may have on future short or medium term growth, we should also realize that this is just the price to be paid for the growth achieved previously. You can not have your cake and eat it goes a wellknown English refrain! An adequate balance of disaster's impact on growth, not to say development, would require that we subtract current disaster related loss from a part of the gains achieved whilst constructing the very vulnerability that helps explain the disaster we suffered. Here, the problem is essentially the same as that relating to the question of environmental degradation, economic growth and the problems of sustainability. In the final equation, gains from growth are privatized historically, whilst vulnerability and disaster loss are socialized.

This same type of analysis can also be applied to the problem of the debt burden in developing countries and its relations to the disaster problematic. Here it is often pointed out that disasters lead to an increase in the affected country's external debt, thus having a negative impact on future growth and

development. But, if we go back in time and take into account that existing debt can be explained in good part by loans conceded by the international financing community for promoting “development” projects, it is not difficult to assume that a significant part of this debt was probably used in constructing disaster vulnerability! How much of the infrastructure destroyed during Mitch was financed by the debt? (this would probably make a good thesis topic for some Masters or Doctorate student). What is particularly galling here is the possibility that at the same time that debt was built up constructing vulnerability, the affected countries now have to get further into debt in order to remedy the problem of disaster loss associated with that very same vulnerability. Worse still is the possibility that new investment just reconstructs new vulnerability, thus turning the whole thing into a vicious disaster circle.

A Conceptual Interlude: Development and Vulnerability

Prior to continuing with the major thrust of our discussion and arguments regarding development-disaster relationships, it is important to deviate from our course a little in order to briefly examine a major conceptual problem that tends to generate confusion in the literature on the topic. This relates to the problem of development and vulnerability.

Throughout the previous section of this document we have deliberately made reference to the relations between economic growth models and vulnerability and not, as is common, between development models and vulnerability. Here it should be clear from the start that although economic growth may be a necessary prerequisite for development, it is not a synonym for this.

In the literature on disasters and development it is common to find statements to the effect that development can either increase or decrease vulnerability and disaster risk according to the consideration given to risk reduction in the formulation and implementation of development projects (see Stephenson, 1992, for example). On the other hand, Anderson and Woodrow(1989) in their excellent study of reconstruction strategies in times of disaster offer an elegant and succinct definition of development stating that this involves a process whereby vulnerabilities are **reduced** and capacities increased.

The contradiction between the two types of statement summarized above is obvious. If development involves the reduction of vulnerability it obviously can not at the same time lead to an increase in this! If this were not the case then it would be equally valid to say that development can both lead to an increase and decrease in mortality rates, educational levels, and living and health conditions. This is clearly not so. Development can never be defined in terms of the propagation of negative conditions for human welfare. This does not of course deny the fact that economic growth and change does lead to the development of those who gain access to it's rewards whilst others, many times the vast majority, are excluded from these benefits, living in conditions of deprivation and poverty.

A good part of the conceptual problem relating to vulnerability and development derives, we believe, from two common errors.

Firstly, economic growth and development are many times considered to be synonyms. Given this it is common in the disaster field to refer to all investment projects as if they were development projects without giving much consideration to their development impacts defined, for example, in terms of the United Nation's Human Development Index. Thus, it is not difficult to state that development may or may not lead to vulnerability. It would of course be far more accurate to state that economic growth and investment projects may or may not increase vulnerability, and leave the category of "development project" for some of those that do not! This does not resolve the problem of projects

that promote certain development parameters such as improved education and health for the underprivileged, whilst at the same time constructing vulnerable schools and hospitals for attending these needs. But it does move us along somewhat in avoiding the obvious contradiction involved in the idea that development can both create and reduce vulnerability. It really is very difficult to conceive of development as something that significantly increases your chances of death, injury or economic loss.

Secondly, vulnerability is obviously conceived by many as being an exogenous and not an endogenous component of development. This is clearly illustrated in the aforementioned affirmations that development can increase or decrease vulnerability. In other words vulnerability is a dependant variable that can be influenced negatively or positively by development. Vulnerability is not thus considered to be a part of the development or underdevelopment process as such. From our viewpoint this is an unsustainable argument. The reduction or non-creation of disaster and other types of human vulnerability should be considered an integral component in the definition of development. As such it should be included amongst the important parameters used in such indices as the UN Human Development Index.

The Impacts of Disasters on Development Gains and on Future Development Options.

The arguments put forward in the first section of this document suggest that under present conditions when disaster occurs it is all but inevitable. Only with improved early warning and evacuation procedures can damage be in any way reduced, to the extent human life, livestock and certain inventories and goods can be saved. This helps to highlight the importance that preparedness activities have given the relatively primitive status of risk reduction and mitigation at present, particularly in the developing countries.

In many ways the only thing "natural" about disasters is that they occur! From our perspective, when they do occur they are faithful indicators of underdevelopment. This is particularly true in the case of developing countries where disaster is normally merely a more dramatic and violent continuation of the disaster of underdevelopment permanently suffered by the majority. Disaster constitutes a continuity of daily life and not an abrupt break with it. Even in developed countries, disaster reveals the greater vulnerability of the poor and disadvantaged and is, also, an indicator of relative underdevelopment. Disasters are, moreover, vivid indicators of unsustainability in that their occurrence is a reflection of society's lack of adaptation to and rational use of its environment. The rapid increase of "socio-natural" hazards related to human intervention in the environment is a further corroboration of this imbalance.

Having now established what we believe to be the essence of the disaster problem let us now examine some of the arguments that have been made as regards the impact these "inevitable" disasters have on development and growth once they occur, and some of the problems and challenges associated with disaster impact and loss statistics.

Direct and Indirect Disaster Losses and their Impact on Growth and Development.

Statistics produced after hazard impact tend to concentrate on financial losses, particularly in the modern or "visible" economy. Losses in the informal or "invisible economy" are normally not given the same attention due to difficulties of access to accurate and comprehensive information. Calculations are then often made as regards the probable, projected short term behaviour of a series of macroeconomic indicators—changes in GNP, employment levels, external debt, trade balances etc. These types of statistics have consistently been provided by the Economic Commission for Latin

America through a series of impact studies carried out in disaster situations in Latin America and the Caribbean over the last 25 years (see Caballeros and Zapata, 1995).

It is on the basis of such statistics that calculations of disaster loss are made, and the way in which the disaster expert and the layman become aware that disasters such as Kobe involved losses of upto 150 billion dollars, Andrew, 29 billions, Mitch in Central America, 7 billions and George in the Caribbean just over 10 billions. Information on insured losses are normally available from such institutions as the Munich Reinsurance Group. By continuously summing up these disaster losses, conclusions have been reached as regards the ever-increasing negative impact of disasters on growth and development. This is seen to be particularly problematical in developing countries. Although the levels of absolute loss in these countries do not compare with those occurring during large disasters in the developed countries, when taken as a percentage of such indicators as gross national product and total accumulated investment in infrastructure, they take on a new and more onerous face. Here it has been suggested that accumulated losses in developing countries, calculated as a percentage of the gross national product, are over twenty times greater than those occurring in the developed nations.

Beyond the rather obvious and intuitive conclusion that losses of the magnitude recorded must have some impact on the short term performance of macroeconomic and development indicators, little is really known as to their real performance. The disaster area has not been known for the glut of economists and development specialists it has attracted to its fold to date. Very few of the projections provided by institutions like ECLA have been submitted to an a posteriori analysis and evaluation in order to compare real with projected performance. The projections turn out to be more an act of faith than a proven empirical reality.

Among the few serious and well documented studies on the post disaster performance of macroeconomic indicators, Albala Bertrand's 1994 study of *The Political Economy of Large Natural Disasters* is without doubt the most ambitious and methodologically best substantiated. The conclusions he derives from his analysis of the performance of macroeconomic indicators following the impact of 29 large disasters in 26 different countries between 1960 and 1979 are completely contrary to established opinion. According to the author, most macroeconomic indicators in fact improved during the two years following impact and then returned to their normal levels. Moreover, using arguments on economic linkage and substitution effects in the national economy, he concluded that contrary to many ideas on the subject, indirect disaster losses are probably insignificant for the economy as a whole. This supports the many times forgotten observation that there are always losers and winners in disasters. The results of his extensive analysis led him to the conclusion that disasters were not a real problem for development, although development was a problem for disasters. The type of conclusion reached by the author is in fact supported by the results of other longitudinal studies undertaken in other national contexts.

Beyond the fact that available statistics and conclusions may be open to serious questioning, a further problem exists when dealing with the disaster loss issue and short term development impacts. This relates to the fact that information is only available in any detailed way for the intermittent large-scale disasters that occur throughout the world.

A more complex analysis of risk in society and of the damaging events that occur when this risk is actualized, clearly shows that the problem of loss goes way beyond that associated with these events. For every large, well registered, measured and studied magnum event, there are hundreds if not thousands of smaller scale occurrences that involve some degree of loss, small as it may be. These events are rarely registered in the disaster statistics, little is known in terms of the economic and social losses associated with them, and the majority rarely attract much outside attention. They are predominantly local events that are dealt with by local government authorities and the population itself

with little or no external support and aid. However, these events do tend to be highly recurrent and to manifest themselves in a wide-range of different geographical locations. And, it is suggested, the accumulative losses associated with these "non disasters" may be as significant as that attributed to large-scale disasters. Moreover, they are constantly increasing in numbers and many may graduate with time into future events of larger magnitude due to the constant increase in the levels of vulnerability in the affected regions, zones and localities. An inventory compiled by The Network for the Social Study of Disaster Prevention in Latin America-- La Red- in a sample of eight small and large Latin American countries has registered a total of close to 20000 small and medium scale damaging events during the period 1988-98. Only between ten and fifteen percent of these are accounted for by the type of large-scale event for which disaster statistics are normally available.

Finally, the problems associated with existing disaster statistics are not only limited to the above mentioned factors. If there are doubts and questions as regards the real performance of macroeconomic indicators in the aftermath of disaster and as to the real global losses associated with damaging events, more searching questions may be posed as regards their impact on development as such.

Here we have to accept from the beginning that any comprehensive definition of development and development indicators can not be reduced to the global macroeconomic indicators provided in current disaster statistics. In order to arrive at firm conclusions on the short and medium term impacts of disasters on development we would need to know, for example, how these have affected international, interregional and interpersonal income distribution, education and health and access to these services, processes of democratisation and participation in decision making, economic production and its distribution amongst different groups, land ownership and gender, race and ethnic relations, amongst others. Few post disaster studies of this type exist and no established methodology has been developed for measuring such effects.

The problems that arise with the use of existing statistics and methodologies in understanding development impacts, and in providing information relevant to the promotion and implementation of future risk reduction and reconstruction activities, is worthy of consideration prior to concluding this section.

Existing statistics, produced by regional or national organizations or by institutions such as the Munich Insurance Group, are basically useful for macroeconomic analysis. They permit an approximation to the economic cost of disaster losses and the elaboration of projections on the possible behaviour of macroeconomic variables in the short to medium terms. They can be used to substantiate requests by governments or other affected parties for donations, loans and credits for reconstruction or even for consideration to be given to the condonation of parts or all of the existing external debt obligations. They are also used as an input into the argument for increased attention to be given to prevention and mitigation, usually using some sort of cost-benefit argument.

On the other hand, due to the aggregated statistical nature of the information generally available, they do not allow us to provide a real explicatory post disaster audit or postmortem which would contribute to an understanding of disaster loss and provide relevant information for guiding any future reconstruction strategy. That is to say, they do not link vulnerability to loss thus permitting an understanding of disaster dynamics and the "social space of damage" (Hewitt, 1997). Moreover, as we commented earlier they do not allow an evaluation of disasters real impacts on development.

At a time when academics and practitioners are searching for decisive arguments in favour of risk reduction, and in favour of the integration of the disaster problem with main stream development and

environmental concerns and practice, more incisive and detailed audits or postmortems are required. Whilst detailing loss, these must also provide an explanation of this in terms of preexisting types of social vulnerability. They must also attempt to demonstrate the social and developmental significance of the different types or categories of loss in order to provide guidelines for the prioritization of reconstruction activities.

Finally, post disaster audits should provide a balanced view of disaster, analyzing relevant components of the "social space of non-damage". Disaster statistics are fascinated with the quantification and study of loss. However, it should be realized that valuable information and arguments for risk reduction can be gleaned from an analysis of zones or communities that showed resilience to the disaster hazard. Following Mitch no one interested was short of information on the level of losses and the areas affected, but few will be cognizant of the social "success stories" where communities resisted the event to such a degree that they did not suffer disaster.

At another scale of analysis and seen from a different social perspective, a large disaster can be seen as an almost infinite number of small or personal disasters affecting a large number of communities, families and individuals to different levels and degrees. The damage or loss suffered in different areas or zones is differentiated according to different types and levels of vulnerability and the intensity of the physical event itself. And, in the midst of this multiple series of small and differentiated disasters we will almost inevitably find numerous examples of more resilient communities that, when faced with the same physical event, suffered little, less or no loss. These cases need to be analysed. They are the "success stories" of the Decade.

Taking into account Post Impact Reconstruction Activities.

As Albala Bertrand has so convincingly pointed out, the restriction of the notion of disaster to the destruction and disarticulation wrought by the event itself, and its immediate consequences, belies the very idea of disaster as a phenomenon. Any relevant analysis must also consider the responses and reactions of society to the events and the destruction. This means that any integral and valid conclusions as regards development effects can only be drawn if the analysis comprehensively studies immediate disaster impact and the subsequent reactions of society during the response and reconstruction "phases".

Here, prior to examining the period of reconstruction, it is important to note how the commonly used notion of disaster stages which refers to the periods "before", "during" and "after" the disaster in order to distinguish between different types of management concerns, is conceptually and empirically incorrect and leads to distortions in the ways disasters are seen and defined. What this denomination suggests is that disaster is an event or "product" that is restricted in time to the moment of impact, and to the short term "emergency" period that follows during which relief activities are pursued. Rehabilitation and reconstruction are considered to take place "after" the disaster. This is clearly not the case. A disaster can not be defined by such a short and rigid time period. The disaster may carry on for months or years after impact, and reconstruction obviously takes place whilst it still exists. If this is not the case, then why do we need to reconstruct? Or, alternatively, why is reconstruction considered to be a component of disaster management?

The idea that disaster begins with hazard impact and ends once the relief activities are terminated derives from the time when the principle concern with disasters was the humanitarian response to them. Or, when the error was made, as it still is today with alarming frequency, of suggesting that the physical triggering mechanism (earthquake, hurricane etc) was a disaster. With the current dominant concern for risk reduction and the consideration of the relations of disasters with development and

sustainability it is clearly inappropriate to restrict the idea of disaster to such a short time period. Disaster must be seen as a process and, as we have consistently reiterated in this document, an adequate understanding of this process requires a long term, longitudinal framework for analysis. This signifies an analysis of pre disaster conditions and post impact social responses.

If we do in fact include the period of reconstruction in our analysis of disaster impacts on development, then what happens as regards the conclusions we can draw in terms of the " impact of disasters on development gains"? Various things.

Firstly, if we integrate the results of societies responses and reconstruction activities post disaster then it is not at all clear that disasters are problems for development. The results of numerous studies carried out in regions affected by disaster show that in many cases these show marked development gains in the medium and long terms. This shouldn't of course be surprising if we take into account the argument that disasters can in fact be opportunities for development. New investment, improved quality of housing, infrastructure and production, and overall gains in risk reduction can be expected to occur where the reconstruction process is adequately conceived. Moreover, it has also been documented how in various areas affected by disaster new investment has greatly exceeded calculated disaster losses and reconstruction needs as stipulated in post disaster assessments.

Clearly disasters are focussing events and responses may, for many social, economic, political or ethical reasons, lead to significant positive changes in the local or regional economy and society. In a somewhat unintentionally cynical way of looking at the problem, disasters could be seen as abrupt writings off of redundant, depreciated capital. And, in the same way as economic crises, which signify the massive loss of value of many investments, opportunities for change and renovation. Of course, the success of reconstruction schemes, and the gains achieved in development levels, are in general conditioned by the existing political, institutional and organizational structures such that there is no guarantee that reconstruction will always lead to important development gains.

Even though we accept that the reconstruction process may bring significant development benefits, it could also be argued that the investment needed to promote reconstruction in the affected regions represents a diversion of resources from other previously planned development projects. This investment along with that expended during the humanitarian response period are seen to have negative effects on development.(Stephensen, 1991; Anderson,1985).

This argument is also open to question. It all depends on what alternative uses were planned for the investment and it's development value, as compared to the use given to it in reconstruction, and it's development value! This may belie the argument, but in the end it has to be accepted that the argument that economic resources diverted to substitute destroyed resources automatically has negative consequences on development is not necessarily true. Neither is it necessarily false! What would happen, for example, if the planned use for resources involved the promotion of projects that in fact create new disaster vulnerability, whilst the final reconstruction use given to them diminished vulnerability and promoted better income distribution and poverty alleviation? The problem is that in the end we again have insufficient evidence, gleaned through research, to come to real substantiated and generally valid conclusions as regards the range of questions that can be posed,

The argument that disasters may in fact lead to greater development, at least in the affected regions, is, of course, not an argument for letting them happen. It is just a statement on the nature of the process. Crisis provides opportunity. Moreover, it is not difficult to understand why this development may take place. Disasters reveal distinct aspects of underdevelopment, expressed through the presence of vulnerability. Given this it is not surprising that what happens after disaster may, many times, be better than what existed before. The contradiction is, of course, that many regions and

population groups have to await a disaster in order to have any opportunity to gain a minimal access to development resources.

Concluding Reflections.

Throughout this brief document we have attempted to provide a critical analysis of a limited range of arguments relating to the disaster-development problematic and the problem of the impact of disasters on development gains.

A major conclusion of this analysis is that as we change the temporal perspective used in an analysis of the problem so do the conclusions we arrive at. Relevant conclusions can only be gained however from an integral analysis of the problem of disaster, its causes, consequences and concomitant social responses. Analysis which concentrates on the immediate and short term impacts of disasters on development probably corroborate the idea that disasters are a problem. But, if we widen the temporal scope to include the pre disaster period and the processes of social response involved in the reconstruction stages, then these conclusions are seen to be open to serious questioning.

In the final equation, it is probably true to conclude that the debate on the impacts of disaster on development creates a false problem, which, if ideologically and politically manipulated can also serve to distract attention from the fundamental issues at hand. This is particularly true if disasters are used as a further excuse or explanation for underdevelopment and for the difficulties of breaking out of this in the majority of the countries in the world.

Socially significant disasters do not put a major break on development. Rather, they are the logical response to underdevelopment. Underdevelopment, environmental insustainability, and poverty are the major contributing factors to the occurrence of disasters. Disasters do not in general throw the poor into a state of underdevelopment. They are already there prior to the disaster. If the disaster projects them from a state of poverty into a state of absolute destitution this is not a problem of the disaster as such. It is a problem of where they were prior to the disaster. When you are on the edge, at the limit, with the water up to your eyes, then any perturbing agent will throw you over, submerge you. This is clearly not the case for those that control resources, power and options for choosing their living conditions and life circumstances. These may well be affected, but are rarely economically or physically destroyed. Disaster rarely pushes them over the edge. Savings, insurance, social networks and other mechanisms give them resilience and the ability to cope and recover.

It is dramatically poignant to think that when we improve early warning and evacuation procedures and save lives during disaster, a great majority of those saved have to return to the disaster of every day life, surviving with even less resources and options than before. The vicious cycle of disaster can be found deeply embedded in the vicious cycle of underdevelopment and poverty. In disaster circumstances we are imbued with the sanctity of human life, and saving this becomes an ethical and moral responsibility. Whilst maintaining and supporting this basic principle we should also realize that a significant part of the solution to the problem resides, rather, in sanctifying human dignity and welfare.

The fact that a disaster is large or small is not a matter of the absolute levels of economic loss involved. Rather, it relates to the size and levels of development of the affected society. It is not the size and power of the disaster agent that allows us to conceive of disasters as small or large. It is the size of the affected economy and its levels of development that finally determine magnitude and the

impacts on development. The problem is society not the hazard. This is why Mitch is seen to be such a large disaster despite the fact that losses totaled 7 billion dollars as compared to the 150 billions suffered with Kobe. For Nicaragua the 2 billion or so losses were equivalent to 70% of the annual gross national product. Kobe was equivalent to under 1% of Japanese GNP. This is why disaster losses in poor countries will always be seen as a problem. But, this loss is significant precisely because the country is poor and underdeveloped and not because the disaster was large or small, or the hazard was particularly large or intense. When you have a gross national product of only a little over 3 billion dollars in a country with per capita incomes of under 500 dollars and a population of around 5 millions, as is the case of Nicaragua, almost any medium level tropical storm or earthquake is likely to wrack havoc.

With reference to this last point it is also worthwhile reflecting on the conditions under which a disaster manages to capture public and political attention and is socially and politically constructed to be a major development problem. Mitch in Central America and George, which affected several Caribbean islands and Florida some three weeks previously are illustrative of this in comparative terms.

In the case of Mitch calculated losses in Central America summed to 7 billions with near to twenty thousand reported deaths and missing persons (the legal and euphemistic way of referring to the dead). George, according to Munich Insurance Group, led to ten billion dollars of losses, of which 3 billions were insured (mainly in Florida and Puerto Rico), and to over 4000 deaths and missing persons. On the basis of losses and the size of the affected economies one would presume that George was the larger disaster. However, far more attention has been given to Mitch and, it would seem, far more resources will be dedicated to reconstruction activities in Central America than in the Caribbean . What helps to explain this apparent anomaly?

A first factor is the death levels associated with the two events. Disasters are automatically bigger if there are more deaths! Morbidity is important. A second factor relates to the more successful political "manipulation" of Mitch. This was projected as a "regional disaster" affecting four of the poorest countries in Latin America within the framework of a single integrated region with a common destiny. The Presidents of Central America pulled together establishing a common front and common declaration on the disaster. None of this occurred in the Caribbean where, despite the fact that various island states were severely affected, these did not establish a common front based on a purported common history and heritage. Finally, Central America has been in the international eye for decades due to the diverse contexts of civil war and poverty existing. Many have been the constant recipients of international donor aid over the last decades.

In sum, without denying that the disaster was significant, it was in important measure socially and politically constructed. Declarations to the effect that Honduras and Nicaragua were thrown back 30 or 50 years in development terms with losses of up to 70 % of their infrastructure also probably helped reap rewards on the international scene. But, in none of these countries will development be found to have been severely affected, only underdevelopment and poverty revealed, and vulnerability substantiated. The dynamic private sectors will absorb the losses, cover them with insurance payments or accumulated reserves and some will even gain important rewards from the industry of reconstruction. They will probably learn from the events and introduce risk reducing techniques and measures that guarantee a higher level of protection from the environment in the future. They are the sectors that can take advantage of modern risk reduction measures whether it be for existing infrastructure and production, or for future new investment projects.

On the other hand, the poor may become even poorer, more immersed in the underdevelopment that characterized them prior to the events, guaranteeing that the next disaster may be even more serious for them. Their options for reducing risk may be limited to the scarce options that the process of

reconstruction offers some of them. If their risk were introduced into a cost-benefit equation hardly any would come out on the right side. They will be obliged to continue living in dangerous conditions maybe becoming the object of interest of some prevention project promoted by international, national or local organizations. But, faced with the magnitude of the problem these projects, the “success stories” of the Decade, are merely palliatives that basically leave the problem untouched. And yet, they are all we have given that the basic problem of working towards the reduction of vulnerability through the reduction of poverty is inaccessible to disaster experts and practitioners.

Finally, prior to concluding our series of random and somewhat disorganized arguments, it is interesting to note how in the Programme for the IDNDR Forum where this paper was presented, a day was dedicated to what were denominated " Development and Environmental Concerns". Here, we would insist that this is not a "concern" among a series of concerns. Rather, it is the essence of the problem, it is the problem. Technology, early warning systems, public education schemes, the creation of a “prevention culture”, and the many other specialist topics regularly discussed in Disaster forum and meetings only become effective and relevant if considered within the bounds and limitations of societal and human development. The sooner we get to grips with this fact the sooner we will realize that without real development we will never be rid of the disaster problem, nor will we reduce it substantially for the poor, who are it's principle vicims.. Disaster losses will rise and we will be faced with more and larger disasters in the future. Domsday predictions of the destruction of the whole globe may well be preceded by the continuous and progressive destruction of parts of it!

BIBLIOGRAPHY

Albala Bertrand, J. M. (1994). The Political Economy of Large Natural Disasters: With Special Reference to Developing Countries. Clarendon Press. Oxford.

Anderson, M. (1985). " A reconceptualization of the linkages between disasters and development". Disasters: The International Journal of Disaster Studies and Practice. (Harvard Supplement).

Anderson, M. and P. Woodrow. (1989). Rising from the Ashes: Development Strategies at Times of Disaster. Westview Press. Boulder, Colorado.

Blaikie, P. et. al. (1994). At Risk. Natural Hazards, People's Vulnerability and Disasters. Routledge. London.

Caballeros, R. and R. Zapata. (1995). The Impacts of Disasters on Developing Economies: Implications for the International Development and Disaster Community. The World Bank.

Cuny, F. (1983). Disasters and Development. Oxford University Press. Oxford.

Hewitt, K. (1983) "The idea of calamity in a technocratic age". In Hewitt, K. (ed). Interpretations of Calamity from the Viewpoint of Human Ecology. Allen and Unwin. London.

Hewitt, K. (1997). Regions of Risk. A Geographical Introduction to Disasters. Longmans. Harlow, Essex.

Kreimer, A.. (1989) Reconstruction after Earthquakes: Sustainability and Development. The World Bank. Environmental Department, Policy and Research Division.

Kreimer,A and M Zador. (eds.) (1989). Colloquium on Disasters, Sustainability and Development: A Look at the 90s. Environmental Document No. 23. The World Bank, Washington.

Kreimer, A. and M. Munasinghe (eds.) (1991). Managing Natural Disasters and the Environment. The World Bank, Washington, D.C.

Stephenson, R. S. (1991). Disasters and Development. Disaster Management Training Programme. UNDP-UNDRO. Geneva.