# PROPOSAL FOR EDUCATIONAL PROGRAMS ON DISASTERS FOR DEVELOPING COUNTRIES: SUGGESTION FOR COSTA RICA

* Eliecer Duarte G.

## ABSTRACT

This present work aims at developing specific lines to suggest an integrated educational program about natural reduction for the Latin American socio-economic and cultural reality. Despite scattered educational efforts in the region, no experience on comprehensive attempts, has been recorded. It brings some of the latest theoretical findings in the area of sociology of disasters plus a geographical view of the relationship between society and environment in developing countries,to instruct citizens properly, through the structures involved in planning, assessing, responding and disseminating knowledge on disasters. Tied to the occupation of the space and the socio-economic effects of disasters, this educational effort should start by instructing the very elements responsible of civil protection, creation and transmission of accurate information.

Responsible and affected people have to be reached equally using the new dimensions of this new approach, collective participation and solutions rooted in joint decision making processes, must be of central concern.

It is from a sociological perspective, linked to the physical aspects of these phenomena that, theoretically and practically this project can be called comprehensive.

Appropriate risk awareness not only will reduce hazards but will contribute with vulnerability identification creating conditions for a sustained development without noxious assumptions or myths about disasters, unfortunately widespread in the area, including Costa Rica.

Education, formal and informal, seen as a tool can generate information exchange between all parts involved in disasters focusing on protective action and good levels of preparedness.

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* Graduate Studies. Disaster Research Center, University of Delaware U.S.A.

## RESEARCH TOPIC

The central idea of this research proposal is to provide with some hints about more effective massive educational programs on disasters for the Latin American countries, specifically the case of Costa Rica. Such ideas will be set forth with a perspective from the theoretical body of environmental sociology, which have gained great importance in the field of disasters. The main purpose of such program is to reduce the negative impact of disasters in human life, property, group routine and ecological balance.

Information on this topic is very limited in Latin American societies, even when, few of them actually count with a massive program of knowledge dissemination about disasters, are often based on partial or faulty assumptions that tend to provoke generalized confusion, intra and inter-organizationally.

This proposed perspective will serve as a tool to orient scholars, emergency managers, educators and politicians in the difficult task of providing the entire population with appropriate knowledge to respond effectively in cases of hazard threats and events. For those who already have a plan-guide it will help them to compare their assumptions with the latest findings in the area of sociology of disasters including collective behavior and the socio-psychological component of their specific disasters.

At a more concrete level of application this project can be put into practice at an organizational or institutional micro-level with only few specific modifications that would tend to tailor local differences in distinct settings. It can provide with a more developed approach to the already formed educational and

organizational structures responsible of reducing hazards. Not only, this strategy, will promote knowledge dissemination but will educated the general user in their decision making process.

People's perception and behavior are elements tightly associated to fears, folk and religious beliefs, popular knowledge and rumor which influence the way individuals respond to natural hazard threats and events; therefore, a section will deal specifically with them.

It proposes central lines for those governmental and private agencies that manage and deal with reducing disasters and that are concerned about the creation of a preventive mentality to their own citizens. Another application this program attempts to achieve is to set up, based on more appropriate assumptions, elements that permit the evaluation and control of national strategies as well as applied projects, current, and future ones. Reduction of risks to human populations through effective practice of advances in research and technology is also contemplated.

Based on socio-economic and political reasons, demographic and geographical differences increase the risk of sanitary hazards bringing negative effects on occupations, land ownership and distribution, as well as reduction of assets per household, creating at the end greater hardships for the inhabitants of area.

Lastly, some of the thoughts here generated, will hopefully reach the area of mass media handlers in order to sustain the ideal of proper knowledge diffusion in preventing and informing on this topic.

## INTRODUCTION TO THE PROBLEM

It is under the sponsorship of the United Nations resolution on the International Decade for Natural Hazard Reduction, that massive educational efforts acquire perspective at a global level. Sustainable development for so-called third world countries suggest clear policies to avoid the misuse of natural and human resources and the abuse of the surrounding environment.

Education as a holistic strategy appears to be the proper tool to provide adequate background in the four cited areas of disasters; Mitigation, preparedness, response and recovery. It also should be viewed as the element capable of putting researchers, planners, policy makers, media people, educators and emergency managers, to work toward common goals. Put within a macro frame of national and regional development, adequate disaster education can serve to teach, without the phantom of mythological interpretations, ways in which to be prepared and respond satisfactorily under disastrous situations.

The principle of international concerted cooperation to reduce the negative effects of threats and events call to use the latest technology in communications, media and the public to act in an effective and prompt manner in order to change the traditional scheme of pre and post disaster intervention (see role played by international organisms). Despite efforts there is still need for integrated strategies about natural and artificial disaster management into sustainable developmental planning and environmental protection.

Methodologically the paper is conceived as a "Theoretical

investigation" which means a library search for any type of documents related to the topic under scope. Selection, reading, processing, analysis and proposition of new ideas and schemes is part of the task as well. Since the matter of interest appear quite unorganized in the whole panorama it will be a firm purpose of this essay to remain along specific lines of work connected to the main goal even though related topics will have to be brought up in order to understand the complexity of a warning issue and its consequences in the social and economical environment.

Perhaps one of the most interesting situations about this topic is the diversity of approaches and ways that exist and have been put into practice under different conditions, handling distinct variables and obtaining unexpected outcomes. In this respect this approach will take into account some of these diverse milieus, mentioning basically natural disasters typical of the zone; earthquakes, vulcanism and floods which permit with certain margin of time issue warnings and observe the people's response. Even when the management in most of the past experiences have shown that there have been a wide range of faulty assumptions on the side of the official and communicators, they should serve as positive lessons in order to discern how communities in fact respond to educational programs and warnings, what elements should be put more attention and how officials should handle real situations with real theoretical and practical background in the matter.

Three major dimensions; a) political and economic development, b) socio-cultural behavior, and c) applied technology are, with this project insinuated. Higher linkages of sociological theory on

disasters and hazards to other broad topics in sociological structures and processes are proposed in order to put into perspective themes like landownership, power, political control, wealth distribution and role of organizations and communities.

It is obvious the effect of the political component when preventing and mitigating disasters. Mobilization of capital, land use control, capacity of local governments to negotiate their own legislation and proposition and/or implementation of effective programs are all covered under the shadow of politics.

Many other research pieces show the relationship of impoverishment and social differentiation in areas hit by disasters. This process take us to question Hewitt's position on the existence of a dilemma about the two opposed currents; all classes affected or only those in historical disadvantage. It is clear based on many experiences that disasters hit selectively (mainly technological ones) the less gifted classes due to the absence of insurance, no access to compensation, inappropriate spatial location and in general the most affected social groups e.g. elderly, women, children and disable.

In this developing region where the variety and frequency of disasters exceeds budgetary and social action capacity, is where resources have to be maximized utilizing formal and informal channels of education. Since political economics influences these frequency and severity generating different impacts of disastrous events, an inseparable political component will have to be in the picture. Special attention must be given to the creation of a preventive, precautionary, mitigative and protective mentality,

without the formation of new organizational structures but generating modifications in already existent plans and programs. A global educational program must be understood and adapted to persons, organizations and to systemic characteristics within which the project is proposed. It should permit modifications along the interactive process and produce tangible products that can be later on evaluated.

A darker view has been given about more and worse disasters--in quantity and quality--that are still ahead in these developing societies. Such opinion founds support when several other scholars in the area have related the specific effects of metropolitan agglomerations and industries engulfed in their boundaries. Growing urbanization, and vulnerable location of misery loops combined, provoke more serious social disasters than the agent itself. It is not only recently that few scattered and disintegrated research efforts have made this point come up to light. Unfortunately few of them have successfully generated positive results on disaster related issues.

Globally is necessary the promotion of incentives for research and theory initiatives coming from central governments, private organizations and organized or individual academics. A call for congruent goals with the socio-political and economic reality is part of this whole task.

Disaster research literature shows that only in the last few years some isolated efforts in the area of sociology of disasters have been undertaken in the region of interest. Very few geographical, anthropological and ecological attempts have tried to

bring earth and social science knowledge, politics and economics to the concerned public. The wide range of meteorological and geological hazards displays a fragile physical environment interacting with a sensible social one where the best from both should be brought up to create better living conditions.

## IMPROVEMENT OF CURRENT EDUCATIONAL EFFORTS.

Located in the south end of Central America, Costa Rica is exposed to a wide variety of natural disasters, characteristic that shares with the rest of countries in that region. Its tecto-genetic conditions make this zone highly seismic. An active volcanic range that crosses the territory northwest to southeast provides geomorphic conditions for eruptions and landslides. An impressive hydrographic network generates severe flood conditions, common in diverse areas of the country, increased during the rainy season. At a macrolevel, the area is subjected to a wide range of meteorological hazards, including storms and hurricanes. Its immense coast line makes it vulnerable to tsunamis.

Despite the ample experience and suffering derived from the effect of disasters, preparedness and mitigation are terms at large unknown. Long term planning is perhaps unaffordable when decisions are made on a sort of daily basis,with scarce human and economical resources and short vision.

As has been said before and confirmed by reality, no program is going to succeed without the joint efforts of scientists, politicians, managers, educators, mass media and mainly the communities involved. Efforts concerted between the private and

public sector on educational efforts, have shown success in other settings. Low cost, highly participatory and simple techniques are part of positive changes.

Mass media also may serve effectively in converging communities in self-planning, even if this tears up the conventional scheme of vertical decisions and legal enforcement. Social settings must be taught to identify their own danger, should propose local solutions not loosing a global perspective under a socio-organizative and motivo-attitudinal approach. In a sense is part of what has being recently call "therapeutic community" which should tend to be self-sufficient not only in the post-disaster phase but in the preventive dimension as well. In this particular respect, urban and rural planning emerges as part of the solution we have being looking for, in few words if the geographical (spatial) dimension of the problem has being put aside for the researchers we should turn to its clues in order to shape a integral solution. Since coverage of an educational campaign is evidently geographical too, media must ensure proper coverage of the area defined under risk coupled with long term integral planning. It must be said that since every disaster constitutes a didactic experience itself, therefore the educational and warning message should not be issued in a way that degenerates in socio-psychological stress.

Educational programs on disasters can be improved without the creation of new structures, instead, utilizing the educational apparatus, plans and decisions correctly proposed can be easily implemented.

If risk can be reduced as Kasperson argues, then those factors that influence social history, values, attitudes and the world view can be altered for positive results, through education. (Kasperson 1988, Nurul 1989). Fritz 1952 adds that response is also "influenced by their experience, the groups, communities and culture in which they live. An own "sui generis" perception held by the population, should be taken into account in order to mix popular and scientific knowledge that provide correct assumptions when educating massively or locally about specific hazards.

Obviously differential perceptions are held by the general public depending on the type of hazard they are exposed to. Bermudez and Neuburger found prove of this in one of the rare studies carried out in the region. Six selected areas showing diverse hazards were assessed in Costa Rica in order to find out details about attitudes, response and the effect on the users of a recent media campaign (Bermudez and Neuburger 1992).

Knowledge about disasters is very limited for the lay citizen. Perhaps a fair description of what they understand for "surrounding environment" would be; "ambiguous situation". As has been found in other settings (Nigg 1982, Perry and Greene 1983) people still rely heavily on the media as the main source of information, after that; explanations from relatives, friends and, celestial signs are brought into their own constructed clarifications. Nigg 1989 states that, widespread myths understood as "cultural explanations for phenomena and events that have impacts on peoples' lives" are the cause of faulty perceptions and understanding of vague situations. Thus, common perception of risk is affected by such

myths, often released from the very preventive and mitigative organisms, portrayed by media and accepted by the public.

Negative consequences of maintaining this scheme abound everywhere since policy makers, planners and practitioners fed from this faulty set of wrong assumptions. These stereotypes permeate both behavioral responses and accurate perception of risk of any type. In Costa Rica not only these findings apply but there have been only modest attempts to start promoting the correction of such problems within the mass media and emergency managers.

In the case of mass media as a powerful tool in disseminating information regarding potential effects of specific disasters has being studied profusely by a number of scholars. Perry and Greene have put into practice DeFleur & Rokeach's theory of media dependency in the case of Mt. St. Helens volcanic eruptions. Their results show that indeed the assessed communities depend on media as paramount source of information in ambiguous situations (Op. cit. 1983) confirmed by Nigg in seismic settings in southern California (Nigg, 1982, 1989). Lindell. & Perry,. despite these facts found show that, a low correspondence between warning messages and protective responses as a general attitude among settlers to wait until the last minute. Creation of behavioral changes and adaptation in warning procedures is part of a sane campaign of risk awareness.

Perhaps one of the easiest schemes to understand the science-media-public relationship is given in Worth & Mcluckie 1977 where they worked under the idea of a direct connection between these three components. They see media as the bridge which should serve

to the community, disseminating "immediate, consistent and official warnings". These messages must be confirmed by different channels and in different dimensions of the populace. One of the patterns of response given by these investigators is that perception and; therefore, evacuation direction is influenced by class status, so: the lower the social class the higher the tendency to evacuate to a friend's house. Breznitz showed through some controlled experiments that a chain of biological and psychological aspects are in stake in perceiving and responding to warnings. Although such experiences were developed to answer questions related to hurricane and surgery warnings the results may help to respond to similar uncertainties in other type of situations since the real interest in these studies were about specific responses in cases of controlled warnings.

In this respect other researchers have demonstrated that an accurate perception can not function effectively if the general model is based on faulty assumptions. The wide-spread belief that people is going to act all in the same way, according to what the media is transmitting to them has shown to be costly both economically and in social terms (Perry & Nigg, 1985. Drabek, 1971).

Another variable mentioned by Perry & Nigg is the need of utilization of media as a educational tool in order to make the public aware of the danger and to make them perceive the emergency management as a reliable source of information. Here they emphasize in the importance of strategies to improve citizen receptivity of official regulations and preventions. Due to a "congenital"

community resistance against federal or state measures an optimal response to issued warnings is never completely achieved(Nigg 1982). In this particular aspect of resistance must be added that there have been another broad range of circumstances studied as influencing individual and collective response. Gender, age, and race are only some alternative cultural particularities that have been studied in some of the recent disasters in United States and abroad. Some others have confirmed the wide differences between distinct social and cultural environments in which the event occur.

Stallings 1982 provides a perspective in cross-cultural situation where class, political status, religion and family attachments are only some of the aspects to know and to include in any perceptive and responsive system. The idea of working with concrete situations in specific disasters supports the statement of Kai Erikson "sociological generalization not always can be achieved" specially when dealing with human material which is so heterogeneous and complex. (Erikson, 1976). It is our intention to point out a forementioned aspect cited by Perry and Nigg -education through media-, generally neglected by formal research; education to communities should be an official concern, but the social group itself should develop -under proper guidance- its own self-education, utilize the rational side of its own "popular Knowledge" and provide local solutions to their risky situations.

Literacy is an element only slightly mentioned in the reviewed literature but stands, without doubt, as a very strong variable in the comprehension of a scientifically formulated solution to the problem. Indirect investigation has shown that it is intra-

culturally important in industrialized societies and very important in other cultural environments -fundamentally in third world countries- where education as a mitigation tool must be carried out using non conventional means. Adjusted improved programs should bring participatory idiosyncracies together. In situations like these mass media also must adapt interests and strategies to accomplish this social demand.

Among the positive aspects attached to the role of media in warning systems it must be also said that there is always a weak point if the set scientists/communicators/communities does not work coordinately. The content and format of the educational messages have constituted another debate among scholars, nonetheless, the most recent approaches agree in the need of message uniformity, consistency and official character (see Worth & Mcluckie 1977, Perry & Greene 1983).

Conclusions derived from the studies about human response and adaptation to ambiguous and dangerous situations suggest that educative programs not only have to be multiplied and focused in hazard-prone areas but must address to specific strata of the population, in understandable language without racial biases or political second-thoughts. Improved programs adjusted to real perception should fulfill specific cultural and religious demands and moreover should dig deep into popular misconceptions and faulty assumptions in order to avoid creation, regeneration or sustaining of them.

## GENERAL CONCLUSION

Education should not be more delayed or neglected, this step compromises not only authorities and emergency executives but the whole community oriented by a consolidated corps of scientists.

Research about psychological characteristics of collective and individual response to educational efforts must be done if we are to create an organized set of data that help us making decisions in before and during the event.

Insurance sector and pressure groups should be addressed. Entire community groups and established organizations must as well be included in such educational effort.

The general public can receive improved education if channels like the educational and religious hierarchies are taken into account. Emergency managers, lifeline organizations and the mass media sector could benefit from the latest findings in sociology of disasters in order to reduce disasters more efficiently.

Given the mighty properties of mass media programs oriented toward developing of conscience about the community's own spatial environment concerted with official concerns in the educational apparatus, positive results can be generated in order to eradicate part of the noxious "mythology and popular wisdom". The positive side of these elements should remain and serve as educational tools where applies while an effort to change part of the social behavior created in the "disaster subculture".