

# Post-disaster reconstruction and economic development: A methodology for the utilisation of public information data

## Introduction

This article proposes a methodology for the development of a cross-national data basis that is useful to disaster relief agencies and national governments for planning strategies of post-disaster interventions that are consistent with and facilitate sustained socio-economic development. The data basis will document the socio-cultural, political and economic characteristics and mitigation strategies in societies where disasters have become stimuli for socio-economic growth as well as in those societies where disasters have been followed by socio-economic downtrends. Eventually, the data basis will be accessible electronically and will be useful to identify what kind of disaster preparedness and post-disaster intervention strategies are appropriate in specific socio-economic and political environments both for emergency assistance and for long-term reconstruction and development.

## Risk reduction management as a multidisciplinary task

Given the enormous burden that disasters impose on the resources especially of developing nations, we cannot any longer afford to continue focusing most of our energies on risk reduction and mitigation understood in the narrow sense of the words. To be enforceable and sustainable, mitigation policies should be consistent with, and more importantly, foster socio-economic growth. The link between mitigation, disaster response and socio-economic growth is the central thesis of this paper.

Sudden and massive disasters, such as earthquakes, are 'total' phenomena because they affect the physical and social aspects of human living. The holistic understanding of all the factors that contribute to a successful disaster-risk management cannot be provided by any single discipline. We cannot evaluate the technical adequacy of mitigation policies without proper geological and engineering knowledge; at the same time, we cannot understand why mitigation

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policies are all too often not implemented or even totally lacking, without analysing the socio-cultural, political and economic configuration of the society in question.

A 1986 publication of the American *Earthquake Engineering Research Institute* provides an insightful example of the importance of interdisciplinary cooperation. The volume entitled *Reducing Earthquake Hazards: Lessons Learned from Earthquakes* that summarises the contributions of geosciences, engineering, architecture, urban planning, and social sciences (EERI 1986). Hence, the contribution of a sociologist/anthropologist (Rossi 1974, 1980, 1982a, 1982b, 1983, 1993) at an International Symposium on 'Disaster Risk Management' organised by engineer's (INCEDE 1998) is not out of line<sup>1</sup>. Personally, I find affinity with the emphasis of engineering on long-term solutions; whereas most of the past research by sociologists has focused on immediate emergencies after disasters, a small group of us have been concerned with issues related to long-term recovery and reconstruction. (See for instance the study of the long-term recovery and industrialisation after the 1980 earthquake in Southern Italy in Rossi 1993). In this paper I want to suggest a methodological strategy that enables one to develop cumulative and comparative knowledge from publicly available accounts of post-disaster processes; the ultimate intent is to develop a codification of a scientifically sound and usable database of social and geo-engineering factors that are positively or negatively related to sustainable socio-economic development after disasters.

## Disaster and socio-economic development

The massive influx of foreign and internal aid that typically pours into areas stricken by major disasters often introduces

cultural, economic and technological changes that have the potential of triggering societal transformations. In 1963, C. E. Fritz pointed out the 'amplified rebound effect' produced by the mobilisation of social actors (and leaders) and the total concentration of societal resources after disasters occur; society can be 'carried beyond the pre-existing levels of integration, productivity and capacity for growth' (in Geipel 1982). E. L. Quarantelli and R. Dynes (1977) stated that catastrophes could have negative and positive consequences for the society. The few long-term studies of post-earthquake events being carried out so far have frequently documented negative long-term consequences of natural disasters, especially in developing countries (see, for instance, Munasinghe and Clarke 1995, chapter two). Yet, there exists also some research evidence to the contrary. Geipel cites the study of the Halifax explosion by Day and Kunreuther (1969), Herweijer's study (1955) of the Dutch catastrophic flood, and the recovery after the Friuli earthquake to support the notion that disaster may be regarded as an impetus rather than a hindrance to the aggregate (supra-individual) development of a region (Geipel 1980).

Long-term development after disasters can be either positive or negative in different societies as well as in different regions of the same society. For instance, the 1976 Friuli earthquake marked the infusion of large investments, the modernisation of machinery and the re-launching of the industrial sector, which increased job opportunities (Geipel 1980 and 1982). As a result, the whole Friuli region experienced new dynamic trends and accelerated economic development (Cattarinussi and Pelanda 1981). When a survey of 900 people was taken four years after the earthquake, 60.3% believed economic conditions were improved

## Note

1. This paper is a revised and updated version of the presentation I made at the Bangkok 1998 International Workshop (I.N.C.E.D.E 1998).

after the earthquake and 77.1% believed that job opportunities had increased (Cattarinussi 1982).

This kind of post-earthquake outcome has not been the norm after Southern Italian earthquakes. After the destruction of the 1968 earthquake in Belice (Sicily), not much happened for a long time in terms of reconstruction, and much less in terms of development. Eight years after the earthquake, four villages still were in need of total relocation and another ten villages were in need of partial relocation (Baldassarro 1975). As of today, some villages have not been rebuilt and others have been abandoned. Yet, every year the Government has allocated funds for this area. No one knows how this money is really spent, but everybody's suspicion is that most of it ends up into the pockets of local politicians.

The 1980 Irpinia earthquake, northeast of Naples, also accentuated old exploitative relationships and profiteering in the disbursement of reconstruction funds (see Rossi 1993). A few months after the earthquake, the central Government launched an unprecedented effort of massive and rapid industrialisation to transform the largely agricultural and underdeveloped area stricken by the earthquake into an industrial region. Through a centrally devised and implemented plan, almost a half billion dollars (at mid 1980's *Lira* value) were allocated by the Government to subsidise the construction of modern factories. The type of industrial sectors and the firms to be subsidised were selected by the Central Government without much local input. The result was that local politicians deeply mistrusted the industrialists 'imported' from Northern Italy so that the later became incapable of linking their business activities to local economic and entrepreneurial capabilities; moreover, skilled labor was also imported from Northern Italy. Instead of stimulating a large network of satellite enterprises, these factories became within a few years 'cathedrals in the desert' incapable of competing in the national market. One reason for this failure was the high transportation costs to buy primary material and sell products; an highway project that would have linked the high plateau of Alta Irpinia (at the epicenter of the earthquake) to the adjacent valleys remained unfinished for decades, and, finally, it was completed in an aborted and truncated form. The import of primary material was a necessity for the new factories, since contrary to the suggestion of many local leaders, most of them were

not designed for the processing of local products. Other infrastructural services were missing also, and eventually the factories became incapable of obtaining loans from financial institutions. Out of 75 factories that participated in our surveys of managers, workers and local leaders, only 61.3% in 1986 and 89.1% in 1987 published their budget; respectively 39% and 63% of the published budgets showed a deficit (Caporale 1991b). A few years later, many of these heavily subsidized factories closed down, with some of them transferring the modern machinery purchased with government funds to their Northern plants. The irony was that, once more, funds earmarked for the development of the economically dep-

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ressed areas of Southern Italy ended up accentuating the economic disparity between the economically prosperous North and the relatively depressed South. The mismanagement of reconstruction funds became a national scandal that led to a parliamentary investigation and prolonged prosecutorial actions against many prominent politicians. (For a more detailed documentation and for the protagonists' perceptions and evaluations of the reconstruction process see Rossi 1993, chapter five).

Why are there such differences in post-disaster outcomes across nations and within a nation? It is preposterous to believe that the status of geoscientific and engineering knowledge can account for these radical differences. The central question is, rather, why the recommendations of geoscientists and engineers are taken more seriously in certain societies than in others and in certain geographic and cultural areas of a given country than in others? A related ques-

tion is what are the societal characteristics that lead to effective reconstruction in some societies and to profiteering in others?

The 1994 World Conference on Natural Disaster Reduction jointly sponsored by the World Bank and IDNDR, linked the issues of disaster mitigation, social vulnerability and sustainable development. At the conference, the notion was proposed that 'the amount of damage caused by disasters is largely a function of decisions made in the course of development' (Munasinghe and Clarke 1995). Inordinate urban expansions, poor building codes, and lack of land-use regulations increases social vulnerability or societal 'predisposition to experience substantial damage as a result of natural hazards' (Munasinghe and Clarke 1995). Mohan Munasinghe and Caroline Clarke (1995), two non sociologists, stated that 'the consequences of natural disasters and the efforts needed to recover from them are country-specific and depend on many factors, such as the proportion of the economy affected [by disasters] and the prevailing economic and social conditions, in addition to the nature and severity of the disaster itself'. Development characterised by chaotic urbanisation, mass poverty, and environmental degradation can greatly augment the effects of natural disasters. To counter this escalating spiral effect we need to engage in paths of sustainable development 'that place emphasis on productive usage of natural resources to meet the needs of the present while enhancing resources to meet the needs of future generations' (Munasinghe and Clarke 1995). According to the same authors, sustainable development has an economic dimension (preserving and increasing the resources, which includes the capacity to mitigate catastrophes), a social dimension (like participation of local communities in identifying and solving problems) and an environmental dimension (preserving the resilience of biological and physical systems); in fact, the more degraded natural resources are, the more vulnerable to disasters they will be. Disaster mitigation was held to be an essential component of all three dimensions (Munasinghe and Clarke 1995).

A strong message is contained in this conference's *Proceedings*: long-term post-disaster strategies cannot lead to positive outcomes without economic development; from the overall argumentation of the conference one must infer also that economic development cannot take place without a socio-cultural re-engineering

of newly developing countries. My own position is certainly clear on this point; the production of new wealth by itself does not automatically translate into better mitigation and environmental policies; such an outcome is contingent upon a socially sensitive usage of resources which does not happen without some sort of participation in political processes. Stated succinctly, economic development will not be beneficial to the society as a whole without concomitant socio-cultural development.

Disasters as 'total phenomena' affect the social and economic strata of society and these strata will engage in paths of post-disaster recovery and related socio-economic changes that are consistent with the logic of their own interests. The studies quoted by Geipel show that a positive, universalistic, participatory and entrepreneurial logic leads to positive growth; the post-disaster recoveries after the Northridge and Kobe earthquakes have revealed similar outcomes. On the contrary, in Latin America, in Southern Italy and in other relatively undeveloped regions disasters have occasioned the reproduction of a particularistic and exploitative logic; the latter type of logic tends to prevail in highly stratified and lowly participatory societies.

It follows that the negative consequences of disasters cannot be adequately explained only by referring to the small scale of the economies; this explanation seems to be suggested by R. C. Otero and R. Z. Marti for Latin American and Caribbean countries (Otero and Marti 1995:28). It is true that the smaller the resources are, the longer and more difficult the recovery is. However, the crucial issue is that often reconstruction programs aggravate the unequal distribution of wealth (Otero and Marti 1995) and in doing so they prevent solid growth.

Gerald M. Meier (1989), a well-known authority in matters of economic development, lists various socio-cultural and political characteristics of developing countries that are an obstacle to economic growth: hierarchical social relations, strong social cleavage among strata, limited social mobility, ascribed social positions, tradition-oriented values, group loyalties and personalised social relations, lack of innovation and achievement orientation, recent and frail political independence, political instability, weak democracy, tendency to preserve the status quo.

If this discourse is correct, it is important that we document in a systematic way the socio-cultural, political and

economic characteristics of societies where disasters have marked societal downtrends and of societies where disasters have become stimuli for socio-economic growth.

This systematic knowledge would tell us what are the planned economic, legal, technical strategies (including geo-scientific and engineering ones) that we must have in place to actualise post-disaster reconstruction in a developmental way. This knowledge should guide international voluntary agencies, as well as policy makers, in devising culturally appropriate strategies of intervention in the emergency as well as long-term recovery processes. The social and economic stakes of unplanned mitigation are too serious, especially in developing countries, to be left to the 'natural course' of social events.

### **A data base methodology for strategising developmental policies of disaster mitigation**

We need a research strategy that allows us to accomplish the following goals:

1. Document the socio-cultural, political, economic correlates of positive and negative patterns of disaster mitigation, emergency response and long-term recovery
2. Measure the interrelationship among all these sets of factors in synchronic and diachronic relationships both within a given society and across societies.

Traditional research methodologies have two fundamental shortcomings. First, the compartmentalisation of disciplines has resulted in some repetition in research efforts, a lack of holistic understanding and a failure to produce cumulative knowledge on a multidisciplinary basis. Secondly, traditional research methodologies cannot provide economists, urban planners, and engineers with a well-informed and operational knowledge for practical decision-making. In fact, traditional research has been way too selective in the focus of inquiry (otherwise you do not get funded!) and too delimited in scope and time of data collection. Hence, the first problem is that too much data on long-term recovery processes remains unanalysed so that the information basis for social and technico-engineering intervention is inadequate. Secondly, all too often, scientific research seeks theoretical interpretations and formulations, which by very definition are abstract, that is, remote from the concrete indicators that practitioners and policy makers need.

I submit that the advent of modern

databases offers for the first time the opportunity to develop holistic, multi-disciplinary and practically applicable information on post-disaster trends. Databases contain a great amount of information on all aspects of pre-disaster and post-disaster activities (and in-activities!) and covers them until the resolution of events. To profit theoretically and practically from this wealth of comprehensive and multidisciplinary information, we need to make an inventory of the variety of existing data bases and their sources of information. Moreover, we need to develop a theoretically sound and quantifiable codification of all the factors that have a positive or negative impact on risk mitigation, disaster response and sustainable development. This coded information will permit one to develop field-based indicators of mitigation policies, disaster response and post-disaster development as well as a quantification of their socio-cultural, political and economic correlates.

I have been involved for five years in the collection and consolidation of various databases on post-disaster developments after the 1994 Northridge and 1995 Kobe earthquake and I have so far developed a code of 106 variables to categorise and quantify the information. I have also collected information on the post-disaster events after the 1998 Italian earthquake (see Rossi 1998) and the 1999 Turkey and Taiwan earthquakes. I provide a preliminary sample of the major headings of the code developed so far on the basis of the abstracts of new items covering the events of the first five years after the Northridge earthquakes.

### **Sources of general and technical information**

Sources of general and technical information that are abstracted in the databases: daily newspapers (local, national and international), general weeklies; business journals and periodicals (investment, trade, financial scholarly); publications of governmental, State publications & journals of cities and institutes of urban development; journals of professions (medicine and health care, architecture, and so on); journals of educational institutions and research professions (technological institutions, geological, seismological, geophysical, environmental professions); industry publications (drugs, oil & gas, restaurants and food distribution, transportation); periodicals of construction-related industries (building and construction, electrical and maintenance, fire/oil/gas, welding perio-

dicals); geological, geophysics, seismological journals; insurance and property management periodicals; banking and financial periodicals; consumer and interest groups publications.

### **Type of coded items of information (106 variables)**

**Seismic impact:** location, intensity, path, other characteristics of the seismic wave; aftershocks; number of dead, wounded, homeless, missing people.

**Damage, damage inspection, estimated losses:** damage to infrastructures, public and private buildings, lifelines, businesses, other structures; inspection and re-inspection of damage; total loss amount, loss amount by type of structure and infrastructure.

**Emergency response:** search and rescue operations; medical emergencies, Red Cross, Fire Department and Police activities; emergency activities by city, state, federal agencies, voluntary organisations, public institutions, businesses; external aid by other municipalities and overseas; type, amount and length of assistance by all these agencies.

**Evaluations of emergency aid:** speed, quantity, coordination of aid delivered; jurisdictional conflicts among relief agencies; victims experiences and reactions to the aid; legal claims against city agencies, building owners, and insurance companies; fraudulent claims and restitution.

**Social impact of the earthquake:** medical and psychological problems; driving habits changed; exodus from the stricken areas; impact of the earthquake on job and work patterns; differential impact across different social strata; difficulties of low-income renters, rent control in jeopardy; the phenomenon of ghost towns; political impact.

**Negative economic impact:** price gauging; tightness of rental space; difficulties of small businesses; other types of businesses in difficulty; relocation of business.

**Sectors stimulated by the economy:** transportation, manufacturers of building material; construction of private housing and malls, entertainment industry, tourism; job creation; other business sectors and professions quickly recovering and/or stimulated by the quake; controversies over the good vs. bad economic impact of the earthquake.

**Evaluations of construction standards and practices:** design flaws, soil conditions; performance of retrofitted structures; engineering reports on damaged steel-frame structures; proposed code

revisions; upgrading engineering designs; the question of steel-frame structures; presence and adequacy of mitigation measures.

**Long-term reconstruction issues:** varieties of interventions by city, state, federal government; problems in public and private reconstruction; financial sources of reconstruction: plight of banks, problems of multi-family housing and homeowners; amount of homeowner insurance; estimate cost of the reconstruction.

**Crisis of the insurance industry:** Losses of the insurance industry as a whole; losses of individual insurance companies; insurance strategies to deal with losses; state regulation of insurance companies; debate on state and federal insurance programs; insurance litigation.

Databases contain a great amount of information on all aspects of pre-disaster and post-disaster activities (and in-activities!) and covers them until the resolution of events.

**Re-construction and development:** cultural factors affecting positively and negatively the recovery; tax breaks, policies of economic incentivations; economic performance of various industry sectors at 2,3,4,5,6 years from the disaster. (This section of the code is under development).

### **Analysis and interpretation of the coded information**

As we can see, media coverage provides a lot of information on the nature of the disaster, immediate response, efficacy of mitigation measures, long-term recovery and reconstruction issues, economic impact of the earthquake, reconstruction and economic development. (Each of the headings contains a very large number of sub-headings and subcategories).

But is there any evidence of development and betterment linked to the Northridge and Kobe disasters? K. J. Tierney reports (and the report is also summarised in the data bases) the following data from a survey of 1079 businesses in Santa Monica and 1110 in

L. A. taken on May 1995 or 16 months after the earthquake: half of the businesses indicated they returned to the pre-earthquake level, one fourth failed to recover, one fourth were doing better; the larger businesses were more likely to report to be better off than small businesses (Tierney 1997).

One year after the quake the chief economist of the State of California found that the Northridge quake caused a brief disruption followed by a surge in economic activities as a result of outside aid and rebuilding fervor; he concluded that the quake probably accelerated the onset of Los Angeles economic recovery (Romero 1995). Los Angeles City has been involved in 'Community Redevelopment Disaster Planning' and 'Economic Development Programs'.

*My analysis of databases on the Kobe earthquake* has proceeded at a slower pace, but it has shown a similar variety of data sources. The research done up to this point has revealed that databases contain abstracts of information on Kobe-related events from 166 American periodical publications: 82 newspapers and weeklies of general orientation, 41 periodical representing business sectors (finances, trade, construction industry, electronics, fire insurance, steel, wood, gas industries and so on), 43 scientific journal and journals of professional societies (architecture, engineering, economic, geography, geology, mechanics, medicine, photogrammetry, risk management, seismology, and so on). It is only reasonable to expect that Japanese sources on Kobe post-disaster events are more numerous and diversified than American sources.

During the process of coding the abstracts of media items for the first year after both earthquakes, I found that most of the coding categories developed for Northridge data are applicable to the Kobe data with the addition of a few variables, like the issue of external aid, Japanese people in the U.S. seeking news about the Kobe situation, expression of USA-Japan sympathy, and some references to Japanese cultural traits affecting the reaction during disaster emergency and recovery.

I have also seen some information on cultural, political and economic aspects of post-disaster events after the Kobe earthquake. During the first few months after the earthquake only temporary losses were predicted (such as in the shipping industry), and there were frequent reports on the expected boosting of the economy by the earthquake: firms seizing the

opportunity to rebuild and modernise, anticipated boom in construction, lumber, cooper, sake, wireless and satellite technology. These expectations were based on the solid state of the Japanese economy.

I do not possess quantitative economic data on the status of Kobe five years after the earthquake, but in the 12/1/97 Report by the City of Kobe one can read a few pages on 'urban redevelopment' and 'development' projects. Section five deals with 'economic revitalisation': there the focus is on 'restoration' of existing businesses and industrial activities, but also on 'promoting industries integral to urban restoration' on 'nurturing business for the 21<sup>st</sup> century'; on 'raising the level of sophistication of the industrial structure', on 'nurturing new industries and promoting international economic exchange'. In section six the goals for rebuilding the port of Kobe are described as the restoration of port facilities, 'strengthening its functions as a mother port of Asia' and 'strengthening its global competitiveness'. Section seven is on 'promoting Safe Urban Development' and 'strengthening disaster prevention measures'. Section ten discusses promotional projects, including the 'new Industrial Structure Formation Project' where the goal is to create 'knowledge-intensive network-type businesses and attracting foreign firms to facilitate self-restoration by the private sector'. It is clear that, at least programmatically, the city intended to move beyond replacement/reconstruction and realize new growth and development. Information databases also show the existence of the 'Hanshin-Awaji Economic Revitalization Organisation'.

One may raise the question of whether a systematic codification of the content of the databases can produce better results than the existing compendia of research findings. I am referring here to two inventories of sociological findings: *Human Systems in Extreme Environments* by Millet, Drabek and Haas (1975) and Drabek's *Human System Responses to Disaster: an Inventory of Sociological Findings* (1986). The latter work organises the findings according to a temporal sequence (preparedness and planning, warning, evacuation and other forms of pre-impact mobilisation, post-impact emergency, restoration, reconstruction, hazard perception, attitudes toward mitigation) and a fourfold structural level: individual, group, organisational, community, societal and international levels. Both of these compilations of propositional findings can serve as guidelines to develop categories for coding the information available

in a variety of databases. However, the empirical referents of the events often disappear from propositional statements. Unfortunately, even on the level of propositional inventories these codifications of findings have serious shortcomings. For instance, the authors responsible for the chapter on 'Social Sciences' of the report of the Earthquake Engineering Research Institute (EERI 1986) criticise disaster studies as being mostly concerned with the emergency period alone and for being descriptive rather than analytical. Secondly, propositional statements formulate relationships between a few factors (usually two at a time) prescind from contextual findings; hence, one cannot determine which other factors are related with those entered in propositional statements.

### Conclusion and recommendations

The quantified codification of the type of information described above makes possible a holistic description of each event and a comparative analysis of disaster events within a given society and across various societies. To minimise data loss and maximise comparative and correlation analyses we ought to undertake a twofold type of data collection on a systematic basis.

#### First proposal

1. We should develop an inventory of the available data bases that index and abstract general and technical information on disaster-related events and their socio-cultural, political, economic and geo-physical concomitants.
2. We should develop a categorisation and codification of the content of the data bases (and eventually code the entire text of the source, when available and when it covers important issues).
3. We should computerise the coded categorisation of the information for usage by researchers, disaster planners, and other practitioners in the field of risk management much in the fashion of the Human Relations Area Files that has become a standard tool for cross-cultural analysis (Murdock 1983a, 1983b; Human Relation Area Files 1987).

#### Second proposal

With the cooperation of governmental and private agencies involved in disaster risk management we should develop a standardised tool to record, country by country, the disaster-related legislation, policies, programs, and indicators of recovery/ reconstruction/development outcomes as officially recorded.

This approach will permit one to

develop a complete and comparative record of societal experiences that can be submitted to the same coding procedures and statistical analysis as previously discussed.

There are many advantages for coding the large quantity of the available information contained in the databases (and in the proposed standardised tool):

1. General media and practitioners tend to use common terminology and behavioral referents so that the effort of decoding encrypted information is kept at a minimum. (At the same time, when we code databases that report from technical sources, we must rely for codification of experts in the field).
2. Databased information provides an holistic view of disasters rather than fragmented and piece-meal views on selected aspects of them; one can argue that the latter is usually the case for much funded research.
3. Databased information is not limited by the need to collect only the data that are most appropriate to test a specific theory or hypothesis. Moreover, non-quantifiable information often adds important contextual knowledge.
4. Databased information is mostly informant-based information (as opposed to respondent-based information of much funded research).
5. Databased information conveys the point of view of the major constituencies of disaster events: government, relief agencies, private sector, victims, general population, advocate and consumer groups, and experts in the many areas directly involved with disaster recovery. The following types of statistical analyses are possible with a coded data set:

**1. Event synchronic (relational) analysis:** One can study the interrelationship among various facets of disaster relief and recovery activities (including their social, economic and geo-physical concomitants) that occur at a particular period in time. For instance, the coordination achieved among federal, state, city agencies and voluntary organisations during the emergency phase.

**2. Event diachronic analysis:** One can study, for instance, the relationship between hazard preparedness and amount of damage; amount of damage and quickness of recovery; speed and amount of fund allocation and speed and level of recovery; relationship among emergency recovery, temporary housing, permanent reconstruction, and socio-economic development; tax

and financial incentives, on the one hand, and speed of business recovery, on the other hand.

**3. Societal cross-event analysis** or comparative analysis of patterns of events after different types of disasters that occur within a given society.

**4. Cross-societal event analysis** or comparative analysis of similar types of disaster events in different societies, (and both in a synchronic and diachronic perspective).

One word of caution is in order. The coding categories must be developed on the basis of theory-driven scholarship (or at least a synthesis of previous research findings) and on sound taxonomic principles. Scientific rigor and multi-disciplinary cooperation are indispensable for the quantification of database information that is useful to develop cross-societal applicable and country-specific policies of disaster-induced socio-economic development. For this reason, I am presently conducting a critical review of the literature on economic development and I have developed a dialectic framework for the analysis of globalization processes (Rossi 1999). No strategising of socio-economic development would make sense outside a global context.

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## About the Author

Rossi Ino is Professor in the Department of Sociology and Anthropology; St. John's University, New York City. He has done research in Anthropological and Sociological Theory, Organizational Culture, Informal Economy, Technological Innovation, Disaster Studies. Among his publications are the following volumes: *The Unconscious in Culture*; *Anthropology Full Circle*; *People in Culture*; *The Logic of Culture*; *Structural Sociology*; *From the Sociology of Symbols to the Sociology of Signs*; *Community Reconstruction after an Earthquake*. Recently he has completed an essay that approaches economic development from a global perspective: 'Globalism, Nationalism and Social Identity' (Rossi 1999).

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*Postscript: The author entertains initiatives of international conferences and cross-national collaboration on this kind of project.*