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RESEARCH PROJECT
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SUMMER RAINS: URBAN CATASTROPHE AND SOCIAL PRACTICES IN
THE CITY OF RIO DE JANEIRO

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SUMMARY

Based on the presupposition that, far from being an exceptional event, the calamities associated with the Summer rains are a regular phenomenon that is part of the City of Rio de Janeiro, the research pretends to examine how this city: a) perceives the rains and its consequences; and b) operates in face of its effects.

In the examination of the claims and practices associated with the urban calamities brought about by the Summer rains, three segments of society and the drama of the city will be focused: the public administration, the means of mass communication and the "afflicted" population. For the first, the sense and effectiveness of the preventive policies and emergency actions, as well as its institutional set-up will be examined. Insofar means of communication, a survey will examine newspapers. As to the "afflicted" population, a field study will be made in "risk areas", areas that were affected and with the "ex-afflicted".

Considering the calamity as an event delimited in time, the study will take in account a temporal indenture with three moments: before, during and after.

INTRODUCTION *

Nothing happened to me. Only my eyes were hurt by seeing so much sadness. Sometimes, one prefers to be blind. But it doesn't help, nothing will be done. Every year it is the same thing: the men come here, tell us that the land will slide, point out a number of shacks and go away. Then, one does not know what to do. Go away ... ? go where, Mister ? That February I was lucky, my family had travelled up North. I was there alone, thank God. I spent the nights at the Association, but during the day I would always be at home, so no one could think I had abandoned it. There is a whole lot of people with an this here, even knowing that someday we can die in a landslide. But it is this way, who don't take a risk don't get nowhere. You want to know how it happened, don't you Mister ? Look, it can't be described, I don't even like to remember. The roar was very strong and it happened all of a sudden. When I realized what I was seeing, there was nothing there, just dirt and a fearful silence. I ran to help. It looked more like a bad dream ... I was digging with my hands, I knew there were people below, but I could not get to them ... I could not. I had this in my head for a long time, unable to sleep right. I prefer not to talk about it. There are things that one only knows when one goes through it ... when one sees. You and all those folk from below, don't know what this is. The newspaper sends people here only to take pictures and ask questions. They don't want to know of our sorrows. I saw a journalist with a camera, taking pictures of a woman in despair looking for her lost children. Just to be able

* This story was written by the author

to sell more papers ... I wanted to break the camera and the reporter's neck ... The firemen took a long time to get here. The city was flooded - you must remember - it was all flooded and there was a traffic jam at each corner. When they managed to come with the equipment, about three hours had passed. They managed to save many ... but a woman, a boy and a man, they couldn't get them in time. The Association was packed. Full with people too scared to go to their shacks, plus all the people that lost their homes ... It was the worst night in my life, and if you think Mister, this soon passed, you're wrong. It took more than two months for things to fall back to normal. Normal, really ins't right, 'cause after all that, nobody is the same as before. Some folk came out pretty ... they got a new house from the Municipal Government, in a safe place - but far away from here - the rains don't threaten, but far. I didn't want one. I put some more cement with crushed rock to strengthen the structure. You can take a look Mister, that won't fall never. Only if God wishes ... But then there is no getting out; if He wants it even the houses will go, like that one last year. Nobody is free from danger - the " risk " as they call it. It is every place. For us, that are poor it is even worse. We just can't replace what was lost. But I am a devil: it was here that I was able to build my house - I even put glazed tiles - and it is here that I'm going to die. There are days that I think that the house one makes to live is the same made to die in. Why worry? One day everybody has to die. I rather die close to all that is mine ... 'cause if I don't die, I will still have them.

THE OBJECT

The imaginary introduction of this project, fiction but possible, evokes the drama that is afflicting Brazilian cities with ever more frequency: the urban catastrophes. The story that we wrote, is based on what happened in the city of Rio de Janeiro in February 1988, when the state of public calamity was decreed. We have borrowed from anthropology, the idea of the "sense of having lived through" an experience so as to, through fiction, present the theme with which we expect to work. We have tried to picture some aspects that seem fundamental for the analysis: representations and expectations, taking form as the catastrophe progresses, losses, gains and the population's self-defense limitations, the performance of the local authorities and of the means of mass communication and the marks left on the affected population. We have as a main concern, to understand how the big city deals with calamity, what representations are created, what are the expectations of different groups of society facing danger... What practices, perceptions and notions are built from the occurrence of a calamity - generally as a result of Summer rains - in the city.

We start by accepting that calamities in the city of Rio de Janeiro are periodical, and not exceptional or unexpected phenomena, but part of the normal urban life. Even COSIDEC (Coordenação Geral do Sistema de Defesa Civil) (General Coordination of Civil Defense) of the Rio Municipal Government, alerts to the possibilities of occurrence of disasters due to Summer rains, as can be seen, from the following citation, in the

Introduction of "Planos de Verão" (Summer Plans), end of 1987 issue:

" With the arrival of Summer, the city of Rio de Janeiro is subjected to strong storms, that provoke exceptional rainfalls and cause all sorts of troubles to the population. In this period, the possibility of serious occurrences is maximized, that need the help of all public organizations so they may be prevented or minimized, as well as the entities serving the community. The Civil Defense System of the City of Rio de Janeiro will be, during this period, under Maximum Alert, with all organs of Basic Support in a constant state of emergency attendance " (COSIDEC, 1987, page 1)

Though the 1988 Summer was especially tragic, we point out that the "Summer Plans" laid out each year by COSIDEC do not change substantially.

The catastrophe is the " consummation of tragic action " in the Greek tragedies, "the principal, decisive and culminant tragic happening, in which the action is made entirely clear"(1). In our case, it shows the present social organization, evidenced and sharpened in situations of calamity. The catastrophe, seen as a crisis, moments of commotion and social mobilization, seems to us revealing, a perfect " laboratory " for the understanding of the society in which we live.

However, there are differences and similarities between urban catastrophes and the Greek tragedies. The first, as we have pointed out, have a cyclic character, they will come back, while the other, no: it's end is a definite one. Insofar the "actors" involved in the urban catastrophes, not only the sequels remain, the marks of tragedy, but also the dreadly expectation of future

(1) Definition found in the Novo Dicionário da Língua Portuguesa by Aurélio Buarque de Holanda Ferreira.

calamities. If we make a cut in time - before, during and after the catastrophe - we will see that, in urban catastrophes, the before and after are mixed, once that the moment after an advent, is also, at the same time, the moment that precedes the occurrence of a new calamity. However, both have in common, the fact of clarifying the "action" in it's death, as we hope to demonstrate further on.

In the universe of the subjects roused by the the urban catastrophe theme, the main concern of this project is to understand how the city places itself and operates when facing them. We will use the urban catastrophe to analyse the relation that the city has with calamity proper.

The familiarity that the Cariocas (native of Rio de Janeiro) have with rains - the cloudbursts - occur since the XVII century and, if the problem has become more intense during the years as the headlines seem to assert, it is also true that the densification and growth of the population, as well as the urban social morphology, factors directly connected to the proportion that they have assumed, compounding the problem.

Today the occurrence of rains brings about a series of troubles, accidents, codes, representations and expectations. If for some this translates in getting late to work, or not having the day maid come in, for others this can be mean the loss of kinfolk, friends or neighbors. If some dwellers near Av. Brasil gain petty cash, by helping push cars held up by the high waters, others loose when they are dismissed from work, because they

could not leave their home, due to the streets being completely flooded. If the rain implies in traffic jams that oblige people to cancel or not fulfill engagements, it also implies in the total disappearance of the homes and all worldly possessions of many that live in slums of the "risk areas".

From the companionship of city and catastrophe, we can perceive the construction of the notions of "risk", "urban risk", danger, threat, among others. The notion of "risk" is not arbitrary, but a reflex of the real - the reality of the catastrophes in the urban midst - and organizes the city according to a discriminative logic. Through this notion, the city is cut, dividing its inhabitants in, at least, two distinct groups: those that live in areas offering safety and those that live in insecure areas, the "risk areas". We are interested in understanding how the notion of "risk" is built, utilized and handled. We are concerned, for example, in exploring this subject, to see to what point this notion justifies the old practice of removing an undesirable "favela" (slum), through the renewed speech evoking the emergency of ecological questions.

When establishing our theme: Urban Catastrophies, and trim our object - How does the city react and operate when it faces catastrophes? - we feel it is necessary assume a time focus in our study, proposing three moments: before, during and after the catastrophe.

In the analysis of the moment prior and after the catastrophe, our attention is turned towards, respectively, to the

construction and to the actualization and/or reappraisal of the notions of "risk" and the managing of the catastrophe residues in periods of normality.

Insofar the period corresponding to the catastrophe proper (during), we believe it is possible to comprehend the social organization through a moment considered exceptional - the "catastrophic" moment - where "all the action is made clear". Thus, we will tackle aspects related to victims, the de-sheltered, donations, lodgings, including emergency and distress decrees. We will also look on the subtle boundary between danger, and the materialization of the disaster and facts connected to the alterations in the daily urban life that seem to us revealing of the reality in which we live, that is, the behaviour, the manifestations and social reactions when facing an emergency. The impoverishment of calamity victims is violent and we believe that the processes of social re-integration, reconstruction of the network that makes his survival possible and to replace that which was lost, should be studied. Especially we will analyse the condition of the homeless (a new social condition): loss of the home, a rupture in the family ties and interruption of the access to resources strategic to reproduction. We will also examine the service dispensed by the public authorities and other social segments of the city (2).

Finally, to make possible a study that may be representative of

(2) In relation to the Rio de Janeiro municipal authority actuation during the calamity of February 1988, some references may be found in the papers (Oliveira and Sydenstricker, 1988; Guarany, 1988).

the city, we decided to focus on three social segments, three "deponents", informers that, though not having the same weight, represent at least for the purpose of this study, the urban society: the public administration (state and municipal), the means of mass communication and the population struck by the catastrophes.

THE MANY PROBLEMS CONNECTED TO THE OBJECT

One of the objectives of our research is contribute to the wider debate of urban calamity themes and, in particular, those associated to the Summer rains in the city of Rio de Janeiro. We do not intend to develop a structural analysis of catastrophes, what is being done with competence by some authors to whom we have recurred (3). Caring to open a fan of questions in the direction of several aspects sparingly pondered, be it in sociological studies, be it in establishing policies, we will put in the limelight, actors scarcely known in Rio de Janeiro: they are the victims of landslides, floods and housing collapse, but also firemen, public servants and specialized professionals in "risk". With these actors, their plots: receival of donations, their centralization and distribution, construction and improvisation of shelter, attendance of victims, over and above definitions and actualizations of notions of "risk" and the consequent mapping of " risk areas ".

We agree with Herzer and Rodriguez (1989) when they say that a disaster denounces an extreme situation before and at the same time surprises, revealing part of the urban reality that was hidden. The exam of this former situation certainly will lead us to the discussion of notions such as "risk", "urban risk", danger, threat among others. Among these, the notion of " urban risk" is the one that is better defined.

(3) We refer especially to some authors that have dealt with the matter in the realm of Latin America, as Hilda Herzer, Alfredo Rodriguez, Guillermo Espinoza, Sergio Feredovisky, Beate Frank, (1989), among others.

Technically, housing developments in "risk" conditions may be classified in *(4): the lot, the edification and the surrounding areas of "risk". The first relates to the inadequacy of type of terrain to the lot, as for example, some types of cuts in slopes, housing located under high tension wireline or on unstable landfills. The second refers to the housing conditions, many time insecure due to the improper choice of construction techniques or lack of maintenance to guarantee the minimum safety conditions. The third type, surroundings or region of "risk", presents a difficult and more complex solution, once it reaches a determined area, independent of the conditions of the lots and edifications that may exist, or yet, when existing constructions are a threat to the neighborhood. It is the case of constructions near to unstable slopes, in flood prone regions, adjoining edifications under threat of collapse, among other types. Further to the conditions of housing, we could enumerate the sinking of street sections and sidewalks, viaducts badly maintained or marquises with poor maintenance. If we continued to list the conditions and the situations of "risk", as accepted by certain technical knowledge, we would arrive at the conclusion that they are innumerable.

Certainly not all these "urban risks" are susceptible of becoming scenes of calamity or catastrophe, what suggests the relevance of an investigation regarding the mapping of the "urban risk areas" or, preferably on the criteria used in

(4) This classification is the result of debates held at the Secretariat of Municipal Social Development (Rio de Janeiro) from March 1987 through December 1988

identifying the "risks" throughout the city. We believe that the definition and the disclosure of the "risk" notion, danger, among others, is made up and differently interpreted by the various public administration entities, as well as the press, radio and TV, and of course, the population involved.

To illustrate the approach desired, we will first point out the public administration outlook, giving an example how some entities act (5). The Civil Defense is responsible for setting the strategy and also carrying out these plans in case of an emergency. It does not, however, determine which are the "risk areas" in the city. Its action is restricted to the time the normal city life is threatened. The Directory of Geology in the study of "urban risks", only considers the inclined areas in the city. The Municipal Secretariat of Social Development carried out in 1987, a census of "risk areas" that included areas of irregular occupation (non legalized housing developments), considering a much wider spectrum, as areas next to rivers or under high tension lines, cases of imminent eviction, among many, and of course, slums situated on dangerous slopes. The City Expansion Plan (Plano Diretor da Cidade), considers that "risk areas" are located on high angle slopes and using different criteria, settlements beside rivers or on other public domain areas. It does not define "risk areas" but conditions the execution of urbanization projects of favelas slums on inclined

(5) During the period 1987/88 the author worked in the Municipal Secretariat of Social Development and the General Coordination of the Civil Defense System of the City of Rio de Janeiro, when we had the opportunity of verifying how the notions of "urban risk" are established and the "risk areas" mapped out in the scope of the municipal public administration.

areas to the disoccupation of "risk areas". In the domain of the State of Rio de Janeiro, SERLA (Superintendência Estadual de Rios e Lagoas) (State Superintendency for Rivers and Lagoons) focus its attention on settlements beside rivers and lagoons, among others relative to its sphere of action.

The means of mass communication, intermediating information between public authorities and the population, define notions of "risk" according to the role they fulfill in determined historic moments. Basically, they point out the public administration incompetence and alert the population to "risks" the city faces due to the precarious housing conditions of the poorer strata. It is common to see the mismatch of information between different press agencies, and of course, there are always the sensational approaches to obtain better selling headlines.

The "population involved" builds their own notions about "risks" in the city or their dwellings, be it because they are a direct part of catastrophes, or due to having different outlooks and strategies of survival (6).

In a nutshell, the Carioca (Rio dwellers) approach of catastrophes associated to Summer rains will be carried out putting in the limelight the following elements:

(6) As an illustration, we remind the paper by Ana Luísa Martins Costa on the dwellers of the flooded area when the Sobradinho Dam was built. The Federal Government technicians, interpreted that the resistance of that population to leave the area is connected to the ignorance or stubbornness in accepting the construction of the hydroelectric plant. However, for the dwellers, accustomed to the river floods, to move, was like running away, forsaking their social space.

1 - the de-naturalization of catastrophes, that is, looking to them as a revealers of the social situation that is inherent to it, a reflex of the social-morphologic structure of the city;

2 - questioning of the technical "neutrality" of the notion of "urban risk" as operated by the public administration;

3 - consideration that different segments of urban society represent and face catastrophe according to different codes and values (and interests).

If the catastrophe can be seen as the opposite of normality, it is as real as the tragedy, opposite of ourselves, intrinsic and not always perceived, but permanent in the day by day of life.

OBJECTIVES

- 1 - To describe and analyse notions of "urban risk" and others connected to it, created by the Public Administrations (municipal and state), by the press, radio and TV, and the population directly involved by calamities;
- 2 - to obtain subsidies that contribute to the debate of environmental questions in the urban and particular metropolitan context;
- 3 - to put in evidence the social reality of catastrophes, that is many times hidden in the urban landscape;
- 4 - to recover and analyse the performance of different social segments of the city when facing catastrophes;
- 5 - to broaden and deepen the bibliographic research of the subject, be it under the operative viewpoint, be it under the optic of urban planning and sociology;
- 6 - to reflect about our first hand work experience in the Municipal Secretariat of Social Development in 1987/88 and the Coordination of Civil Defense Service and collect subsidies for a critical reflection on the public administration policies and practices relative to catastrophes.

METHODOLOGY

Our research will be based on the city of Rio de Janeiro and will have as reference the calamity occurred in February 1988. We will use the following methodology:

- 1 - to collect data relative to the catastrophe in the city, basically in COSIDEC (Coordenação Geral do Sistema de Defesa Civil) and in the SMDS (Secretaria Municipal de Desenvolvimento Social) of the city of Rio de Janeiro;
- 2 - to interview public servants and professionals involved in the calamity occurred in Rio during February 1988;
- 3 - to interview, though without any pretensions of carrying out a quantitative survey, the "ex de-sheltered" (those that in 1988 lost their homes due to the catastrophe), viewing to analyse qualitatively their condition and the processes of social reconstruction which they lived and may be living still;
- 4 - to interview dwellers of areas considered as "risk areas";
- 5 - to reasearch available material in the press and TV stations;
- 6 - to file newspaper reports that may be published.

CHRONOGRAM

We intend to carry out the proposed work in the period of March 92/June 1993, according to the following program:

1 - bibliographical research and revision, data collection and interviews - 5 months;

2 - carrying out the written work - 5 months;

3 - revision of the written work, return to the field and to the sources of data and necessary material - 5 months

GENERAL BIBLIOGRAPHICAL REFERENCES

1. BACHELARD, Gaston - "A Poética do espaço". Editora Martins Fontes, São Paulo, 1989.
2. BERGER, Peter e Luckmann, Thomas - "A construção social da realidade". Editora Vozes, Petrópolis, 1978.
3. BURKE, Peter - "Cultura popular na idade moderna" - Editora Companhia das Letras, São Paulo, 1989.
4. CASTELLS, Manuel - "A Questão urbana". Editora Paz e Terra, Rio de Janeiro, 1983.
5. CORAGGIO, J.L. - "Territorios en transición. Crítica a la planificación regional en América Latina". Editora Ciudad, Quito, 1988.
6. COSTA, ANA Luísa Martins - "Uma retirada insólita: a representação camponesa sobre a formação do lago de Sobradinho" - tese de mestrado, Museu Nacional/UF RJ, Rio de Janeiro, agosto 1989.
7. COSTA, Ana Luísa Martins e DAORE, Ana Maria Lima - "A Criação do social pelas águas: notas sobre o manual da Eletrobrás - Museu Nacional/UF RJ, Rio de Janeiro, agosto 1989.
8. COUVRE, Maria de Lourdes M. (org.) - "A cidadania que não temos". Editora Brasiliense, São Paulo, 1986.
9. CULLEN, Gordon - "El paisaje urbano. Tratado de estética urbanística" - Editorial Blume, Barcelona, 1974.
10. EVANS, Fritchard, E.E. - "Anthropology and history", IN: Social Anthropology and other Essays. Free, New York, 1964.
11. FOUCAULT, Michel. "Microfísica do poder". Edições Graal, Rio de Janeiro, 1986.
12. Ibidem - "Vigiar e punir". Editora Vozes, Petrópolis, 1977.
13. GUIMARÃES, Dinah e CAVALCANTI, Lauro - "Arquitetura kitsch. Suburbana e rural". Ministério da Educação e Cultura e Fundação Nacional de Arte, Rio de Janeiro, 1979.
14. GONÇALVES, Carlos Walter Porto - "Os (des) caminhos do meio ambiente." Editora Contexto, São Paulo, 1989.
15. HALL, Edward T. - "A dimensão oculta". Livraria Francisco Alves Editora Ltda, Rio de Janeiro, 1977.
16. JACOBS, Jane - "Muerte y vida de las grandes ciudades". Ediciones Península, Madrid, 1973.
17. LEEDS, Anthony e Elizabeth - "A sociologia do Brasil urbano". Zahar Editores, Rio de Janeiro, 1978.

18. LEFEBRE, Henri - "Espacio y politica. El derecho a la ciudad. II, Ediciones Península. Madrid, 1976.
19. LYNCH, Kevin - "La imagen de la ciudad". Ediciones Infinito. Buenos Aires, 1974.
20. MILLS C. Wright - "A imaginação sociológica". Zahar Editores. Rio de Janeiro, 1982.
21. RANDOLPH, Rainer, BESSA, Eliane, e COSTA, Alexandre - " Meio ambiente e análise territorial: sugestões metodológicas e instrumentais. Uma reflexão a partir da problemática do tombamento da Mata Atlântica e suas consequências para o distrito Lumiar do Município de Nova Friburgo/RJ". Publipur, seie Estudos e Debates. Rio de Janeiro, No. 47, novembro 1991.
22. REZENDE, Vera - "Planejamento urbano e ideologia: quatro planos para a cidade do Rio de Janeiro". Editora Civilização Brasileira, Rio de Janeiro, 1982.
23. RUDOLFSKY, Bernard - "Arquitectura sin arquitectos". Editorial Universitária de Buenos Aires. Buenos Aires, 1976.
24. SANTOS, Carlos Nelson Ferreira dos (coord.) - "Quando a rua vira casa". Projeto Editores Associados Ltda. São Paulo, 1985
25. SINGER, Paul - "Economia política da urbanização". Editora Brasiliense. São Paulo, 1985.
26. TOPALOV, Cristian - "La urbanización capitalista". Edicol, México, 1979.
27. TORRES Ribeiro, Ana Clara - "Comunicação, tecnologia e sociedade: novas tendências no Rio de Janeiro". Proposto à Revista SIAP, 1990.
28. VALLADARES, Lícia do Prado - "Passa-se uma casa". Zahar Edires. Rio de Janeiro, 1980.
29. VELHO, Gilberto - "Individualismo e cultura: notas para uma antropologia da sociedade contemporânea". Editora Jorge Zahar. Rio de Janeiro, 1987.
30. Ibidem - "O desafio da cidade. novas perspectivas da antropologia brasileira". Editora Campus Ltda. Rio de Janeiro, 1980.
31. Ibidem e VIVEIROS de Castro, Eduardo - "O conceito de cultura e o estudo de sociedades complexas". IN: Espaço: Caderno de Cultura, USU----, 1980.
32. YI-Fu Tuan - "Espaço e lugar (A perspectiva da experiência)". Editora Difel, São Paulo, 1983.

SPECIFIC BIBLIOGRAPHICAL REFERENCES

1. ADAMOLI, J. "Reflexiones sobre la aplicación de un sistema de alarma en el río Paraguay". IN: Boletín de Medio Ambiente y Urbanización. IIED.
2. ALLEN, Elizabeth - "Political responses to flood disaster: the case of Rio de Janeiro, 1988". - Trabalho apresentado no encontro da International Sociological Association. Paris. Julho, 1990.
3. BEATE, Frank - "El tratamiento del problema de las inundaciones en la cuenca de Hajaí". IN: Boletín de Medio Ambiente y Urbanización, IIED, año 8, número 30, 1990.
4. BÉDARIDA, Marc - "Politique urbaine et habitat ouvrier en France au lendemain de la première guerre mondiale: l'exemple de Reims". Trabalho apresentado no encontro da International Sociological Association. Paris. Julho, 1990
5. BRUNSTEIN, F. e LUCESOLE, E. "Inundaciones en el noroeste bonaerense ". IN: Boletín de Medio Ambiente y Urbanización IIED.
6. BUENO, Laura Machado de Mello - "Material risk situation in housing settlements in São Paulo". - Trabalho apresentado no encontro da International Sociological Association. Paris. Julho, 1990.
7. CAPPATO, J. " Seguirán agravándose las inundaciones ?" - IN: Boletín de Medio Ambiente y Urbanización, IIED,
8. Coordenação Geral do Sistema de Defesa Civil (COSIDEC) - "Plano de Verão". COSIDEC . Rio de Janeiro, dezembro 1987.
9. DOS SANTOS, C. - "Efectos de una resolución sobre evaluación del impacto ambiental en Brasil". IN: Boletín de Medio Ambiente y Urbanización, IIED,
10. DRABEK, Thomas E. - "Human system responses to disaster. An inventory of sociological findings". Springer-Verlag. New York Inc., New York, 1986.
11. ESPINOZA, Guillermo A. - "El manejo de los desastres naturales: conceptos y definiciones básicas aplicadas a Chile". IN: Boletín de Medio Ambiente y Urbanización. IIED año 8, número 30, 1990.
12. FEDEROVISKY, Sérgio. " Influencias de la urbanización en un desastre: el caso del Area Metropolitana de la ciudad de Buenos Aires ". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.

13. FUENTES, Gustavo - "Análisis de la vulnerabilidad ante desastres naturales usando como ejemplo la erupción en el complejo volcánico Longuimay". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
14. GARCIA, Jorge - "Los desastres naturales afectan mas a los pobres". Trabalho apresentado no Seminário "El Impacto Sócio-Económico y Ambiental de las Catástrofes Naturales en las Economías Regionales y en sus Centros Urbanos". Santa Cruz, Bolívia, 1984.
15. GORLERI, M. - "Las inundaciones y el paisaje chaqueño, una historia repetida". IN: Boletín de Medio ambiente y Urbanización. IIED,
16. GORLERI, M e Polo, G. - "La inundación y sus impactos en la provincia de Formosa". IN: Boletín de Medio Ambiente y Urbanización, IIED,
17. Governo do Estado do Rio de Janeiro (Secretaria de Estado de Meio Ambiente, Superintendência Estadual de Rios e Lagoas "Avaliação das Precipitações Pluviométricas de Fevereiro de 1988 nos Municípios do Rio de Janeiro e Petrópolis". Superintendência Estadual de Rios e Lagoas. Rio de Janeiro,
18. GUARANY, Reinaldo - "Rio de Fevereiro: chuva, suor e tristeza". IN: Revista Pensar e Fazer. Secretaria Municipal de Desenvolvimento Social. Rio de Janeiro, No. 1, 1988.
19. HERZER, Hilda - "Los desastres no son tan naturales como parecen". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
20. Ibidem e FEDEROVISKY, Sérgio - "Algunas conclusiones a partir de tres casos de inundación". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 7, 1989.
21. HOGAN, Daniel Joseph - "Migration dynamics and response to environment disaster: residents vs. commuters in Cubatão Brazil". Trabalho apresentado no encontro da International Sociological Association. Paris. Julho, 1990.
22. HUERTAS, Ebroul - "Acciones y enseñanzas del trabajo en la reconstrucción de Armero". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
23. HULSE, Joseph e ESCOTT, Vivien - "Las sequías - inevitables, impredecibles". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
24. LEITE, Luiz Edmundo Costa - "Recent Rio flash flood". Secretaria Municipal de Obras. Rio de Janeiro, 1988.

25. LEWIS, James. "Risk, vulnerability and survival". IN: Local Government Studies, . July/August, 1987.
26. Ministério do Interior (Superintendência de Desenvolvimento do Nordeste). "Plano de defesa civil, 1988, região nordeste. Superintendência de Desenvolvimento do Nordeste, 1988.
27. NEIF, Juan e PATINO, Carlos - "Plan de desarrollo de áreas anegables e inundables del chaco oriental". IN: Boletín de Medio Ambiente y Urbanización, IIED, año 8, número 30, 1990
28. OLIVEIRA, Jane Souto e SYDENSTRICKER, Iara - "Quanto custa ser (e deixar de ser) desabrigado no Rio?". IN: Revista Pensar e Fazer. Secretaria Municipal de Desenvolvimento Social Rio de Janeiro, No. 1, dezembro, 1988.
29. Organização Mundial da Saúde - " A atuação do pessoal local de saúde e da comunidade frente aos desastres naturais". Organização Mundial de Saúde, Genebra, 1989.
30. Organização Mundial de Saúde - " Housing and Health. An agenda for action". Organização Mundial de Saúde. Genebra, 1987.
31. PABLOS, Thierry de - "Le mondations de Guayaquil: catastrophes ou normalites?" Trabalho apresentado no encontro da International Sociological Association. Paris. Julho, 1990.
32. RODRIGUEZ, Alfredo - "Desastres urbanos, fenomenos no-naturales". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
33. ROUDE, F. "Inundaciones en el sudeste de Formosa". IN: Boletín de Medio Ambiente y Urbanización. IIED,
34. ROZE, J.B. " Aporte para la solución del problema de las inundaciones". IN: Boletín de Medio Ambiente y Urbanización. IIED,
35. RUBIO, C. - "Encuesta socio sanitaria y de atención médica en albergues de inundados". IN: Boletín de Medio Ambiente y Urbanización, IIED
36. SANCHES, Vicente - "Tecnologia y riesgo ambiental". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 7, 1989.
37. SANTA FE, Patricia de e PENNESI, Amanda - "Propuesta para mitigar catástrofes por inundaciones. Estudio de caso: Cuenca Arroyo Saladillo". IN: Boletín de Medio Ambiente y Urbanización. IIED., año 8, número 30, 1990.

38. SISSON, Rachel e REIS, José de Oliveira - "As inundações do Rio de Janeiro". IN: Revista Municipal de Engenharia. Prefeitura da cidade do Rio de Janeiro. Vol. XLI, jan/dez, 1990 .
39. TEMPLE, Eduardo Franco - "El "desastre natural" en Piúra, Perú, 6 años después. Conciencia y voluntad". IN: Boletín de de Medio Ambiente y Urbanización. IIED, año 8, número 30, 1990.
40. TENAN, C. Luiz - "Calamidades Naturais". Ministério da Agricultura. Superintendência Nacional de Abastecimento.
41. ZICCARDI, A - "Desastres y reconstrucción. México". IN: Boletín de Medio Ambiente y Urbanización. IIED, año 7, 1989.