

# PROVENTION CONSORTIUM

## Community Risk Assessment and Action Planning project

### VENEZUELA – la Vega, Caracas



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## Pilot Study of Community Based Disaster Management Strategy for Earthquakes

CRA Toolkit  
CASE STUDY

This case study is part of a broader ProVention Consortium initiative aimed at collecting and analyzing community risk assessment cases. For more information on this project, see [www.proventionconsortium.org](http://www.proventionconsortium.org).

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Click-on reference to the **ReliefWeb country file for Venezuela:**  
<http://www.reliefweb.int/rw/dbc.nsf/doc104?OpenForm&rc=2&cc=ven> .

**Note:**

A Guidance Note has been developed for this case study. It contains an abstract, analyzes the main findings of the study, provides contextual and strategic notes and highlights the main lessons learned from the case. The guidance note has been developed by Dr. Ben Wisner in close collaboration with the author(s) of the case study and the organization(s) involved.

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## 1 Introduction:

The present final report summarizes the results of a pilot project dedicated to the construction of collective strategies, among experts, community leaders and institutional representatives, in the community preparation for seismic disasters that it was developed from July to September, 2004, at request of the Japan International Cooperation Agency (JICA) team in charge of elaborating the Basic Plan for the Prevention of Disasters in the Metropolitan District of Caracas.

Technical studies developed by JICA estimate that, before the repetition of an earthquake like the one happened in the city of Caracas in 1967, the prospective number of damaged housings would be superior to ten thousand units (Table - 1). The pilot project presented here, complement the works of characterization of the main hazards and levels of physical vulnerability of the study area, determining mechanisms to promote strategies for the collective facing of the seismic risk that could be pertinent for the specific context that characterizes communities located in the study area.

The nature of the previously exposed problem pushed to adopt a methodological strategy based on three central activities. The first one of these included a vast documental revision of existent materials on the topic in the Centre of Documentation for Disasters (CRID) that maintains the " United Nations International Strategy for Disasters Reduction" ERID/ONU in San José, Costa Rica; in the Virtual Library on Disasters of the Pan-American Health Organization (PAHO); and, in the library of the Centre of Studies on Disasters (DRC) of the Social Sciences School of the University of Delaware. As second aspect, diverse exercises were developed: diagnostic collective construction and strategies based in techniques as the depth interview, the "Disaster Imagination Game", The Stakeholder Analysis and the Town Observation where we had the active participation of community representatives, as institutions for preparation in disaster cases. Finally, a discussion with national and Latin Americans high level experts in the topic of the social organization for disaster cases, which were summoned to a discussion and reflection workshop, developed in Caracas the 26<sup>th</sup> and 27<sup>th</sup>, July. The description and the specific results of each one of these activities are presented as annexes of the present report.

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The character of pilot study that has been given to the present effort shows, among other things, the complexity of central purpose. The seldom previous references in similar works on the topic and the relative few time we had for the tasks of gathering of information and maturation of results.

Therefore, to mention an example, if it is accepted the character of efforts of long encouragement that demands the community preparation for disasters, and if we recognize the high rotation of officials and the consequent volatility of the institutional initiatives for the community preparation that characterizes the public institutions responsible for the civil protection and disaster prevention, then *¿How is it possible to implement sustainable programs of community preparation for disaster cases from the institutions?*. This is the kind of paradoxes that we have tried to explore and solve in the present effort.

Finally we want to make clear that, although for the work team involved in this project, many of the obtained results constitute contributions for the institutions that work with the community organization for disaster cases, we understand and we accept that it would be ostentatious and a little realistic on our behalf to sustain that the present work constitutes a completed product that solves the problem completely. Still there are tasks to be developed to deepen and tune the results here exposed. An interesting element that we found in our investigation and that corroborates the here exposed are the results of the study denominated "Disaster Resistant Communities Initiative", study<sup>1</sup> that, based on the technique of the "focus group", was developed during **2 years** by the "Centre of Studies on Disasters" of the University of Delaware UD-DRC, by request of the Federal Agency for the Handling of Emergencies "FEMA", and in whose conclusions the necessity of other additional studies is also suggested in order to deepen some of the obtained results.

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<sup>1</sup>The complete results of these studies are annexed to the present report, in spite or recognizing that the social and institutional contexts in which were developed make the results not very applicable in the case of Caracas.

**Table 1-Prospective number of damaged housing in the Caracas' 1967 seismic scenario**

<i>MUNICIPALITY</i>	<i>PARROQUIA</i>	<i>POPULATION</i>	<i>TOTAL HOUSES</i>	<i>EXPECTED DAMAGES</i>
Libertador	ALTAGRACIA	39.291	2.066	68
Libertador	ANTIMANO	127.708	21.958	987
Libertador	LA CANDELARIA	53.473	1.901	56
Libertador	CARICUAO	143.048	11.174	242
Libertador	CATEDRAL	4.831	706	16
Libertador	COCHE	51.029	6.103	141
Libertador	EL JUNQUITO	38.005	10.384	347
Libertador	EL PARAISO	99.208	9.617	316
Libertador	EL RECREO	96.162	9.588	368
Libertador	EL VALLE	134.503	17.872	701
Libertador	LA PASTORA	80.188	11.331	479
Libertador	LA VEGA	122.189	16.209	521
Libertador	MACARAO	43.191	8.853	218
Libertador	SAN AGUSTIN	40.840	4.637	224
Libertador	SAN BERNARDINO	24.031	2.586	117
Libertador	SAN JOSE	36.269	2.626	186
Libertador	SAN JUAN	93.076	11.610	528
Libertador	SAN PEDRO	56.373	5.175	75
Libertador	SANTA ROSALIA	105.123	16.576	515
Libertador	SANTA TERESA	18.987	853	25
Libertador	SUCRE	352.040	54.448	2329
Libertador	23 DE ENERO	76.721	5.907	224
Chacao	CHACAO	64.629	6.524	107
Sucre	PETARE	354.531	46.821	874
Sucre	CAUCAGUITA	50.348	7.533	93
Sucre	FILA DE MARICHE	26.461	5.126	39
Sucre	LA DOLORITA	59.966	9.657	122
Sucre	LEONCIO MARTINEZ	55.460	6.766	102

\* Results from Seismic Study of Caracas. JICA

\*\* Expected Damage = N° of Damage Houses, referred in the same study

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## 2 Reference Framework:

Although it is certain that the call to the approach of the community aspect for the reduction of the disasters has been always claimed, there are few existent experiences that have suggested concrete mechanisms to achieve an effective and participative approach to the problem of community preparation as part of integral initiatives dedicated to risks reduction.

The incipient character of this kind of initiatives, from the institutions of disasters cases preparation, forces to describe previously some crucial aspects that serve as referential framework for the construction of the strategies and the recommendations that have arisen by the light of this work.

Some of the aspects and presumptions that we consider crucial to make it clear as purpose of this study are mentioned next.

### 3.1. Definition of the problem and context conditions.

It is possible to check that in the last 15 or 20 years there have been numerous initiatives of community preparation for disaster that have been promoted at nationally and regionally (the inventory of training material for disasters cases, presented as an annex of this report, prove it), as much as for national actors as for foreign actors. Paradoxically the results obtained after this important effort, in terms of self-protection programs for disaster cases sustainable in time<sup>2</sup> and of successful experiences of prepared communities for disaster cases are insignificant.

Several are the possible reasons for this problem. At first sight, it seems a lost link in the chain; a missing step. To identify this possible missing element, the studies of social vulnerability and of successful experiences of community preparation that JICA prepared in 2003, are illustrative. In these works, and in particular in the preliminary definitions useful to identify the three successful experiences that were studied then, it can be proven that, without detriment of the incidental support that could have received the studied

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<sup>2</sup>we refer here to the existence of local programs, of permanent character, with at least 3 years of continuous work in the same community

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communities (La Floresta, Catuche and Anauco) on the part of the institutions, **the bases of the capacities that had been possible to build, were centre essentially in the sustained effort of the communities.** In all cases it was possible to evidence that the organized communities were, and in particular their endogenous leadership, the promoters and administrators of disasters cases preparation processes.

The previous conclusion can tempt us to direct from the present study to the production of materials, strategies and manuals directed essentially to the communities, so that these are able to replicate other successful experiences of disasters cases preparation. However, the fact that present effort has been developed within the elaboration of the Disaster Prevention Master Plan in Caracas Metropolitan District, (plan that has as central axis the definition of a series of recommendations and specific measures directed to the institutions responsible for the urban administration of this city), forces us to channel the efforts here developed so that they are used, essentially, for the institutions responsible for programs of disasters reduction; and very particularly for those institutions whose line of work forces them to develop initiatives in which the direct participation of the communities is outstanding. So now we reiterate that the **primary client of this effort, are the institutions.**

It is convenient to clarify that the character of "primary client" settled down previously doesn't close the possibility that some of the products we arrived to, can be good for the community actor. In fact, both the audiovisual material produced as the "Manual for the Communities" that we present here, constitute useful tools for the communities, however these products are conceived on one of the basic results picked up during the project: **The condition for any disaster cases community preparation program to work... is that the community is organized, has an endogenous leadership and is interested in the topic.** The community organization is not an optional element for the institutions; it is a necessity, a requirement "sine qua non" for the institutions; hence the relevancy to include the products referred to the communities without being inconsistent with the idea that the clients of this effort are the institutions<sup>3</sup>.

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<sup>3</sup> Along the work, additional results of the study will be presented that demonstrate how the work with the communities constitutes a mechanism of survival for the disaster cases preparation programs that are gestated inside the institutions.

Another outstanding aspect that should be highlighted is the following: The community organization as problem is not an exclusive topic for the disaster cases preparation. The community organization underlies in the base of most, if not of the entire, of the serious urban problems that characterize the current Venezuelan society (health, solid waste management, public services, crime rate, education, etc.). Otherwise, the community organization as a problem reveals itself like the base to consolidate a better country model.

In spite of that, it is a certain fact that **no public institution<sup>4</sup> is devoted to do community organization "per se"**. The public institutions that develop or have developed some type of community organization work in the country always make it in the framework of the application context that is pertinent. So that, although the products that from now on will be present are oriented to the topic of the community organization for disasters cases preparation. We believe that good part of the recommendations and results to that we arrived at, with very little effort, could be applicable to other institutional scenarios.

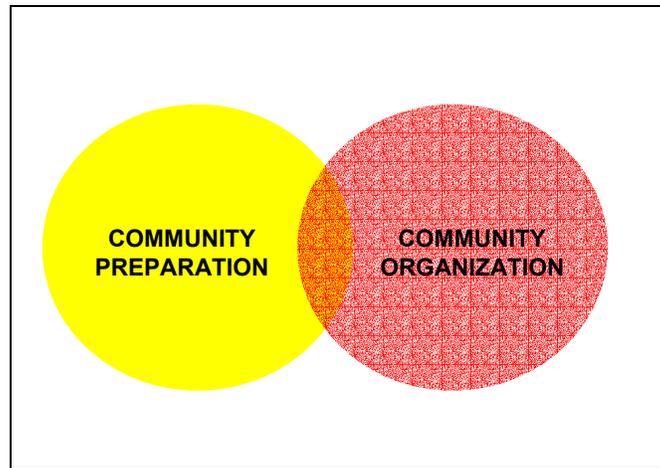
### **3.2. Community organization vs the preparation for disaster cases**

As it was mentioned in the introduction, during the documental revision carried out for the present work (particularly the one carried out in Costa Rica Regional Centre on Disasters Information and in the Virtual Library on Disasters of the Pan-American Health Organization), a great quantity of documents, manuals and methodological guides directed to the community organization for disaster cases was founded (See Annex VI). However, when revising and contrasting these materials with the results and with the expectations raised in the workshops "*Collective construction of disaster reduction strategies*" that we developed with the communities, we are able to understand that there is an important difference in what is the establishment of protocols to consolidate community organization for disaster cases and the establishment of protocols to prepare the communities for disaster cases.

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<sup>4</sup>It is worth to highlight here that, although it is recognized that some social organizations (Center Gumilla, CESAP, etc.) develop this type of work all these operate as ONG,s or similar and not like public institutions attributed at the different government levels

**Figure 1- Protocols of Comunitarian Organization and Preparation**



Although it is certain that the line that divides these two topics is very thin (at times dotted), and sometimes overlap (Figure 1), it's worthwhile, according to the results of the study, to establish some basic differences. The identification of community protocols for disaster cases preparation constitutes the most operational and instrumental side in the preparation work. In this are included specific recommendations about how to: fight fires, assist the victims, carry out evacuations, develop basic rescue and salvage works, and in general all those instrumental aspects commonly associated to the communities' self-protection in disaster cases. This topic is, without a doubt, the dominant paradigm of the existent bibliography.

The second of the identified themes is constituted by topics ace that of the strengthening of the community organization, the endogenous leadership and a minimum level of interest of the community in the preparation for earthquakes cases, as elements that served of "foundations" to the methodologies for the community preparation for disaster cases that we described in the previous paragraph. This second topic, is taken for granted in the entirety of the mentioned technical publications. In these it is assumed that there is an organized entity inside the communities that have a great interest in the topic of disaster cases preparation and that they have some consolidated leaders in the community, but submissive before the institutions, waiting and willing "to accept" the recommendations that the technicians are willing to offer them regarding the disaster cases preparation.

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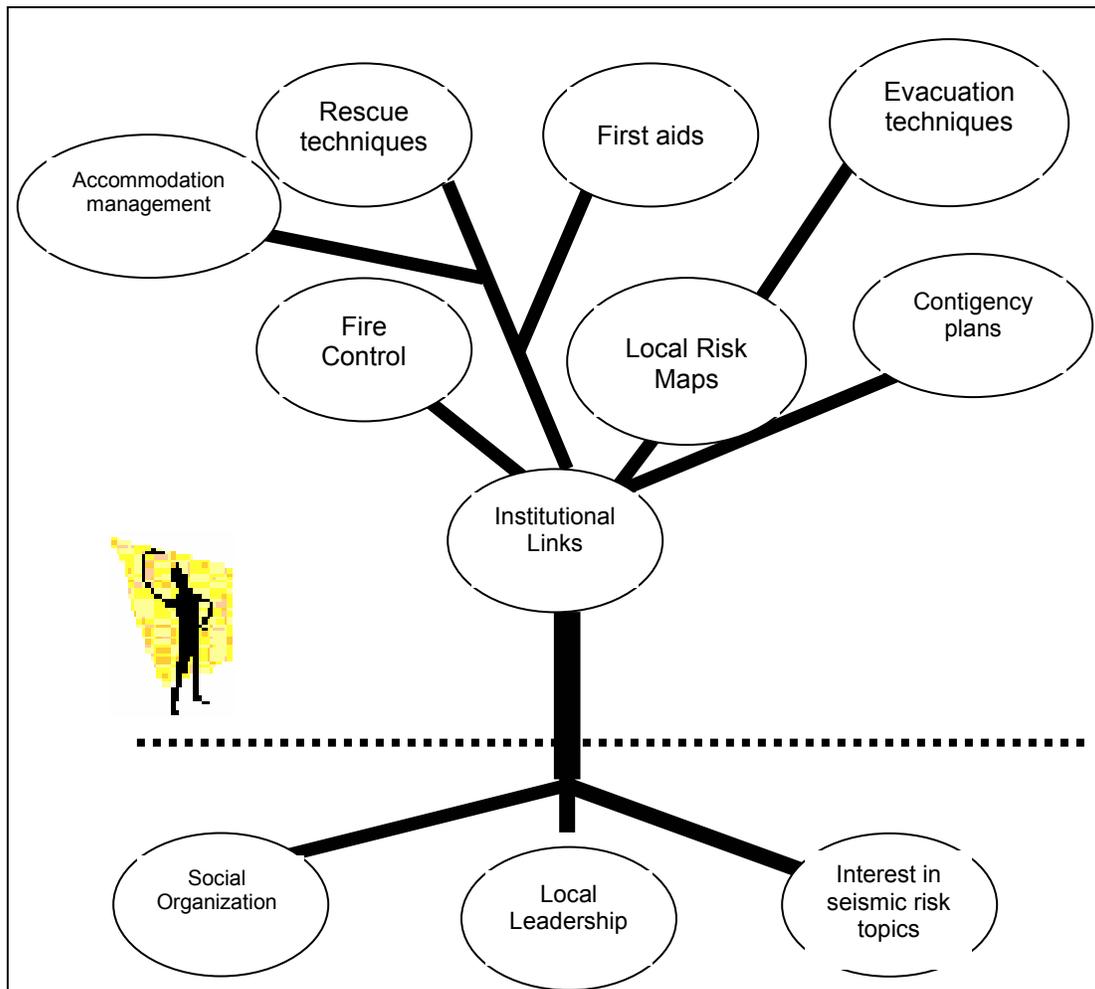
These presumptions constitute a myth that should be discussed within the institutions that develop programs of community preparation for earthquakes cases.

Assuming that in principle the community organization for disaster cases **exists** "per se" it seemed to have motivated the failure of many of the institutional initiatives for disaster prevention that have been implemented either in Caracas metropolitan area or in the rest of the country. On this aspect, in one of the workshops developed with Los Lanos community it was mentioned the following:

*"(The institutions)... frequently tend to start the house by the roof. They build the columns and the walls without making the foundations first... they are an example of bad practice in the construction of social capacities."*

This sentence, excessively eloquent, picks up and summarizes in our opinion, what constitutes the lost link of the community programs for disaster cases preparation that we referred before and that until now have reigned in the institucionality responsible for the development of these programs at national level. (Figure 2)

**Figure 2– Communitarian preparation programs vs. Community**



These facts validates the initial intention of this study and the obtained results make us realized that, while the institutions of community preparation for disaster cases don't understand that the work of "create community organization" is previous and it conditions the success of any initiative of local preparation for disasters, in that same measure the efforts that are developed in this sense will be effective, in particular in terms of its summoning capacity, collective impact and sustainability in time.

Certainly, the obvious and immediate question that arises after the previous asseveration is: ¿how to create a communitarian organization for disaster cases from my institution? The answer to this query is not simple. In fact, the few serious works that have been

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written either by the Delaware<sup>5</sup> University as for the Social Studies on Disasters (LA RED), present results that are hard to extrapolate to Caracas urban socio-culture context. So that, to establish the preliminary strategies that are presented next, we are based essentially on the results of the collective construction workshops that we develop in communities like La Vega, Los Lanos, San Bernardino and Catuche.

### 3.3. Revision of previous initiatives:

As complement to that outlined previously, we can mention the results of the analysis of the documental information revision and that, like it was mentioned previously, it is included in the annexes of this report. The sources consulted for this analysis were the Disasters Documentation Centre (CRID) that maintains the United Nations International Strategy for Disasters Reduction ISRD/UN in San José - Costa Rica and the Virtual Library on Disasters that sustains the Pan-American Health Organization (PAHO).

It's worth to highlight that the intention of this revision, apart from allowing the preparation of a quick reference on the available documents that can possibly be used as guides for the elaboration of material for the communities self-protection, additionally tries to illustrate the great amount of information that has been elaborated and that it is at the disposal of the communities and institutions linked to the preparation for disaster cases in Venezuela as in neighbouring countries.

In the face of this abundance of information on the topic, it seemed paradoxical that is so difficult to find successful experiences of community preparation for disaster cases in most of our countries. However, a hypothesis that seemed to explain this phenomenon appears from the revision carried out by our team. In this revision it was possible to verify that although the epithet of " Community Organization Manual for Disasters Cases" appeared frequently among the available works, when revising the contents it was possible to verify that the predominant focus was oriented to serve as **Disasters Preparation Manuals** and where the definition of concrete strategies to conform ways of community organization was an absent topic.

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<sup>5</sup>It is recommended to revise the documents developed by the Centre of Studies on Disasters of the Social Sciences School of the University of Delaware that are annexed as part of this study.

In this sense, we could mention that all the documents and methodological guides that we revised about this topic, are based on three essential suppositions that are fundamental to any for disaster cases preparation proposal and that, according to the results of the investigation, erroneously are given for granted. These suppositions are:

- ***The community is interested "per se" in the topic of preparation for disasters and risk administration.***
- ***The community is properly organized***
- ***There is a community endogenous leadership able to manage the processes***

The inadequate and insufficient treatment of these three basic aspects is presented like a probable cause that a good part of the efforts developed in the elaboration of the methodological guides and manuals, doesn't have achieved the consolidation of a number of sustainable risks self-management community initiatives and preparation for disaster cases that it could be wanted.

Next, we present both the framework for the action as the concrete strategies identified along this study and that could improve the described situation.

### 3 STRATEGIES:

#### 3.4. Strategies for disaster case preparation:

According to the dictionary, the strategy definition that applies to dynamic and adjustable systems administration processes corresponds to the setting of a group of recommendations that ensure the results of an initiative. This definition, taken to our context, identifies as the dynamic and adjustable system that we referred to in the definition, the processes of community preparation for earthquakes disaster cases.

In the activities developed along the present pilot project, we were able to identify two non excluding categories of strategies that would improve the ways of executing preparation programs for earthquakes cases. One of these directed to the community actors that are interested in the topic and the other one directed to the institutions - actors responsible for programs of community self-protection for disaster cases.

Next the sequence of identified strategies:



As it is appreciated, in both cases the emphasis of the recommended activities points, more than to the definition of specific operative protocols for response in the event of

earthquakes, to the construction of conditions that propitiate community organization mechanisms able to give sustainability and follow up to the programs.

The following tables specify and detail the tasks, the justification, the specific activities suggested and the actors associated with the strategies suggested to the community actors. For more information on the specific ways for these strategies implementation revision of the annex "VII – a / b " of this report is suggested.

### 3.4.1. *Strategies for Communities:*

#### **Community Strategy 1:**

<b>STRATEGY</b>	<b>TO IDENTIFY NON EXCLUDING ORGANIZATION SPACES</b>
<b>DESCRIPTION</b>	It points to the consolidation of spaces of social representation centred in aspects of interest for all and each one of the members of the community and without excluding any of the sectors of the community.
<b>JUSTIFICATION</b>	The few successful organization experiences that exist about the preparation for disaster cases, have been given around religious, cultural, sport groups, etc. that, because they are committed with collective interest's causes in which all the citizens can participate, have allowed the convergence of all the social actors. Exception is made of the experience in community representations associated to political groups that have not been successful to consolidate initiatives, given the excluding character that the political parties used to assume with neighbours identified with different political postures and that hinders them to manifest before the institutions on behalf of "the community", without other sectors of that same community disapprove them and/or contradict them.
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• Identification of the number and types of organizations gestated inside the community.</li> <li>• To identify the participation and opening levels of the agendas discussed in those organizations.</li> <li>• To delimit the political-partisan topic of the community agenda.</li> <li>• To generate participations spaces and topics of civic convergence where the problems of the community are discussed</li> </ul>
<b>ACTORS</b>	Primarily community actors committed with the cause of the local organization. As support elements: institutional actors like NGO's, public institutions, religious, cultural, sport groups, etc.

STRATEGY	TO IDENTIFY NON EXCLUDING ORGANIZATION SPACES
<b>SOURCES</b>	<p>Investigation elements in which this recommendation is sustained, and found in the annexes of this report are:</p> <ul style="list-style-type: none"> <li>• Collective construction activities with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• Interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision.</li> </ul>

**Community Strategy 2:**

STRATEGY	TO IDENTIFY / FORM ENDOGENOUS LEADERSHIPS
<b>DESCRIPTION</b>	<p>The sustainability of all community organization is guaranteed in the condition that its leaders and fundamental “motors” are members of the same community. This fact demands the conformation of an internal leadership able to defend now and in the future, the community’s interests and positions before alien actors.</p>
<b>JUSTIFICATION</b>	<p>Although the initiatives of community organization in the beginning could be promoted by external actors (Church, NGO’s, public organisms, etc.); in general this support is always circumstantial. This fact demonstrates that the sustainability of these initiatives demands the consolidation of leaders able to maintain projects of long duration, like the disasters cases community preparation projects. On the other hand, the fact that these leaders cohabit in the community constitutes a guarantee of success since they not only put at stake their own leadership when wrapped up in those “games of power”, but rather their own acceptance like neighbours and can become direct victims of any project that they have not known to negotiate appropriately.</p>
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• Identification of the number and leadership types that exist in the community organizations.</li> <li>• To identify the individuals that for their commitment, action capacity and their credibility and trust levels are or could be leaders of organization processes and community development.</li> <li>• To train the leaders in management, human relationships, handling of groups, etc.</li> </ul>

STRATEGY	TO IDENTIFY / FORM ENDOGENOUS LEADERSHIPS
<b>ACTORS</b>	Community actors committed with the cause of the local organization, leaders of other consolidated communities that can lend their support and experience to incipient local organizations, institutional actors, NGO's, etc.
<b>SOURCES</b>	Investigation elements in which this recommendation is sustained and found in the annexes of this report are: <ul style="list-style-type: none"> <li>• Collective construction activities of with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• Interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision.</li> </ul>

### **Community Strategy: 3**

STRATEGY	TO SOW CONCERN FOR THE EARTHQUAKE PROBLEM
<b>DESCRIPTION</b>	The approach to the problem of the community's disasters reduction should be given in a gradual and reserved way. This topic should not be "forced" inside the community agenda and the tasks that can be developed in this sense should be felt as necessary and requested from within the communities. Successful experiences as that of Catuche in Caracas and San Cayetano in Colombia recommend emphasizing the risk topic with a marked local sense (centered in their rivers, in their banks, in the evacuation routes of their urbanization or neighborhood, etc.) and to be sustained in concrete examples of easy implementation that illustrate ¿How the preparation for earthquakes cases would impact in the improvement of the life quality of the community? (See annexes)
<b>JUSTIFICATION</b>	Within the multiple necessities with which the communities cohabit day by day, in particular those of the lowest socioeconomic stratum, the preparation for disaster cases not always constitute a priority in the community agenda. Then, It is convenient that this topic (in particular regarding the prevention and mitigation aspects) it's created in a gradual and restrained way (unless the hazards / vulnerability scenarios are absolutely notorious ON BEHALF OF THE NEIGHBORS <sup>6</sup> ). In this gradual approach it is

<sup>6</sup> It is illustrated here as an example the case of Los Lanos community of and the San Cayetano case that are documented in this work and where the risks exposition levels are so notorious that the topic of being prepared for disasters cases has become part of the neighbours daily agenda

STRATEGY	TO SOW CONCERN FOR THE EARTHQUAKE PROBLEM
	convenient, more than theorize about risk or the world disasters problems, to emphasize risk elements of local character as the river, or the collapse areas of their environment, as well as to give concrete examples on how the risk administration, besides preparing for the disaster, impacts in the improvement of the life quality of the community
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• Identification of the relevancy of the risk topic within the priorities that should be taken care of in the community agenda.</li> <li>• To gather and present experiences of emergency situations and disasters in the community happened in the past.</li> <li>• To identify the concrete examples of simple community tasks in the topic of the prevention and mitigation of disasters that could be implemented and improve the quality of the residents' life.</li> <li>• To propitiate encounters with other community organizations with experiences in disasters reduction.</li> </ul>
<b>ACTORS</b>	Community actors committed with the preparation for disaster cases, Civil Protection institutions, Firemen, ONG's, Rescue Groups, etc. that have programs of community preparation for emergency and/or disasters cases.
<b>SOURCES</b>	Investigation elements in which this recommendation is sustained: <ul style="list-style-type: none"> <li>• Collective construction activities with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• Interviews with institutional actors</li> <li>• Interviews with experts.</li> </ul>

**Community Strategy Number: 4**

STRATEGY	TO GATHER AND TO CIRCULATE PREVIOUS INFORMATION
<b>DESCRIPTION</b>	Once the topic of preparation for earthquakes cases has been inserted gradually in the community, it is convenient to gather and circulate among the community, all the possible technical information about the exposition levels to hazards and/or vulnerability degrees that characterize it. These works can be found in universities, public institutions, investigation centres, etc. When the technical level requires it, specialists should be called to present in a simple, rigorous and responsible way, the risk levels

STRATEGY	TO GATHER AND TO CIRCULATE PREVIOUS INFORMATION
	described and the implications and community commitments demanded.
<b>JUSTIFICATION</b>	The field information gathered, indicates that, in the country, exists an important number of seismic risk diagnoses, however many of these works rest in institutions, and the communities doesn't know them. Therefore, the belief that the results of the existent seismic risk micro-zonation studies should be managed in a confidential way by specialists' groups or high government officials must be abandoned. These results should be published, reproduced and put at the population's disposal. When the technical level requires it, people of the community and/or the officials facilitators of this process, will locate the support of specialists who should present in a simple, rigorous the information
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• Identification, hazards and vulnerability diagnoses that could have been developed in the community and/or in their bordering areas and that could exist in the files of universities and/or institutions.</li> <li>• To discuss with the community the diagnoses of seismic risk that could exist.</li> <li>• To contact experts from universities, institutions and investigation centres that can support in the responsible diffusion of the risk levels in the community.</li> </ul>
<b>ACTORS</b>	Community leaders committed with the preparation for disaster cases, Civil Protection institutions, Firemen, NGO's, Rescue Groups, etc. that have programs of community preparation for earthquakes cases, investigators and academics of universities and investigation centres committed with the social
<b>SOURCES</b>	Investigation elements in which this recommendation is sustained: <ul style="list-style-type: none"> <li>• Collective construction activities with communities.</li> <li>• Interviews with successful communities.</li> <li>• Interviews with experts</li> <li>• Documental revision</li> </ul>

**Community Strategy Number: 5**

STRATEGY	TRAINING FOR THE LOCAL ADMINISTRATION OF COMMUNITY PROGRAMS FOR DISASTERS PREPARATION
<b>DESCRIPTION</b>	To guarantee the continuity of the programs of community preparation for disaster cases, it is necessary that the organized communities become involved and "take possession" of the programs administration. This task demands the development of local capacities that allow its direct participation in the planning, organization, managing

STRATEGY	TRAINING FOR THE LOCAL ADMINISTRATION OF COMMUNITY PROGRAMS FOR DISASTERS PREPARATION
	and control of the programs being developed.
JUSTIFICATION	One of the most important problems that impede the sustainability of the programs of community preparation for disaster cases is the high rotation of officials and the consequent volatility of the institutional initiatives that characterizes the public institutions responsible for the civil protection and disaster prevention. This fact has propitiated that many efforts for the community preparation in earthquakes cases get lost. A mechanism that has been suggested to improve this situation is propitiating the combined administration of the preparation programs, which implies handling over to the community all the materials and technical resources of the programs, besides qualifying them so that they know how to make use of the resources.
ASSOCIATE TASKS	<ul style="list-style-type: none"> <li>• To train communities' leaders so that they know how to administrate the preparation programs for disaster cases promoted by the institutions.</li> <li>• To give to the communities the different materials (manuals, databases, training material, etc.) that allow them to manage their own programs of community preparation.</li> <li>• To identify and prepare neighbours with technical and professional expertise (firemen, rescuers, doctors, nurses, etc.) that allows them to support the development of community disasters preparation programs.</li> </ul>
ACTORS	Directors and training managers of institutions like: Civil Protection, Firemen, Rescue Groups or others that have programs of community preparation for emergency / disasters cases; community leaders committed with the preparation for these cases.
SOURCES	Investigation elements in which this recommendation is sustained and annexed to this report are: <ul style="list-style-type: none"> <li>• Collective construction activities with communities.</li> <li>• Interviews with successful communities.</li> <li>• Interviews with experts</li> <li>• Documental revision.</li> </ul>

**Community Strategy Number: 6**

STRATEGY	CONTROL OF POTENTIAL DISTURBING AGENTS
DESCRIPTION	Once the preparation program for disaster cases is consolidating within the community, it is important that they take steps to maintain the control of its own growth process and

STRATEGY	CONTROL OF POTENTIAL DISTURBING AGENTS
	consolidation on the topic. The role and the participation of third parties after having consolidated the effort should be controlled, in order to avoid unnecessary jamming and/or counteractive effects.
<b>JUSTIFICATION</b>	The experience gathered points to that, once a community initiative begins to consolidate and to be recognized as successful (not only in the topic of the disasters preparation), several external actors approach with offers that could be oriented to take advantage of the developed work and to try to sold themselves as “promoters” of the initiative. Other experiences show that in occasions the political groups want to take possession of the collective spaces in order to make proselytizing activities. Although it is certain that the communities should not close themselves before help offers to the local initiatives on behalf of external actors, if it is advisable to define and control the participation of these third parties in order to avoid unwanted effects in the future.
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To maintain the control of the local organization activities in the community.</li> <li>• To define and to control the participation of third parties.</li> <li>• To request references of other communities on previous experiences with these third parties.</li> </ul>
<b>ACTORS</b>	Leaders and community actors committed with the preparation for disaster cases.
<b>SOURCES</b>	Investigation elements in which this recommendation is sustained: <ul style="list-style-type: none"> <li>• Collective construction activities with communities.</li> <li>• Revision and interviews with successful communities..</li> </ul>

### 3.4.2. *Institucional Strategies:*

Subsequently we will proceed to specify, in the same way, the tasks, justification, specific activities and associate actors, regarding the strategies suggested for institutional actors. For more information on the specific ways to implement these strategies it is suggested to revise the “annex VII-c” of this report.

#### *Institutional Strategy Number: 1*

STRATEGY	TO APPROACH AND TO COEXIST WITH THE COMMUNITIES
<b>DESCRIPTION</b>	Any project of interest for, and / or that it implies some intervention level in the communities, should contemplate a sufficiently extensive period of time so that his

STRATEGY	TO APPROACH AND TO COEXIST WITH THE COMMUNITIES
	designers can understand the communities that will be direct or indirect beneficiaries (or victims) of their propositions <sup>7</sup> . This approach should be open, horizontal, with an appropriate duration and preferably based on the techniques that are used in social work, sociology or anthropological investigation.
<b>JUSTIFICATION</b>	<p>The urban communities in general and the neighbourhoods in particular, are spaces where complex and different economic, social and cultural dynamics exist. These differences often express in a not very perceptible way from outside (solidarity and power underground nets, organization forms, informal leadership mechanisms, etc.).</p> <p>Every community preparation project for earthquakes cases, goes by the previous knowledge (and in particular for the <b>recognition</b>) and strengthening of those dynamics. The technocratic pretence of being able to transplant solutions to the communities without knowing the elements that underlie in their operation implies the generation of impertinent and brief proposals that generally in nothing contribute.</p>
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To register the requirement that the designers of community programs are involved previously to the development of their proposals with each one of the communities to be intervened.</li> <li>• To train the officials responsible for the elaboration of community programs on the principles and general techniques of the qualitative investigation.</li> </ul>
<b>ACTORS</b>	Directors, training Managers and Civil Protection officials, Firemen, Rescue Groups or others that develop community preparation programs for cases of emergency / disasters.
<b>SOURCES</b>	<p>Elements of the investigation where this recommendation is sustained:</p> <ul style="list-style-type: none"> <li>• Activities of collective construction with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• Interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision.</li> </ul>

***Institutional Strategy Number: 2***

STRATEGY	EXTRACTION AND CONTEXT ANALYSIS AND MEANINGS
<b>DESCRIPTION</b>	Once culminated the period of coexistence, the technicians in charge of designing the

<sup>7</sup> On this topic it is suggested to revise the annex x of this report on Ulrich's Critical Heuristic Approaches for the Design of Social Systems

STRATEGY	EXTRACTION AND CONTEXT ANALYSIS AND MEANINGS
	preparation programs for earthquakes disasters cases should make a summary of the elements of this social, economic and cultural reality that should be included in their design proposals. For this work it is convenient to request support from community actors' and/or people with experience in socio-cultural characterization.
<b>JUSTIFICATION</b>	The necessity to approach the designers of community preparation programs (and in general of any other type of social systems) it is sustained in that the planners no only should be self-reflexive on the technical rigorousness of their propositions, but rather they should also be able to infer the impact of their proposals in the communities, and this task demands to have at hand a most complete characterization possible of the trial elements that they could deprive in the valuation of its proposals that the communities executed.
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To qualify the officials responsible for the elaboration of programs of community preparation for earthquakes cases on the principles and simple techniques of the community investigation.</li> <li>• To include a bigger participation of professionals and of contents of the social sciences in the elaboration of preparation programs for disasters cases.</li> <li>• To develop interviews with community key actors previous to the design of preparation programs for disaster cases in those communities.</li> </ul>
<b>ACTORS</b>	Primarily directors, training managers and Civil Protection officials, Firemen, Rescue Groups or others that develop programs of community preparation for cases of emergency / disasters; as well as entities of support: professionals of the social sciences and community actors.
<b>SOURCES</b>	<p>Elements of the investigation in which this recommendation is sustained and annexed to this report are:</p> <ul style="list-style-type: none"> <li>• Activities of collective construction with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision.</li> </ul>

***Institutional Strategy Number: 3***

STRATEGY	ADAPTATION AND DESIGN OF PRELIMINARY PROPOSAL
<b>DESCRIPTION</b>	In this stage it should be generated a contrast between the extracted elements of design of socio-cultural character and the limits and recommendations of technical - professional character that integrate the "technical know how" of the official that will prepare the preparation program for earthquakes disaster cases. Of this contrast it should be generated a preliminary design of the program, that should be simple, of easy understanding for the community.
<b>JUSTIFICATION</b>	The lack of appropriate negotiation processes among the ways to understand and to prioritize the problem of the earthquakes disaster preparation to the internal of the communities; it has impeded the consolidation of successful processes. It is very illustrative on this point a sentence that reiteratively was repeated to us in some of the communities (Catuche, The Vega and The Lanos) with which we worked and that it sustained <i>"if the technicians don't understand that its central work is to counsel in the problems felt by the communities and to give forms to the solutions that we conceive inside the communities, we will continue to lose the effort."</i>
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To demand the use of technical and social perception variables, for the effects of the elaboration of community proposals of earthquakes preparation cases.</li> <li>• To qualify the officials responsible for the design of programs of community preparation in the use of negotiation tools among actors (Soft Systems Design Methodologies as that of Chekland, Aikoff, Ulrich, etc.)</li> <li>• To develop conversations with community actors during the preliminary design of preparation programs for disaster cases in their communities</li> </ul>
<b>ACTORS</b>	Primarily directors, training managers and Civil Protection officials, Firemen, Rescue Groups or others that develop programs of community preparation for cases of emergency / disasters. As entities of support community actors.
<b>SOURCES</b>	Elements of the investigation in which this recommendation is sustained: <ul style="list-style-type: none"> <li>• Activities of collective construction with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision.</li> </ul>

***Institutional Strategy Number: 4***

STRATEGY	VALIDATION AND COLLECTIVE ENRICHMENT WITH THE COMMUNITY
<b>DESCRIPTION</b>	It is indispensable to present to the community the proposal of community preparation for disaster cases in order to validate and to endorse the design and the content. It is fundamental that the official's attitude in this stage, instead of being centred in "go to convince" the community about the kindness of their proposition, would be to negotiate openly with it which are the possible elements that endorse or object their design and due to what reasons.
<b>JUSTIFICATION</b>	The necessity to approach the designers of community preparation programs (and in general of any other type of social systems) it is sustained in that the planners no only should be self-reflexive on the technical rigorousness of their propositions, but rather they should also be able to subject their designs to the debate with those affected by their proposals, before they are put into practice, because it is sustained that only by means of the achievement of consent among the visions of the involved and the affected, it is possible to qualify a program of "rational" and that, also, the achievement of this epithet in the terms here outlined, represents a requirement for the attainment of the established purposes for the design in their future implementation.
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To register the community validation in the elaboration of preparation proposals for disaster cases.</li> <li>• To qualify the officials responsible for the design of community preparation programs in the use of negotiation tools among actors (Soft Systems Design Methodologies as of that of Chekland, Aikoff, Ulrich, etc.)<sup>8</sup></li> </ul>
<b>ACTORS</b>	Officials of institutions (Civil Protection, Firemen, Rescue Groups, etc.) in charge of elaborating programs of community preparation for cases of emergency / disasters for the community actors.
<b>SOURCES</b>	<p>Elements of the investigation in which this recommendation is sustained:</p> <ul style="list-style-type: none"> <li>• Activities of collective construction with communities.</li> <li>• Revision and interviews with successful communities.</li> <li>• interviews with institutional actors</li> <li>• Interviews with experts.</li> <li>• Documental revision</li> </ul>

<sup>8</sup> About this topic we suggest reading the complementary materials annexed at the end of the project.

***Institutional Strategy Number: 5***

<b>STRATEGY</b>	<b>SHARED ADMINISTRATION IN THE PREPRATION PROGRAMS FOR EARTHQUAKE CASES</b>
<b>DESCRIPTION</b>	<p>Finally the officials, more than to accept, they have to promote the execution and the shared follow up of the preparation project for cases of disasters on the part of the representatives of the organized community. This, far from being a special concession that is offered to the community, constitutes a strategy that guarantees the acceptance of the project by the community, the understanding on the part of this of the inconveniences that could happen, the support of the community with their follow up, and the possibility that the same one survives anyone of the frequent jumps in the continuity of the institutions administration.</p>
<b>JUSTIFICATION</b>	<p>The predominant conception of the community participation in projects of its own interest commonly is limited to the idea of being able to mobilize an existent cheap labour, particularly in the neighbourhoods, for the realization of projects conceived by other, or as the superficial consultation of the inhabitants on its desires, without they having to pronounced about the priorities and the realization processes, these conceptions have taken failure many initiatives. For a true community's participation to exists, it is necessary that its inhabitants have the control of the processes of the projects realization The greater the control reserved to the institution, greater will be the vulnerability of the disasters preparation program facing the occurrence of any political change or of administration that could happen.</p>
<b>ASSOCIATE TASKS</b>	<ul style="list-style-type: none"> <li>• To register and formalize institutionally the co-administration of preparation projects for seismic disaster cases</li> <li>• To form to the organized communities so that they know how to administrate the preparation programs for disaster cases that are promoted by the institutions.</li> <li>• To give and to jointly evaluate with the communities the different materials (manuals, databases, training material, etc.) that will allow them to manage their own programs of community preparation.</li> </ul>
<b>ACTORS</b>	<p>Directors and training managers of institutions: Civil Protection, Firemen, Rescue Groups or others that have programs of community preparation for cases of emergency / disasters, community leaders committed with the preparation for disaster cases.</p>
<b>SOURCES</b>	<p>Elements of the investigation in which this recommendation is sustained:</p> <ul style="list-style-type: none"> <li>• Activities of collective construction with communities.</li> </ul>

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<b>STRATEGY</b>	<b>SHARED ADMINISTRATION IN THE PREPRATION PROGRAMS FOR EARTHQUAKE CASES</b>
	<ul style="list-style-type: none"><li>• Revision and interviews with successful communities.</li><li>• interviews with institutional actors</li><li>• Interviews with experts.</li><li>• Documental revision</li></ul>

### 3.5. Strategies for the implementation of popular housings reinforcement programs

#### ***Introduction:***

The topic of the seism-resistant reinforcement of the popular housings, in particular of those located inside the every time more extensive uncontrolled establishments (Figure 3) that characterize the main Latin American cities, is a problem that has been approached in multiple opportunities and by diverse actors<sup>9</sup>.

**Figure 3- Uncontrolled housing settlements**



Related to this necessity, in Venezuela as in other countries of the region, diverse investigation projects have been developed, that, based on rigorous studies and meticulous laboratory rehearsals, have allowed to consolidate technical proposals of structural reinforcement directed to mitigate the levels of vulnerability of popular housings

<sup>9</sup> To consult existent references on these works it is suggested to revise the available material in <http://www.crid.or.cr/crid/esp/index.html> and in <http://www.paho.org/Spanish/DD/PED/about-vdl.htm>.

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facing the seismic<sup>10</sup> hazards. Regrettably most, not to say all, of these works has not gone beyond the mere scientific-academic exercise and, sorely, they have had very little incidence in the implementation of political and/or of specific programs of mitigation of urban risks on the part of the institutions rectors of the housing policies.

Although the reasons of this phenomenon can be several, a causal element known by all is associated to the towering costs of a program of these characteristics that can cover the volume of the marginal sectors that require to be reinforced, cannot be assumed without a participation and important investment on behalf of the communities, and this fact forces again to study mechanisms to approach the communities in order to try to make them aware and to convince them to participate in projects of reinforcement of their housing that, apart from being expensive, commonly they are not felt as high-priority by the urban residents, and far from those that inhabit the urban sectors more depressed socio-economically and where the topic of the disasters its diluted among the multiple priorities of the day by day.

In this chapter we will present some of the results obtained in our exploration of strategies for the implementation of popular housings reinforcement projects and that we develop in the pilot project framework.

The methodological way used for this task was also based on the documental revision of existent materials on the topic, the development of workshops of collective construction and interviews with people of La Vega's communities, with professionals linked to the institutions of urban development and housing, along with the discussion with national and Latin Americans experts in the topic. For more detail, it is suggested to see annexes II, III, IV and V of the present report.

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<sup>10</sup> National examples of these investigations have been financed and published by the Institute of Materials and Structural Models of the UCV, the IDEC, the Ministry of Science and Technology, The Faculty of Architecture of the UCV and the Laboratory of Structures of the ULA

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The most important discoveries that we made on this topic are presented next:

### **3.5.1. *The individual cost – Benefit criteria.***

One of the main discoveries that we found in our inquiry is that, contrary to the collective character with the one that suggests you treat the topic of the community preparation for disaster cases, the topic of popular housings reinforcement, demands a treatment and offers an answer of individual character that depends essentially on the conditions and valuation cost-benefit that each one of the families that inhabit a neighbourhood do.

This fact demonstrates that the neighbourhoods of precarious habitat are very dynamic and heterogeneous places of life, and that it is necessary to avoid seeing them as the homogeneous spaces that its physical aspect sometimes invites to think. Indeed, the grade and the way the neighbourhoods organize are always the fruit of the histories and of the individual conditions of their inhabitants.

The above-mentioned indicates that within the common stratum of marginal areas inhabitants and in particular within the characterization of poverty that is applied to all its residents (in fact it is demonstrated that they continue inhabiting the neighbourhood and don't move to more comfortable urban areas), it allows, when looking in detail, to distinguish different stratus in which response to the requirement of investing in the housing seism-resistant reinforcement , it can vary notably, even among neighbouring houses.

In any case, in the conversations that we sustained with La Vega's and Los Lanos communities and in the experiences that were related to us by the invited experts to discuss about this topic the predominant and individual criteria to the question: ¿How much would you be willing to invest in the reinforcement of your housing?, it was the economic approach of the relationship benefit - cost, and the conceptual sustenance that we find in this case was the same one that is appreciated in the probabilistic definition of risk as mathematical hope of the loss.

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Conceptually, this definition, (that is worth to say it is the base of the financial calculation of the risk on the part of the insurance companies), sustains that the risk is the product of the occurrence probability of an adverse event for the amount equivalent to the value of the exposed elements. Taking this to the topic of popular housings structural reinforcement , the attitude that we are able to identify on behalf of the inhabitants sustains that, the greater the quantity of patrimony invested by a family in his housing, greater is his opening and bigger the amount that would be willing to invest in the reinforcement.

An important element of judgment that we try to explore before the exposed logic was the difficult topic of the valuation of the inhabitants' life. To propitiate an individual effort of this kind ¿minimizing the possibility to die or of being injured by the collapse of the housing is not a sufficiently convincing criterion? Before this query, the answer that we found was that the residents in those cases, bet to that they will have enough time to evacuate the house before it collapses. Anyhow, when one has very little or almost nothing, the important thing is to have the time to evacuate before the housing collapses... because once this happens what gets lost is very little or almost nothing.

Obviously this topic is much more complex and goes a lot beyond what we present here and it approaches deep non resolved elements of the unequal models of development and of opportunities that characterize our countries. Therefore, facing an argument as the previous one we could respond with questions as: ¿to have nothing or to have a lot maybe is an universal measure in the urban context?, Won't it be that what could represent a "*to lose almost anything*" for more suitable sectors, represents a "*to lose a lot*" or "*to lose everything*" for those more needy?. These are complex questions that deserve to be discussed but, for diverse limitations, it was not possible for us to examine it in depth<sup>11</sup>.

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<sup>11</sup> To deepen this topic refer to Lavel A. "The Disasters: A puzzle to arm" and to Maskrey A. "Disasters are not natural", both publications by Disasters Social Studies Network

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### **3.5.2. Judgement parameters for reinforcement investment.**

Supposing that the economic approach that sustains the decision of investing or not in popular housings reinforcement it was possible to identify ten parameters that impact in the economic valuation of a neighbourhood's housing. These parameters are described next:

#### ***Effort: illegal occupation***

It implies the "value" associated to the effort that the residents had to invest to achieve the illegal invasion of the lands that their housings occupy. Evidences gathered in our work shows that this effort is bigger as one moves from the centre of the urban spaces (where the interests and struggles are much bigger) toward its periphery (where the invasion process is commonly much simpler).

#### ***Effort: acceptance in community***

Simultaneously to any urban spaces occupation process by barrios, an important effort of re-adaptation of power spaces, of interpersonal negotiation, of leadership nets establishment, etc. is generated and constitutes an added value that is assumed as part of the housing value.

#### ***Basic construction materials:***

It implies the cost of the materials that are used to generate some minimum and indispensable basic conditions to make the housing habitable. Among these materials can be identified: the blocks or other materials with which they close the walls, the metallic sheets or of similar materials with which the roof is built, the cement of rustic finish that is given to the floors, etc.

#### ***Complementary construction materials:***

Due to the heterogeneity that is possible to find in the barrios, usually there are important differences in the ways how the housings finishes are presented. Although it is certain that you find in many cases single basic materials as those afore mentioned, in other cases (particularly in the most consolidated barrios) it is possible to find that the residents have

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carried out investments in friezes, ceramic, tiles, bathrooms and other interior finishes that revalue the housing.

***Costs in primary public services consolidation:***

The character of illegal occupation with which the urbanization processes are gestated in the barrios, causes that the installation of public services as water, light, served waters and roads, be in principle, developed and financed by the own inhabitants. These costs are gathered in this parameter.

***Valuation associated to the public services consolidations:***

As the barrio consolidates, the institutions that provide public services start developing investments that revalue the individual price of the housings. Domestic gas distribution nets, improvements in the roads, public illumination, and presence of police services and/or medical assistance, are only some of the elements of valuation that are gathered in this parameter.

***Basic home articles:***

It represents the value of the essential minimum furniture that is in these housings and that, according to the results of the social vulnerability study developed by JICA in 2003, it contemplates elements like a small kitchen, a small refrigerator, beds or mattresses, seats and tables, etc.

***Complementary home articles:***

Such and like it happens with the construction materials, on the base line of the minimum indispensable home appliances listed, it is possible to find important differences on this aspect within the same barrio. Therefore, televisions of medium or of great size with decoders of satellite TV, sound systems, living room, dining room or bedroom furniture, video games and computers, are some of the elements that can be found and be exposed inside the housings.

***Landing Hold:***

Of all the identified and studied parameters in this phase of the project, the most interesting element with which we meet was the topic of the holding of the land like a

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fundamental added value of the housing. Our interviews in the studied communities and the study of other Latin American experiences apparently demonstrate that however added value of any type found in a popular housing, a "sine qua non" condition for the residents to make important investments in their housing it is that they have the holding of the land.

An interesting result in this project it is the strategic importance of the holding of the land like factor of institutional negotiation to manage to get the barrios inhabitants to develop reinforcement activities. The modalities of this regularization of the holding of the land can be diverse, keeping in mind the diversity of the situations. We found that in some countries this has been carried out under the form of the gratuitous donation of the lands to the occupants; but some perverse effects of this solution have been pointed out. In other cases it has been known about experiences (Philippine experience) where their handing over is conditioned to the legalization of the occupants status regrouped in neighbours' associations, within which the prevention and mitigation can have an important role for the concession of the property titles. In all the cases, the security of the occupation statute also conditions the will, either of investing in the housings reinforcement as the access to the credit.

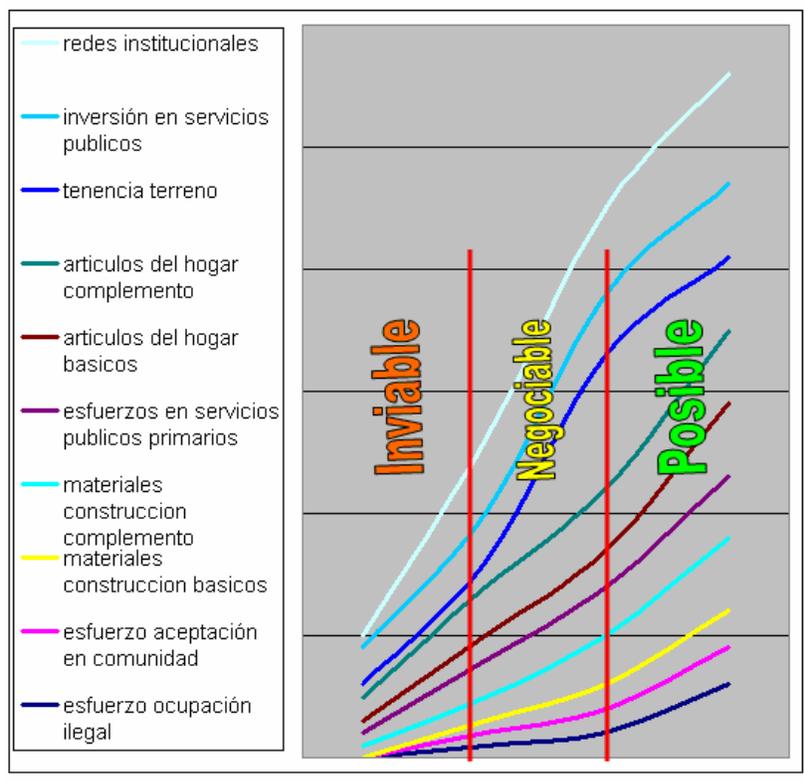
### ***Institucional Nets:***

Finally as an element of valuation of the housing, the framework of institutional nets that begins as the public organisms begin to recognize the consolidating barrio. These open channels are opportunity windows to achieve concessions and to propitiate investments of collective interest for the barrio and their existence in itself adds value the investment.

Finally, in the following graph (the conceptual patterns according to which operate the 10 described parameters of economic valuation are summarized. In it three decision spaces types that it would seem possible to associate to the different peculiar conjugations of the described cases are single out. These spaces of decision or position types that could be obtained in each case are described next:

Figure 4) the conceptual patterns according to which operate the 10 described parameters of economic valuation are summarized. In it three decision spaces types that it would seem possible to associate to the different peculiar conjugations of the described cases are single out. These spaces of decision or position types that could be obtained in each case are described next:

**Figure 4– Graphic for economical evaluation**



Without the pretension of presenting definitive results, to the identification and characterization of these parameters of valuation we additionally developed, a first approach to the quantification of these values, in order to have an initial idea about how much an inhabitant is willing to invest in the their housing reinforcement.

For the development of these preliminary calculations we used the data and we interviewed the people involved in the study on "Barrios Housings Reinforcement

Techniques", Baruta experience, especially Dr. Salvador Safina, hired by the Japan International Cooperation Agency. (Figure 5)

**Figure 5- Experience in Baruta Barrio**  
**"Barrios Housings Reinforcement Techniques"**



These results are summarized in the following page:

**Table 2-Preliminary Economic Valuation of the Housing in the neighborhoods.**

<i>economic parameters</i>	<b>CRITICAL</b>	<i>Bs.</i>	<b>LOW</b>	<i>Bs.</i>	<b>MODERATE</b>	<i>Bs.</i>	<b>MEDIUM-HIGH</b>	<i>Bs.</i>	<b>HIGH</b>	<i>Bs.</i>
<b>Basic construction materials</b>	Wood/metal for columns, plastic/zinc for roofs wood or tin for walls.	500,000	cement parcial on floors, foundations and columns, blocks clay zinc.roof	2,250,000	cement in floor, foundations, columns y slabs, zinc roof y parcial.flat molding	5,000,000	Foundations, columns and beam, partial flagstone in tabelon or platabanda, 2da open plant.	6,500,000	Foundations, columns and beams, tabelon or platabanda in roof, 2 or 3 floors, pipes water and embedded light, walls block.	9,500,000
<b>Efforts in primary public services</b>	none	0	electricity cables and posts, water hoses	500,000	improvements in wiring y posts, white water tubes ditch	1,000,000	You dilute black, white waters, pedestrian accesses (stairways).	2,000,000	Roads, black waters, white waters, illumination public, vehicular accesses.	3,000,000
<b>Basic household appliances</b>	2 Stove querosine/gas small mattress, chairs/stools, etc.	300,000	Fridge usad (9 ft), stove gas 2 hornillas, mattress	500,000	Fridge (9 ft), stove beds and small mattress.	800,000	Refrigerator (11ft), he/she cooks with oven, beds, etc.	1,300,000	Refrigerator (+11ft), he/she cooks with oven, room games.	2,250,000
<b>Tenency of the land</b>	none	0	Bienechurias (improvements)	1,000,000	Bienechurias (improvements)	2,000,000	holding of the land	6,000,000	holding of the land	6,000,000
<b>Complementary construction materials</b>	none	0	cement Floors	1,000,000	rustic Friezes in some walls, polished cement floors	2,250,000	Floors refined cement, macillado in walls, bathrooms, windows and doors wood.	3,500,000	Tiles ceramic in floors, tiles in walls, macillado in walls, lamps, windows and puertes wood, bathrooms.	5,000,000
<b>Complementary household appliances</b>	none	0	TV b/n (13"), radio, furniture dining room suites.	100,000	TV color (13"), Basic furnitures for livingroom and diningroom.	1,200,000	TV color (19 "), sound system, receipt game and of dining room, etc.	4,000,000	TV color (+28 "), decoder satellite, team Sound, micro-waves, complete games of receipt and dining room, etc.	8,500,000
<b>EXPOSED TOTAL</b>		<b>800,000</b>		<b>5,350,000</b>		<b>12,250,000</b>		<b>23,300,000</b>		<b>34,250,000</b>

1. The chart 6 illustrates the described valuation parameters of the 10 and it describes the characteristics and the associate amounts for 5 different conditions of shortage that can be evidenced in the neighborhoods.
2. The values MODERATED, HALF-HIGH and HIGH are relative to the level of general poverty registered in the neighbourhood and they are not equivalent to the high strata of socioeconomic characterization of the INE

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Having in mind the preliminary character of these values, we could presume that the conditions in which we could discuss and possibly commit some investment level in the housing reinforcement on behalf of their inhabitants is in those described in the green column and with smaller probability of success, in those of yellow colour, and in any case the amounts that could be committed would be between five and ten percent of the exposed patrimony.

It is convenient to emphasize a fact that Dr. Salvador Safina made us see and that we were able to corroborate in our field investigation, and it is that, in the current moments the construction costs of a popular housing (in terms of the present values of materials and labour) duplicate the costs of their market value. This means that the average sale prices (around 25 million bolivars per 2-3 plants housings) find for La Vega represents a lot less than half of the costs of construction of a similar housing.

The possible reasons of this curious phenomenon can be associated to two reasons:

1. To that the real estate market still has not reacted to the important increments of the costs of materials and labour that have registered in the last 18 months.
2. To that in the construction of the neighborhood housing, mechanisms of solidarity and other social bonds that reduce in an important way the construction costs, particularly those associated to the manpower costs are generated. These intangible values are part of the parameters of non quantitative valuation that were mentioned previously and to the one that we referred as acceptance and community support networks.

### **3.5.3. *Position Types:***

The conjugation of each one the parameters exposed previously that applies to each individual housing, favours the existence of different positions on the part of the neighbourhoods residents before the proposal of being involved with reinforcement programs for their housings.

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Three possible answers that could be given appear and they are summarized shortly next:

***Unfeasible decisión space:***

In this we meet before an individual scenario on behalf of the family nucleus that inhabits the neighbourhood in which simply is impossible to speak of their housing reinforcement in earthquakes cases. The urgency of the attention of problems is centred in much more mundane and more primary topics like food, drinkable water, health, etc. In these the only possibility seemed to be to work in preparation and training for disaster cases instead of thinking of prevention or mitigation strategies.

***Negotiable decision space:***

In these circumstances it's about family nuclei in neighbourhood areas where, although daily difficulties that should be covered and that prevent to assume without considerations the costs of financing reinforcement programs of their housings do exist, the volume of exposed patrimony is sufficiently high as to invite them to study mechanisms that allowed to approach the problem gradually. In these cases institutional programs of public financing could be gestated based on soft credits or other similar initiatives that can go approaching the solutions gradually.

***Possible decisión space:***

Finally situations where the neighbourhoods inhabitants understand and assume that the reinforcement costs that should be fulfil are equal to a small fraction of some of the elements that could be exposed are present. The notorious economic elements of comparison in this case are usually the value of the housing (including basic and complementary materials) and the market value of the devices that are inside it (furniture and appliances).

***3.5.4. Institutional recommendations to implement reinforcement programs***

We summarize next - based on that prepared up to now, and sustained in the results of the investigation - a group of strategies recommended for the consolidation of institutional programs that could be developed in the topic of the popular housings structural reinforcement in neighbourhood's areas.

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### ***Spread thoroughly what it is...***

This recommendation, common to other disasters reduction environments, demands of the urban development, barrios equipment or similar institutions, that, as first activity associated to the launching of reinforcement programs, develop a massive advertising campaign in which stands out what is it the reinforcement seismic-resistance, where concrete examples of the results achieved by this kind of efforts in the past are showed. We affirm here the convenience that in these diffusion campaigns the success of these programs is emphasized in terms of its cost - benefit relationship. (for example: how many Bolivars of their accumulated patrimony it will save for each Bolivar invested in reinforcement)

### ***Drop by the barrio and evaluate the realities, previously...***

If the reinforcement program which you want to develop is focalised in a particular barrio, once more we suggest emphatically that the technicians in charge of the program design must drop by the barrio and cohabit with the realities there. Something to remember is that the barrios are spaces where complex and different economic, social and cultural dynamics exist, that should be recognized by these programs designers<sup>12</sup>. These differences often express in a not very perceptible way from outside (solidarity and power underground nets, organization forms, informal leadership mechanisms, etc) and every community intervention project that wants to improve the risk situation goes by the previous knowledge, and in particular for the **recognition**, and strengthening of those dynamics.

### ***Understand the scenario and the limitations of "apathetic" inhabitants.***

Under our country's hard social reality, and the way this appears in the less favoured communities that inhabit the barrios, it is convenient to recognize that some cases don't have the conditions to maintain a program of popular housings reinforcement, and that the achievement of these conditions pass for the solution of serious poverty and inequality problems that escape from the responsibility and possibilities of the housing and urban development institutions.

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<sup>12</sup> See annex V -ii of this report, about the Ulrich' Critical Heuristics Approaches, for the Design of Social Systems.

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Although it could seem paradoxical, we consider that for the institutions to recognize these limitations constitute a very important and positive aspect, since this recognition opens the possibility to avoid waste efforts and to optimise the investment.

***Don't assume tendencies, analyse case by case.***

As it was explained previously, we suggest as strategy to avoid generating standardized offers equally applicable to all the barrio inhabitants. On the contrary it is recommended as an interesting way in which the individual differences could be assumed and respected, is to design and offer the reinforcement program in different credit, donation and/or co-financing modalities, for the residents to choose the mechanisms that suit them more according to their particular circumstances.

***The land as a negotiation tool between the State and the Neighborhood***

A very advisable strategy for the implementation of housings reinforcement programs, is the use of the property title of the land as an important negotiation tool. Experiences in Colombia, Philippines, etc. have demonstrated that the neighbourhoods' residents are willing to make important sacrifices in exchange for the holding of the land occupied illegally by their housings. (for example: invest in reparation tasks, regularize legal status, work in the conditioning of common areas, etc:). This fact suggests the use of the holding of the land as an institutional factor of negotiation to get the barrio inhabitants develop reinforcement activities. On this matter we know of successful experiences of regularization of the holding of the land in exchange for the legalization of the civic status of their inhabitants, or in exchange for the financing and execution of rivers sanitation programs; even in exchange for starting up small urban development works on behalf of the residents. We could also know that the form of the land gratuitous donation to their occupants (that is a politic being implanted recently in the country) in the past has caused perverse effects associated to the fortification of the land black market. In other cases there are experiences (Philippine experience) where their handing over is conditioned to the occupants status legalization regrouped in neighbours' associations, in which the prevention and mitigation could play an important role for the concession of the property titles. In all the cases, the security of the occupation statute also conditions the will, either of investing in the housings reinforcement as the access to the credit.

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### ***Speak clear and be rigorous***

It is convenient to find and spread among the community object of the reinforcement program, all the technical information possible about the exposition levels to hazards and/or vulnerability degrees of the housing. If the technical level of the available information requires, efforts should be made to present in a clear, but rigorous and responsible way the risk levels described and the implications and commitments that they demand.

It is convenient to demystify here the idea that this information will induce in the community irrational and/or panic behaviours. On the contrary, all the available information recommends giving up the belief that the results of seismic risk micro -zonation studies should be managed in a confidential way by specialists' groups or high government officials. The suggestion then points to that these results should be put at the population's disposal, in terms completely understandable.

### ***Make evident quantitatively the return rate***

Whenever possible illustrate, with quantitative examples, the cost-benefit relationship that causes to the communities their participation in seism-resistant housings reinforcement programs. In this case it is suggested to present the costs analysis of reinforcement and reconstruction that have registered after recent earthquakes and, in particular, propitiating the exchange of experiences with successful communities in risks administration.

### ***Be willing to accept a "not" to the invitation to reinforce the housing***

Don't show off that, for you as a civil-servant the problem and solutions that should be implemented are obvious, this will also be obvious to the community. In this sense it should be assumed the divorce that could exist between the risk phenomenon interpretations and the existence of multiple focuses about it, depending on what side of the phenomenon the observer is. This posture demonstrates that in risk field exist a "formal" interpretation of the phenomenon, commonly sustained by the institutional agents and an additional interpretation managed by the involved or vulnerable population. The lack of success in the disasters administration programs frequently is owed to consider as objective any of the interpretations, not recognizing the validity of possible additional perceptions.

This fact forces us to think over and re-conduct the efforts through a path in which the communities are directly involved either in the diagnosis as in the solution of the problems associated to their hazards and vulnerabilities, in order to accomplish that the suggested actions can be sustained and articulated with the "informal", but in the least disposable, perceptions on the problem.

***Don't trusts a "yes"... demand "co-financing of the residents.***

Finally it is suggested that the popular housings reinforcement project the is well to develop demands so much of the participation, as of some co-financing type (that could not necessarily be of economic character) on behalf of the families that will be object of the same one. This recommendation is sustained in the fact that when the institutional proposal doesn't deserve any sacrifice on behalf of the communities, these will tend to support practically any initiative, however this "not committed" aptitude is not very convenient.

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## 4. Mechanisms for the implementation:

Once presented the strategies and recommendations prepared, the problem of mechanisms identification that could be activated so that the institutions adopted them, arises.

There is no doubt about the importance of this question since it offers mechanisms "to land" the propositions designed within the institution in charge of the elaboration of community preparation for seismic disasters cases programs as of the eventual implementation of popular housings seismic-resistance reinforcement program.

After multiple discussions on this topic, it was possible to identify three different ways, of complementary character, and therefore non-excluding, that could be useful for the implementation of the strategies that have been summarized here:

### 4.1. First mechanisms: The modification of institucional patterns

A superficial look to the strategies recommended in this report could suggest that the presented results are but a small contribution, in particular before the fact of focusing the recommendations around the idea of developing disasters reduction projects in a closer and coordinated way with the communities. The base for this asseveration could be the following one: ¿is this not a sentence outlined in an iterative way by the representatives of most public institutions?

The answer to this argument is that the root of the problem that we have tried to clarify is not the ¿**What can be done?** But the ¿**How it should be made this work together with the community?**

Saying that it is necessary to work with the communities it is, after having analyzed the information we gathered, in most cases a mere salutation to the flag; a hollow sentence that translates in few bottom changes in the institutions acting ways. Some of the

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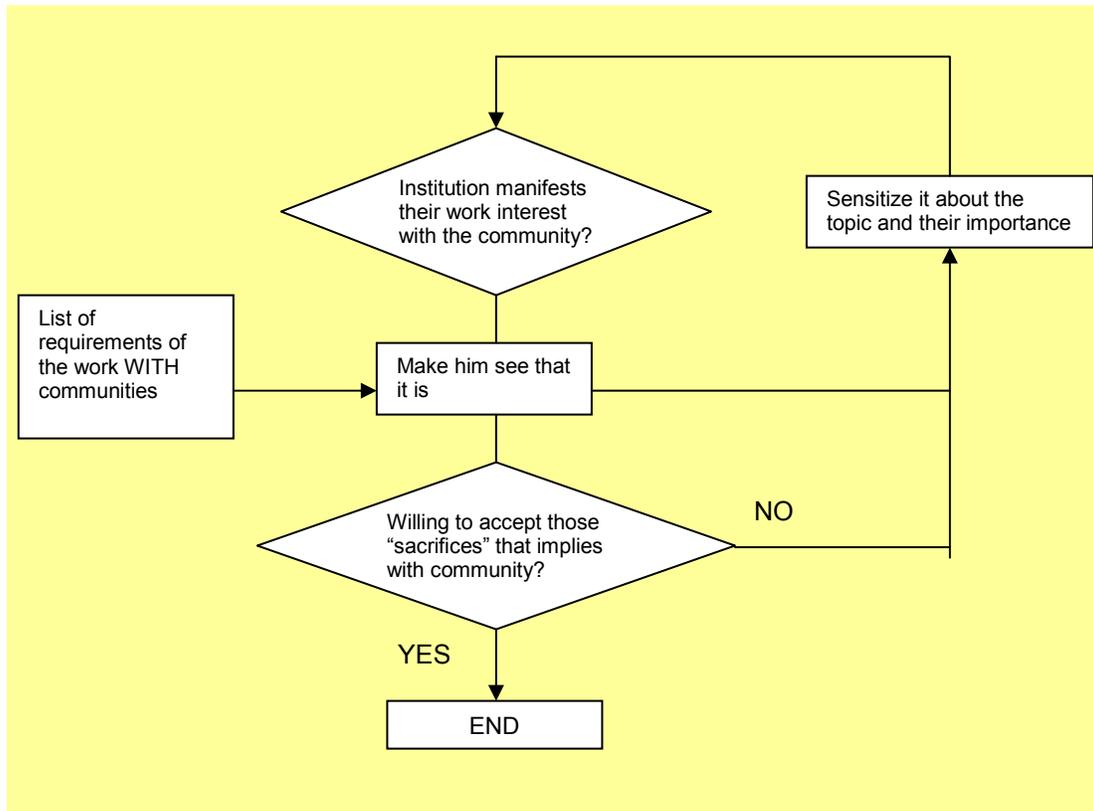
questions that can be asked to the institutions based on the results obtained in this study: ¿How much are you willing to modify the institutional chore in order to materialize the desire to work with the communities?; ¿Are you willing, for example, to accept that the priorities and solutions that the institution offers are subject to a re-engineering process driven by those communities?; ¿Are you willing to negotiate, for example, the modalities and the contents of the disasters cases training courses offered in the proposal?; ¿Are you prepared to counsel and give to the communities the administration of their projects?; ¿Are you sure you're willing to accept stop being the process owner and become instead a facilitator?, and in terms of economic resources, ¿Are you willing to manage the available resources for the projects in a combined way with the communities?; ¿Are you prepared to open your finances to the public?, in other words, all these questions point out to: How much of the control that the institutions have at this time, they are willing to sacrifice?.

We believe that whichever the answer that the institutions (Figure 6) give to these queries that, it is worth to highlight are ways to land the disposition of working with the communities, constitutes a contribution to the problem here outlined.

This way, if the answer of the institutions is affirmative, (which is hardly surprising considering that the institutional representatives we interviewed clamoured to know in detail what they should do in order to improve its performance levels) the answers are always good. If they are willing to, well... Then remains the task of beginning to develop the changes and to apply new outlines

On the contrary, if for justified reasons or not, the answer is negative, you also win. And the gain to that we refer here is sustained in that, when having a relating one on what and how developing these tasks and when assuming the consequences of not implementing the recommendations exposed, the acting problems and the flaws that can register to future projects stop being nonsense, a bad inexplicable and unjustified operation to become an acceptable outcome characteristic of having assumed consciously an institutional decision.

**Figure 6.- Possible Institutional answers**



Finally it is important to highlight that the concrete contributions presented in this study and that they have direct application and impact in improving the institutional acting patterns are: The institutional strategies for the implementation of projects of community preparation for cases of disasters (Chapter 4), the institutional strategies for the implementation of programs of popular housings reinforcement, the manual for institutions (Annex VII-b) and the documental video (Annex – VIII).

#### **4.2. Second Mechanism: The public difusión of referente models**

A second via that repeatedly has been suggested for the effects of being able to land strategies and recommendations presented here, is the development of community capacities that allow them to generate mechanisms of pressure and negotiation oriented to modify the current performance of the institutions.

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This proposal is based on the principle of "*citizenship construction*" as mechanism to press on the making of political decisions and the institutional changes that are socially demanded by the citizens. On this matter it is sustained that "the freedom degrees" that the institutions commonly have about how to fulfil their activities, are based in good measure in the "laxity" level of the postures that the citizens assume.

For the specific case of the disasters reduction programs, one argues that the passive attitude of the communities in the face of the eventual institutional weaknesses of the organisms of community preparation, is showed in the small nearly null, demand level on behalf of these, about the type and quantity of tasks that could and should be demanded of the institutions. It is this excessive flexibility, the one that favours many of the weaknesses that have been pointed out, either by the communities, or by the same institutions.

Of the above-mentioned it is deduced that an interesting mechanism to land the strategies is massively spreading (communication media, community leaders, ONG's, Institutions, etc.) among the communities information about: ¿To what problems they are exposed?, (since in the case of the risk before disasters, it has been demonstrated that the communities are not always aware); ¿Which are the solutions that could help them?; ¿Which public institutions have **the legal responsibility** of supporting them in these topics?; and ¿How to go and demand concrete answers from this institutions?.

A fundamental element to operate this mechanism is the construction and the diffusion of "good practice" information. As the communities know the details of community organization experiences, of the relation institution - community, of shared administration of projects, etc. in that same measure these communities will be able to demand changes in the performance of the institutions and to improve internally their own organizational practices.

It is convenient to highlight here that, although it seems contradictory, a direct beneficiary of the training politics and strengthening of the communities like the one described, are the same institutions. To understand this we have to remember that one of the main non resolved problems that the professionals and technicians of the public institutions

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manifest, is that the volatility of the programs and projects (and even of their own positions) that are undertaken, impede the long term development of initiatives and favours that many "interesting" propositions disappear prematurely. Now then, this fact is given when the administration and the control of the project is sustained strictly in the institutional space.

As far as the communities are involved in the design of the solutions and they are qualified and endowed with the materials that allow them to be co-administrators of those projects, the possibility for a good initiative to disappear as result of a political change in the management instances is much smaller. This demonstrate that the handling over of the power to the communities for the administration of those programs and projects that concern them, apart from being ethical and morally appropriate, (not alone because here we speak of improving their possibilities to survive or not before the next earthquake, but for the fact of constituting them "the client" of the institutional actions, that is to say, the entities to which the institutions "they owe" and before which are justified), constitutes a promising mechanism to guarantee the sustainability of the initiatives that are developed by officials and technicians in the institutions.

The concrete instruments presented in this study with direct application on the public diffusion of reference ways exposed here are: The community strategies for the implementation of disaster cases community preparation projects (Chapter 3), the Communities Manual (annex VII – a / b) and the documental video (annex VIII).

### **4.3. Third mechanism: The inclusión of mediators.**

The last of the mechanisms recommended, is the inclusion of a third party that could operate as mediator between the community and institutional spaces.

This proposal arises from the positive experience that commonly has been registered with the presence of external actors of known trajectory and expertise, in the negotiation of complex conflict situations in which institutions representatives and communities are involved.

This experience sustains that the single presence of these qualified external actors, opens discussion spaces, increases the convocation levels, favours the establishment of

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commitments and, in a more general way breaks the **status quo** of the frequencies and communication ways among the actors.

The reasons that have been exposed to explain this phenomenon are varied, however, many of them point to the character of catalytic element that an external actor can have and, in theory, without more interests than the technical support to attain solutions. This phenomenon is accentuated when one understands that the partner-institutional linking spaces are spaces where economic, social and cultural complex dynamics exist. These dynamics propitiate forms and ways of perception not always clear as crystal among the actors (underground solidarity and power nets, organization forms, informal leadership mechanisms, etc.) that frequently generate doubts and mistrust among the actors and hinder the establishment of agreements. Then, with the arrival of a "not polluted" third party<sup>13</sup> "to this "Weberian" scenario of fight for power and of negotiation, an interesting channel to propitiate attitude and acting changes is constituted.

An important requirement of this strategy is to emphasize the catalytic character of the process, of ignition element that should have the external actor or "third party." This requirement implies the temporary character of the participation that he should have in the resolution of the problems. The non-compliance of this basic norm of action circumstantialities, with time tends to invalidate the external actor and transform it into another part of the lattice of interests and power that we identified previously.

The pertinent recommendation then to *land* this proposition is to identify potential external actors that can impact the implementation strategies here considered and to endow and convince these, of the convenience to become propitiators of what we suggest here.

Some approaches for the identification of these actors are:

- That they are recognized actors in the topic of the preparation for earthquakes disasters cases.

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<sup>13</sup> A near example of this mechanism is the role that the JICA team in charge of the elaboration of the Disasters Prevention Plan for Caracas has played.

- That they are neuter actors from the point of view of the political diatribe.
- That they are actors with experience in communities work
- That they are actors recognized in the institutional environment of disasters preparation.
- That they are personal and professionally committed with the topic.

The tools presented here are: The strategies and manuals elaborated for the implementation of community preparation projects for disasters cases (Chapter 3 and annex VII) and the documental video.

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## 5. Conclusions:

The definition of methods to socially crosswise the prevention, mitigation and preparation for disasters cases constitute a problem far from being resolved. How much is it possible for one and other to learn about this topic? That has been the orientation of the pilot project that we close by means of the presentation of the present final report.

One of the tasks that we eagerly executed to answer this question was summoning some distinguished experts in the risk social administration, in the national and Latin American context and we request of each one to shortly identify the difficulties that had a decisive effect in the success or in the failure of a politic in favour of the programs of community preparation for disasters cases and/or popular housings reinforcement (See details in Annexes IV and VIII). We were surprised by the convergence of the answers. A convergence not only of ideas, but of experiences accumulated after long years of fighting with these problems.

One of the central elements we arrived at after the elaboration of this study was the urgent necessity to recognize to the urban social spaces as scenarios where complex and different economic, social and cultural dynamics exist; these differences are expressed under forms not very perceptible from outside (informal economy, underground solidarity and power nets of, organization forms, etc.). The policies that want to improve the risk situation in the communities really goes by the knowledge and, mainly, for the **recognition** and strengthening of those dynamics.

The above-mentioned invites to understand that any project that seeks to develop the topic of prevention, mitigation and/or preparation for disasters cases in the communities demands a transformation of the relationships between the institutions and the communities. The way of traditional action of the State institutions and the mentality of many of their officials and employees, are obstacles for the success of any program dedicated to the integral risk administration in the communities. Therefore, the development of sectorial actions not coordinated, the difficulties when treating together the economic, social and technical dimensions of the problems, the centralization of the

decisions, the standardization of solutions, the difficulties to perceive the informal reality, the absence of training and capitalization of experiences, the authoritarian conceptions, and the "community participation" thought as the adhesion from the inhabitants to the projects of the organisms, and not like a support to the projects conceived by the inhabitants, they are only some of the manifestations of this communication problem that it should be resolved.

The local development of the communities, their sustainability and therefore the levels of socio-natural risk to which they are exposed, before anything, are a matter of concerned communities; they are the ones to arrange hierarchically the priorities, the institutions should be considered as support means, and to make "WITH" the communities instead of "FOR" the communities. For the technicians and professionals of the institutions committed in projects of risks reduction in the barrios, the general recommendation is to become imbued with the communities, provided with precise means of memory, capitalization and exchange of experiences. This task demands a deep evolution of the mentalities to pass from a hierarchical, authoritarian and sectorial conception to a decentralized conception and horizontal that mutually listened. This evolution demands the existence of continuity, as well as a tenacity work on the side of the institutions and on the side of the social organization.

Only generating these spaces of encounter and understanding between the social and the institutional dynamics we will be able to achieve the levels of mutual listening and shared commitment that demands the management of the complexity and the equal negotiation of conflicts that are characteristic of the integral administration of socio-natural risks that should be developed urgently in our urban centres.

## 6. ANNEXS:

