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BUILDING LOCAL CAPACITY OF MANAGEMENT NATURAL DISASTER IN CHILE. THE EXPERIENCE OF THE COASTAL CITY OF TALCAHUANO

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ABSTRACT: After the February 27th 8.8º earthquake (Richter scale) that affected the center-south of Chile and originated the tsunami which flooded a big percentage of the residence area and military base of the Talcahuano city, and affected a population higher than 180.000 people, (including 23 casualties and invaluable economic and environmental losses). We developed a social perception study to know what the people that was affected by the earthquake-tsunami felt, about risk, vulnerability, copy capacity concepts and how their assessment the local capacity for managing natural disaster. This diagnostic was not encouraging to the decisions taken because local population felt unsaved of flood episode, they were living with fear, gave a low score to the local government capacity to management natural disasters, and they did not fell involved in the reconstruction process and local planning. Considering this scenario, three years later of 27F, the harbor city of Talcahuano has been implemented, a new strategy with the goal to change the way to manage the risk and reduce natural disasters. This research based in the approach of governance reform risk, analyzed and evaluated the local public police implemented, and focused its results to answer three questions: a) how a flood risk could become an opportunity; b) how the governance process actions allow to involve and include the citizen in flood risk management strategy, especially in the basic principle of pro action and prevention, and c) which is the new step.

Key Words: flood management, governance, prepared communities, public participation & social learning

1. Introduction

During the past two decades it has been evident that approaches "top-down " (from the global to the local) , have ignored the role, in risk management and disaster reduction ,that has the capabilities and resources as local needs and vulnerabilities (WMO , 2008). Today, in times of crisis prevailing systems, the society feels frustrated further , thus being excluded from decision -making in the planning of their community as well, for not being part of risk management that affects them (Rubin , 1991). Hence, if the local authorities responsible for security and risk management ignored the local community, the success of the actions to implement (Pearce , 2003) is minimized. In response to the limitations of the "top- down" an alternative approach emerged during the 1980s and 1990s bottoming disaster management in the local community (Tanahashi , 2005).

The scientific knowledge, especially in the last decade have focused their research on improving the management of natural hazards from the incorporation of the social component. These multidisciplinary studies have ranged from as concerns: risk perception , (Brilly and Polici , 2005, Lara et al, 2010), education, information, knowledge transfer, identifying factors that influence the decision of the community to cooperate in disaster management (Howgate, Olivia and Kenyon, 2009 , Martin , 2010; Das, 2011) , the development of social resilience capacity (Bahadur et al, 2010 ; . Norries et al, 2011; Sock et al, 2011; Ashley, Blanskby and Newman, 2012; Bakker, Raab and Milward , 2012), to aspects of uncertainty and climate change (Ribarova , 2009 , Burch et al, 2010 , White, Kingston and Barker, 2010; Samuels, Bramley and Evans, 2010; Giridharan and Lomas , 2012). Contributing to develop governmental approaches led to the implementation of participatory and inclusive public policy.

When have participation and community involvement in the management of risks will reveal a number of distinctive local processes (Gutteling and Terpstra, 2008; Scharich, 2009). These include a greater awareness of losses, impacts and disaster risks at the local level by risk prone and organizations to which they belong (Perwaiz, 2011), households; as well as building partnerships with local governments and other stakeholders, to enable negotiating priorities, public investment and aid (Mitchell and Harris, 2012); and implementation of measures that not only reduce the risk of disasters, but provide additional benefits such as improvements in local infrastructure and services. (Maskrey, 1989, 2011, Satterthwaite, 2011).

2. The Diagnostic

On 27 February 2010 Chile experienced an earthquake of 8.8 magnitude on the Richter scale, which affected more than 13 million people (80% of the total national population), which caused a tsunami that flooded the coast of the country, directly affecting the port city of Talcahuano. The impact was total, water shortages, power outage, saturation of the communication system, broken streets, major roads blocked by containers and vessels, collapsed drains, sanitary risk product organic compounds tsunami, looting, food shortages, fear, insecurity. In summary the earthquake-tsunami affected 171.510 inhabitants of the town of Talcahuano, 56,536 of them were direct, and 1.805 was displaced and 29 casualties.

One year later, we developed a social perception research. This research looks into the social perception and knowledge of Talcahuano residents affected by the earthquake-tsunami. We emphasized on their conception of risk, vulnerability, and coping capacity and what kind of measures they proposed to improve their flood vulnerability. We applied 400 surveys to Talcahuano residents affected by earthquake-tsunami, dividing the sample in 8 sectors, considering the variable affected or unaffected by flooding.

The results of this research was strong categorical

1. The perception of vulnerability increased with experience. In other words, their perception was directly linked to the experience of the episode on 27F.

2. The citizen of Talcahuano, ware living with fear.

3. The flooding- affected residents gave the highest relevance to structural measures for feel safety and not considering with height importance non-structural actions.

4. Regarding with government coping capacity, in general the residents made a negative assessment. Improvement is the goal for the next years.

5. Most Talcahuano citizen do not feel publicly involved in the whole reconstruction process

3. The new Approach

After normalization of the city, and the social perception that existed in the territory of the dangers from floods comprising the mayor, re-elected for a term of four years, emphasizes risk management and disaster reduction as one of the fundamental aspects of its policy agenda. In this context the municipality in partnership with the United Nations Program for Development, develop a local strategy, based on the Cuban model of Management Centers Risk Reduction. This will in Talcahuano Implements a communal system of emergency management, risk reduction and early recovery, socialized and articulated public - private entities, civil society and regional level. These aims are to reduce the social vulnerability of populations for each sectorization emergency, through community disaster preparedness. Specifically the territory was divided into 6 sectors (Figure 1) where in each neighborhood there is a risk management center, run by a department of the municipality, seeking to consecrate, at the neighborhood level, the next goals: , :

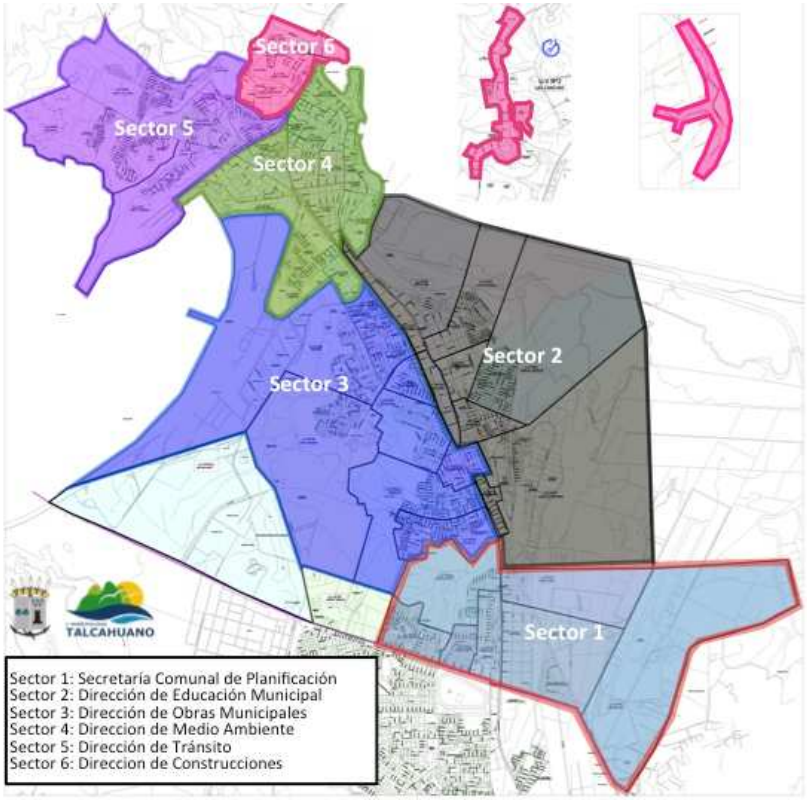

Figure 1. Division of the local government of Talcahuano

1. Implement enough equipment in community infrastructure present in the neighborhoods

2. Shaping Neighborhood Councils Risk Management in each Neighborhood Center Risk Management.

3. Train the members of Neighborhood Councils Risk Management in the theoretical and practical knowledge about the risks of their territories

4. Develop participatory risk knowledge in the territories through risk maps and protocols for preparation and response

4. Discussion

a) How a risk could become an opportunity

When there is a collective learning process of society.

This community approach to risk management and disaster reduction as a first action, has focused on the education of social capital through educational processes to the population of each of the six territories. The actions are related human capabilities in the community and municipal institutions. In the community there have been various workshops on training for the risk management approach with focus is the creation of knowledge by the population and interagency coordination within the municipalities, to respond against hazards. In addiction there have been activities to develop the new emergency plan and protocols, which is still under construction. City officials have taken an active role in the various simulations, were conducted after the 2010 earthquake, taking roles of monitoring, careful definition of escape routes and safe areas adequacy, among other actions.

These actions reflect as a territory, after the experience, has incorporated new learning, bringing a new risk perception, which includes learning and social demands of collective safety,

in the implementation an approach and development actions, where we should not try to control the risk and uncertainty, but must learn to live with it.

b) How the governance process actions allow involving and including the citizen in flood risk management strategy, especially in the basic principle of pro action and prevention?

When people are seen as key elements in actions aimed at reducing the negative effects of disasters.

The approach to integrated flood risk management became a mainstay in the guidelines for community development. Through educational workshops we were sensitizing the population about the various risks of the commune in which they also have a stake. This triggered a series of public demand for pursing the need for more knowledge and achieves better coordination and collective well-being through participation, commitment and local action. Also increase in municipal organization the need to develop mechanisms to install updates from the value-based organizations installation, coordination, cooperation, horizontal relations of power, trust, reciprocity, assessment of community knowledge, information transparency, among other in the local act.

Both actions have allowed to install a whole new "non- emergency-" and focused on prevention and community / institutional preparation scheme.

c) Which is the new step?

Consolidate the comprehensive approach to risk, as a long-term policy and maintain citizen participation.

This requires robustness approach from reaction to prevention. Encouraging local existence of greater coordination and actions to consolidate a comprehensive approach to risk not focused only on the response. Alongside this is necessary to have an autonomous budget to implement a model that requires lifting information territory level protocols, implementing a GIS systems in the subject and a whole series of trainings and community officials, as well as keeping professionals in their positions is costly.

5. Conclusion

The municipality of Talcahuano realized that the tools and mechanisms designed to manage risk and disaster reduction, need to improve they approach to adapting them so that they offer significant and real opportunities policies and local development.

The division of the municipal territory into six sectors and implemented educational process has facilitated community approach to public affairs and especially the knowledge of the natural and human environment.

Risk awareness and individual responsibility that people have in terms of reducing flood disasters strengthened.

While the beginning of a paradigm shift in the perception of political authority and the municipality of Talcahuano, on flood risk, the way to consolidate a comprehensive and systemic approach is denoted in infancy . Required to implement continuous process of evaluation of actions involving the explicit participation of city residents in order to not separate these from their territorial reality and enhance their social responsibility.

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