THE VULNERABILITY AND RESILIENCE IN RISK SCENARII : A COMMUNITY CASE STUDY; INDIGENOUS NASA IN HUILA COLOMBIA

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Summary: The main goal of this paper is to establish the relationships between socio-cultural situations of indigenous people in Colombia and their resilience capacities, through identifying people community action against natural injury within volcanic and seismic hazard zones.

Keywords: risk scenarii, quality of life, natural hazard, vulnerability of a population, resilience capacity

Résumé: Le propos de cet article est d'établir les rapports entre les situations socio-culturelles de populations indigènes en Colombie et leurs capacités de résilience en identifiant les actions communautaires des populations vis à vis des risques naturels dans les zones sujettes aux aléas volcaniques et sismiques.

Mots-clés: scénarii à risque, qualité de vie, aléa naturel, vulnérabilité de la population, capacité de résilience.

The vulnerability and resilience in risk scenarii : a community case study; indigenous Nasa in Huila Colombia

1 INTRODUCTION

Understood here as a lack of capacity for access to life quality (Cannon & Müller-Mahn, 2010), vulnerability constitutes one of the major factors in risk scenarii, within many disaster circumstances. After a natural hazard, adequate income for food, education, housing, is then aggravated by the existence of institutional weakness, weak social networks and poor governance. Thus affecting social groups capacity to recuperate, life quality strong correlates with people's ability to recover from a situation or disastrous event. Nevertheless, ability to recover from a traumatic situation may depend from the cultural patterns of a social group, with considering knowledges, beliefs, historical processes of social networks, and environmental conceptions.

1.1 Natural hazard and risk management

The presented study areas are located in at central and western of Colombia, northwestern of South America, with an area of 2.070. 408 km² inhabited by 46 million people (Figure 1). Geologically, the country is at the Pacific Ring, and is therefore particularly exposed to earthquakes, tsunamis and volcanic eruptions.

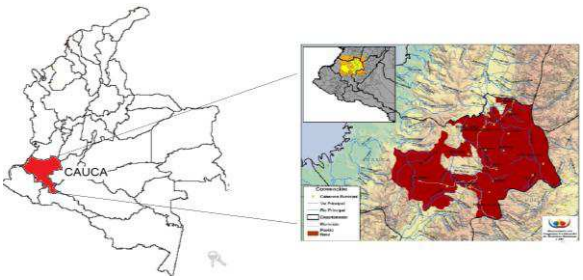


Figure 1: indigenous Nasa location. Source: Vicepresidencia de la República, Base cartográfica: IGAC. 2010

Through identifying people located into those zones, aim of the presented research is to establish the relationships between their socio-cultural situations, their vulnerability conditions and associated resilience processes, related to the mentioned hazards.

Risk management as a societal response to the causes and effects of the interaction between a natural hazard and the vulnerability of a population suffers from a lack of human dimensioning. Therefore, it is necessary to acknowledge human processes at local scales of their territories, particularly with observing the different ways for social groups to understand natural phenomena, to formalize their related environmental cultural patterns, and to built adaptive strategies as responses to natural hazards.

1.2 Sustainability framework of people's vulnerability

Relatively to the ESO-model approach, which "seeks to show the adaptive strategies that have populations to increase resilience in vulnerable areas." (Woloszyn, 2012), sustainability framework considers vulnerability as a convergence of social, cultural, and ecological factors in a particular space-time reference, with considering resilience as the ability to adapt and respond positively to the dramatic changes. It is obvious that many economic, political, cultural and institutional factors have an influence on people's vulnerability (Wilches-Chaux, 1993, Garcia, 2005, Douglas, 1982, Warner, 2007). This influence level is a function of the social groups responsiveness, traducing people's capacity to handle and recover from a disastrous event. This capacity depends on the sociocultural conditions of the population that has been affected: we'll call it the "social capacitance" factor. This last will describe societal elements and cultural resources that territorial communities mobilize to adapt their response to a disastrous situation (figure 2):

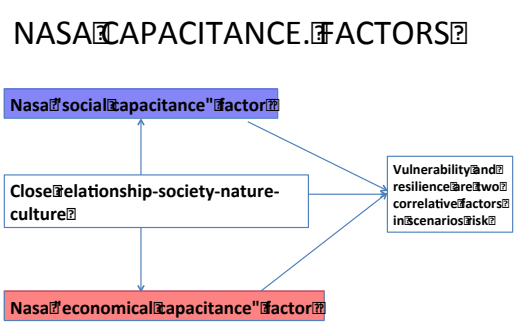


Figure 2: Nasa "Capacitance factors" cultural construction

2 THE NASA "SOCIAL CAPACITANCE FACTOR"

According to (Caicedo, Figueroa, and Nieto, 2007), the Nasa territory is divided between wild territories, sacred under "Thë Wala" benevolence, considering animals, plants and territories moorland ecosystems as venerable, and, on the other side, the arable lands which are distributed communally and familiarly with a sense of solidarity, in order to ensure food security.
According to Human Rights Watch, the Vice Presidency of the Colombian Republic displaced 24,108 Indigenous in the 16 municipalities including NASA community beween 2003 and 2008 (Ministerio de Cultura. República de Colombia, 2010).
To prevent the danger of displacements and scenarii of armed conflict, Nasa indians have built resistance processes against armed groups, based on the following main values: unity, land and culture. These principles have enabled people to organize themselves to defend their lands or reservation. Those lasts are intended both as a territory with a spiritual significance and as a space for community activity. This territory is therefore defended as a protected space for everyone, where meeting and protection mainly take place in special houses like maternities and schools (Resguardo Indígena Kwet Wala Dxüus Yat Nasa, 2004). Through claiming their neutral position from culture and identity, this historical position of resistance allow to develop their territorial robustness to external factors such as population displacement.

2.1 Cultural dimension of Nasa "social capacitance factor"

In concordance with (Caycedo, Figueroa, & Nieto, 2007), the territory is the principal frame of cultural identity. According to this, myths help the population to build strategies for their past, present and future environmental relationships with their natural surroundings.
For Nasa Indians, three worlds are co-existing, the world above, the present world, and the under world. The first is the world of the creator, the second is the world of the lords of nature who get the power, and within it, the world where coexist human, natural beings and phenomenons as volcanoes and earthquakes.

In-between those worlds grew up Juan Tama, the mythical hero, who claimed five laws (Caycedo, Figueroa, & Nieto, 2007):

- the land of the Nasa will never pass into the hands of strangers,
- Nasa indians shall never be defeated,
- Nasa people will respond to any aggression,
- Nasa community should never mix their blood,
- no fight is allowed between Nasa people.

Within Nasa cultural context, "Thë Wala", a kind of shaman, plays an important role in this society, as the spiritual guide, the community leader and the mediator between the natural environment and the indigenous Nasa (Coyo, 2010).
As a foundation of cultural assets and community driving between nature and territory, Nasa people laws help them to improve their social organization resistance against the external factors, mainly natural ones.

2.2 Historical dimension of Nasa "social capacitance factor"

The people Nasa have a historical and cultural tradition that comes from pre-Columbian period, before Spanish conquerors arrival. This people hotly resisted against religious congregations, which constituted to their eyes a treachery to their culture. In 1540, the Nasa indigenous army victoriously fought the Spanish Sebastian de Belalcazar, but parish priests "Jesuitas" in 1613 finally submitted their people (Pachon, 1996), (Wilches Chaux, 2005). As a consequence, Juan Tama constituted their first transcendental figure in colonial times (1.696) and then, Quintin Lame, the second fighter for the rights of his people in the early twentieth century, lead epic struggles to establish the slogan of "Paez self-determination ".

3 THE NASA "ECONOMICAL CAPACITANCE" FACTOR

Nasa's economy is based on consumption and various products planting on small plots, implying the main product corn together with other products as beans, potato, blackberry, coffee, sisal, banana, cassava, parsnips and harrow. Nasa people perform other economic activities such as farming, raising small animals and crafts, and are engaged in the service sector such as transport, commerce and public administration.

According to (Wilches-Chaux, Gustavo, 1995) at the time of the disaster in 1994, conditions of land property and environmental degradation impacted on food security issues. So, when the Nasa have been stripped from most fertile lands thanks to industrial agriculture development, many of them where forced to become "terrajeros", implying land use payment (Unidad de Planeación Minero Energética, 1999). As a consequence, the Nasa settled as ranchers in stubble and grassland soils complementary to their farming, so cattle could furnish essential food mingas, provide materials for traditional dress confection, or be sold in times of crisis (figure 3):

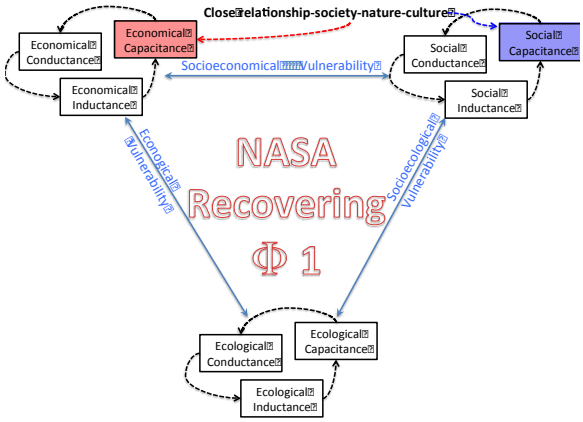


Figure 3: Nasa cultural identity influence on social and economical capacitances

The “Mingas” are an important expression of community work, which may enhance individual efforts for collective projects to meet collective needs, from the construction of houses, bridges, roads, to ranching or planting. This practice, used symbolically to ensure Nasa people community binding, has been usefully applied as a performative adaptative process, mainly under environmental or social threat. This communitary practice can also be understood as an "economical capacitance" structural element, leading to inductive process of resilience through activity adaptation to crisis.

4 CASE STUDY AND PRELIMINARY RESULTS

There are important differences between conceptions of nature and acknowledgment of the phenomena that have affected social groups within the same territory. For indigenous, natural phenomena is part of a global natural dynamic, (Piñacue, 2012) in which they are involved as a community; as an essential difference with other groups, Nasa community claim that they are part of their environment, and more specifically of the volcano. Therefore, natural hazard is considered as a consequence of relationship malfunction between the community and its environment.

Within our study, indigenous Nasa and the Huila volcano avalanche in 1994 reveals great natural hazard resilience capacity of this social group. In this risk scenario, the community mobilized a specific cultural pattern, which constitutive beliefs are associated with a mythic hero born from natural phenomena like an avalanche. Therefore, their social network is built from a sense of territorial nature-belonging, as they feel part of a particular community in strong relationship with land and nature (figure 4):

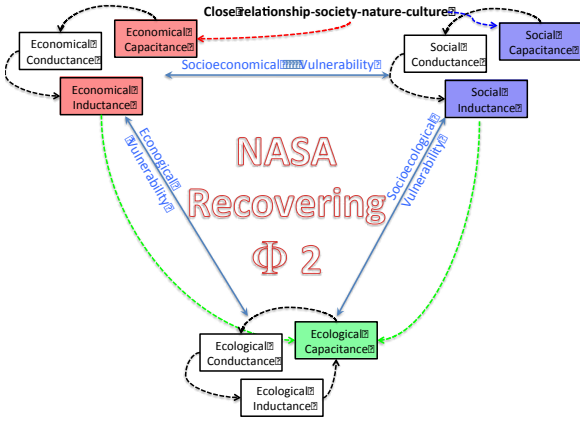


Figure 4: Nasa Eco-social inductance process impacting ecological capacitance

As a consequence, when a natural hazard occurs, they feel the need to be strengthened as a people in search of their roots. In this way, recovering from a disaster means strengthen people's beliefs and values, through building individual and communitary elements to face the situation, thus increasing ecological capacitance by eco-social inductance process.

4.1 The natural hazard

The disaster occurred in 1994 has been an important factor in shaping the organization of Nasa communities, as this natural hazard restored the social fabric previously affected by the presence of illicit crops, through the imagined intervention of the "Thë Wala", traditional community medicine man. For Ingeominas, this important figure mediates the traditional community beliefs with scientific knowledge. Following this argument during the avalanche, they established a constant volcano's activity monitoring, which captation points has been defined through their own ancestral knowledge of the territory.

At 15:47 local time on June 6, 1994 an earthquake occurred, which epicenter was located at municipality of Paez, belonging to the hillsides of the mountain system of the volcano Nevado del Huila. According to (Cardona, 1995) by prior hydrometeorological behavior, the geomorphological characteristics of landslides generated a debris flow, causing casualties, destruction of physical infrastructure, and impacting the environment severely (figure 5):



Figure 5: Effects of the earthquake and the flood of the river Paez - Tierradentro, Colombia. Source: http://enosaquiwilches.blogspot.com/2010/02/aprendamos-del-agua.html

As noted Cardona (1995), the characteristics of the epicentral area was situated in high mountains and deep canyons, populated mainly by two indigenous communities, Paeces or Nasa and Guambianos. Economic and social injuries were important as well, as 8,569 persons were affected, with more than 500 disappearances. Moreover, the earthquake caused indirect effects in several towns in the epicentral area such as heavy and continuous rains that saturated the soil in the upper river basin Paez, destroying number of vehicles, aqueducts, roads and buildings.

4.2 The Nasa resilience process

The cultural threat from this disaster was understood by the Nasa as a call of nature, a call from Juan Tama for the threatened people to return to their cultural values lost by the presence of illicit crops and the consumer society. Therefore, the flood caused by the earthquake was understood as the natural event of the birth of Juan Tama hero.

The necessary population relocation after the disaster constituted a community driver for cultural consolidation as well. According to (Stuart-Olson & Sarmiento, 1995), social consolidation after the disaster was based on community home and meal sharing, in order to protect orphans and homeless in those particular conditions.

Therefore, despite the crisis that affected the Nasa community, (Wilches-Chaux 1995) indigenous forms of autonomous and traditional organization recognition led to dialogue and reconstruction activities, thus affecting social management. This constitutes the social inductance effect of the Nasa on their crisis resolution (figure 6):

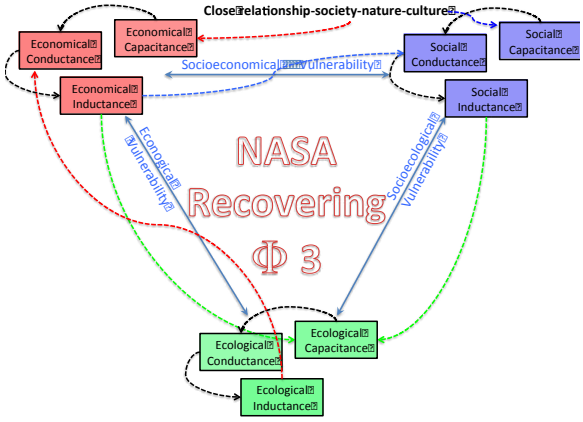


Figure 6: Nasa inductance effect on volcano and seism injury recovering

Currently, the Nasa cultural consolidation have generated an important cultural-based resilience process for risk managing. They have created an organizational structure to monitor Huila volcano activity, working in conjunction with Ingeominas Colombia office, through providing both seismological records and "Thë Wala" interpreted in the light of their own cultural ecomarkers, (Coyo, 2010, Piñacue, 2012).

5 TO CONCLUDE

In the case of Nasa indigenous, specific cultural pattern, characterized as a specific knowledge about the environmental and historical processes of land occupation, i.e. myths and legends about the natural phenomenon and the nature itself, helps to feel part of

a whole socio-natural environment, thus allowing the community to overcome their traumatic situations or disastrous character, thanks to the social network they have created on an ancestrally foreground.
Despite the social and cultural crisis processes due to external factors, the Nasa indigenous solidarity strategies reflecting traditional cultural practices constitutes the basis of their proactive resilience facing the consequences of natural injury. Through cultural patterns negociation, their corresponding social capacitance construction enable vulnerability edges overcoming, through allowing them to survive independently, despite adverse economic, environmental and social conditions.

Thus, with creating their own strategy for risk management at a social level, Nasa indians have managed to establish a dialogue between contemporary technical knowledge represented here by geological science and their historical cutural knowledge, through "Thë Wala" action drivers, reinterpreting the meaning of the flood of 1994 and thus allowing to consolidate as a resilient territorial community.

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