

# FROM THREAT TO GROWTH

## REFLECTIONS ON THE GENERAL METHODOLOGY

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**T***his thesis implemented several methods according to each stage. The kinds of research and design outcomes and lessons learned that this reflection focuses on are listed below in connection with the method they come from:*

- **Press review:** This method was implemented at the early stages of the process and was integrated as a discipline during the other steps. In general terms, press review helped me in the construction of a general argument based on what people expressed through media. However, when contrasting these findings with the reality on field, argument inaccuracies were also identified. In other words, although the press allows the researcher to get closer to the social conflict. In recent history, the quality of the argumentation might be affected by editorial biases and hidden forces behind news media.
- **Literature review:** One of the most powerful methods to structure the main argument of this thesis was the review and analysis of scholarly articles. Particularly, three approaches were studied during this stage of the project: participatory approach (Chambers 1994, Healey 1998, Forrester 1999), risk management theory, and self organization in urbanism (part of Alexander's 'A new theory on urban design'). As concluded in this report's theoretical framework, the literature of these three approaches provide structured insight about flaws and successes of previous strategies carried out by local governments and NGOs. It also helps in understanding the pros and cons of the new government's approach to risk, formerly focused on disaster attention and now shifting into risk management as a development strategy. In this case, a review of legal documents was also made in order to set out the existing legal framework in terms of risk management and contrast it with previous policies. Finally, the literature research backed up the design strategy by offering a scientific explanation to the vernacular construction methods and territory usage patterns from an urban design perspective. Specifically, urban design theories that have been proved in international contexts, such as the piecemeal growth approach proposed by Christopher Alexander in 1980's were helpful in understanding how the spontaneous patterns of urban growth in the Galeras region were of positive input for further regional planning processes, as those proposed in my thesis.
- **Social Media Review:** As a complement to press review, the social media activism became a balanced source of information for this specific case. The technique applied for this process was to establish contact with different stakeholders via their social media platforms on line. For example, by implementing this method, I gathered real

time information from Facebook groups of two communities of the case study (Genoy and Mapachico), from the Minister of Housing's twitter account, from blogs of researchers and NGOs involved in the conflict, and from Facebook fan pages of local mayors of the affected municipalities.

- **Open interviews during the study visit:** All the three methods above mentioned were validated by open interviews with different stakeholders. This way, primary data was collected and analyzed, and a general hypothesis from the early stages of the master's thesis process was contrasted. Firstly, the importance and severity of the conflict between community and local authorities was demonstrated by different actors. Furthermore, hidden conflicts within the government authorities, as well as profound differences between indigenous and peasant communities. Secondly, another checked hypothesis was that a regional development strategy would be supported by the community as a way to reduce past policies' negative impacts in the community and the territory. Finally, the open interviews allowed me to discover the community's past initiatives never implemented nor documented by the local authorities. This is the case of the people's proposal of offering new housing for young couples at the resettlement locations. These young couples cannot build within the high threat zones because of the strict emergency regulations, and are forced to live at their parents or in laws houses if they want to stay in the community. Recovering this initiative as part of a new spatial strategy underpins this proposal's design and phasing strategy.
- **Spatial Analysis and mapping:** The spatial setting of this thesis was only possible by collecting and systematizing geographic information from different sources. A general base map was built by integrating national scale datasets (roads, green, water sources, topography, etc) with more detailed maps from the municipality's plans. This helped me in understanding the regional dynamics by analyzing land concentration and plot patterns. Furthermore, cartographic information on vulnerable infrastructure was contrasted with the official threat map from 1997 and the location of vulnerable communities. Overlaying this information according to World Bank's CAPRA methodology allowed me to propose a regional risk map, which is a core outcome from this thesis. The resulting risk map is the basis for the regional strategy herein proposed, and it might represent a matter of further study, provided that it needs to be complemented with more accurate information in order to fulfill The World Bank's guidelines on risk assessment.

- **Comparative analysis and case studies:** Finally, comparative analysis provided information that helped in the measurement of this proposal. The scale of measure proposed as conclusion of this analysis can be improved and used for further projects on volcanic risk contexts. Another specific lesson from this method is that social conflict situations need to be faced and reduced in order to achieve an effective risk management strategy.

In summary, this reflection describes the general outcome of implementing different methods that have been selected for each stage of the project. It shows how research methods provide direct input to the regional planning and design processes. Specifically, methods such as literature review, open interviews and spatial analysis, supported core design premises like:

- A new safer settlement will be conceived as an extension of the existing territory and will be performed by the local community in a piecemeal growth process (Literature review conclusion)
- The phasing strategy to encourage people to populate the new settlement will be based on providing housing to the young couples and families that cannot build by themselves at the high-risk areas. (Open interviews conclusion)
- A regional plan must be designed by implementing a risk map, rather than a threat map (Spatial analysis conclusion)

This approach sets out a positive relationship between the project and its social context, as it includes the original reasons of clashes between the society and the government regarding to volcanic risk and the emergency measures. This is especially relevant for the academic context that this project was part of. In fact, the development of this project as part of TU Delft's Design as Politics studio, gave me the opportunity to understand the political background of a spatial problem like this, as well as to propose alternative solutions, differentiate between top-down approaches for regional planning, widely utilized by South American governments. The methodical line proposed by Design as Politics (Explore and decide, Analyze and position, and Design) sat out the roots for the detailed methodology this chapter describes, and serves as the guideline that facilitated the achievement of this master's thesis outcomes.



## RECOMMENDATIONS AND CONCLUDING REMARKS

There are several general recommendations that have come out of this project. Firstly, as stated in the hypothesis, risk management needs to be addressed as a regional development strategy in a wider framework. Specifically in volcanic contexts, a regional strategy might enable communities to identify regional wide opportunities to increase safety in their own territory. In a wider territory, there are more possibilities to reorganize the community if required.

By this analysis it can be concluded that in order to address the issue of risk reduction in rural and semi-urban communities, innovative alternatives need to be considered, such as:

- Integrating the shelters areas as part of the solution: In Colombia as in many regions, human populations that settled (or partially settled) on territories identified as natural hazard zones are usually assigned to a shelter area for evacuation purposes. This shelter zone must be zones where the hazard cannot constitute high risk to human life. On the other hand, this zones are by definition part of the public space of the community, and they are also well connected to rest of the village by evacuation paths. This proposal puts these elements together, by encouraging the positive and frequent use of the shelters by the community. Hypothetically, this approach would enable the generation of urban dynamics at the neighboring agricultural plots (therefore, away from threat as well), which will make them available as potential lands for a better resettlement strategy, which can actually be now understood more as a growth of the endangered village to a safer direction.
- Creating large areas for food production instead of micro parcels: In rural areas, micro parcels (the result of having growing population in a highly fertile territory) have a higher risk of disrupting the productivity of land in case of a damaging volcanic eruption. The smaller the agricultural parcel, the higher the probability of having the whole parcel impacted. Nowadays, the Colombian national constitution provides enough tools to create associations of peasants with special requirements, such as Reservation Peasants Zones (also known as ZRC), Indigenous reservoirs and natural reservoirs of civil society (a successful case of the latter can be found in the nearby Cocha Lagoon, referenced in page 37).
- Working together with ancestral communities in understanding risk: In a community with a cultural heritage linked to the territory, risks can be better understood if scientific methods are mixed with the vernacular knowledge of the threat that has been built along generations. Lessons from the case of Nasa communities in Cauca, Colombia (explained in page 23) must be implemented.
- Letting the community decide their own growth: No matter how brilliant is the resettlement plan, if the com-

munity has been mistreated in the past, they will not move. On the other hand, if the original settlement has been developing since its origins, it can grow organically again. The solution can have external guidance, lessons from similar cases and scientifically based inputs as those suggested here, but the decision on how to avoid risk is on the community and they must be provided with enough tools to make this decision.

### DESIGN AS POLITICS: PARTICIPATORY DIAGNOSIS AS A TOOL FOR DEMOCRATIC REGIONAL PLANNING.

Community participation is a necessary practice for the development of regional spatial strategies. The larger the region the more exhaustive the participatory processes must be. For this specific case study, people have expressed in number of times their dissatisfaction with the fact that government authorities have given little importance to their opinions.

The *arrimados* proposal illustrates this situation. As it has been said, *arrimados* is how they call those who have gotten married during the years of the state of emergency, and due to this law's prohibitions for buying or building new houses within the threat zone, most of them have stayed at their parents or in-laws. That explains why many homes in the study area are composed by two or more families. According to community members interviewed and to *Proceso Galeras* staff, some years ago the community proposed to invest the resettlement project resources in helping these young couples or *arrimados* to get a house. However, this proposal was unsuccessfully addressed to the national government and the idea was rejected.

That proposal devised by the community (and dismissed by the authorities) can actually constitute a basis for a spatial strategy as the one described throughout this document. It can be therefore concluded that for a stagnated regional issue like this study case, the main issue might not be the lack of innovative proposals, but the lack of efficient mechanisms to discuss in a table with the administrative authorities, the several ideas of the community.

With implementation strategies such as participatory diagnosis, community members can get positioned as planners of their own Territory. Methods such as participatory rural appraisal (Chambers 1994) may reinforce this by the use of tools such as community-mapping of risk or definition of needs as a community (e.g. definition of needs by locals was the main input for the detailed design program of this thesis). Theoretically, a combination of this approaches (as suggested in the diagnosis chapter) may help planners and authorities to evaluate and consider more efficiently ideas that constantly originate within the community.

### ROLE OF THE PLANNER

During chapter 2, three different approaches to participation were discussed. These approaches vary on the position of the planner with regard to the community that wants to be involved. However, in the three approaches, the main discussion is where should the planner be positioned. Even though this is a core issue, in cases such as Galeras further discussions are required about how to empower the community as a planning actor itself, i.e. reducing their dependence on external planners to make better spatial decisions.

Democratic systems bring tools to communities to organize themselves and make large scale decisions, with appropriate professional assistance. However, more information is required in terms of creating awareness on how to make better use of the democratic tools available right now. The creation of an indigenous council is an example of the community using the democratic tools in a proper way to achieve community goals.

### THE SOCIAL VALUE OF LAND

Government authorities approach to this case study commonly focuses on the issue of people who do not want to sell their properties to *Proceso galeras*. Furthermore, this authorities try to find formulas to convince people of the benefits of selling to the government (the only one authorized to buy a property within the threat zone). This perspective gives low relevance to the fact that for these communities the value of land surpasses its economic value. We have named this as the social value of land, the social and cosmological importance that locals and specially indigenous assign to the territory they inhabit. The sentence "We do not own the land. The land own us" illustrate this point.

This thesis states that the economic value of the land might constitute an informative feature, for instance to communicate the outcome of a risk assessment as it was herein proposed (see page 103). However, the value of land involves cosmological complexities for members of this specific community. This must be respected by planners and authorities.

### NEXT STEPS

Throughout this work it can be recognized that the changes required to move forward from the existing stagnated situation towards a development require long time frames and further discussion on regional strategies as part of volcanic risk management. Specifically, more efforts are required in at least these points:

- Provide information to the community in an open, public and efficient way about the concepts of risk and

threat and their differences. Thus, real risks to life can be defined by the people themselves, rather than basing this decisions only in external assessments.

- Connect vernacular knowledge about risk with scientific risk assessments. A close example of how this can be done is the case of Nasa communities in Cauca, Colombia whom combine their traditional methods to interpret the behavior of the volcano, with the use of advanced equipment.
- Documentation of similar experiences in an impartial way. Experiences should not only be used to emphasize the point of view of a given stakeholder. Documentation must include what elements are required to evaluate a good practice as 'good'.
- To improve the investments on the territory by the local authorities as a way to improve the trust of locals towards the government.
- Encourage local governments to join and orient efforts towards the construction of regional risk management strategies, rather than local-scale development strategies.
- Enhance the role of Academia (e.g. Universidad de Nariño) as an actor that can train locals in activities that improve their comprehension of risk. One action that can be performed is a vulnerability assessment based on the kinds of roofs in the villages at volcanic threat, as it was started by Osso NGO as a pilot in 2010.

### FURTHER RESEARCH QUESTIONS

Studying this case within an academic framework allows to explore innovative alternatives that might be inconceivable otherwise. As well as this work recognizes the conclusions of previous endeavors, future theses can take some of the questionings that arose throughout the document and that were not developed deeply:

How to direct to an opposite (safer) direction the urban growth of a 400.000 people city such as Pasto? (Question for the discipline of urban design)

How to encourage people to combine their traditional piecemeal-growth construction techniques with foreign techniques that perform better during volcanic eruptions? (Question for the discipline of Architecture)

How to turn a volcanic environment / wildlife sanctuary into the core of a regional scale public space network, i.e. that serves to a metropolitan region and its neighboring villages such as the cities along the Galeras ring road? (Question for the discipline of urban planning and design).