

Risk assessment for improved land management from local to municipal level: example of Olancho, Honduras

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INTRODUCTION

The Department of Olancho covers 23,905 km² with 500,000 inhabitants, living in highly vulnerable rural areas. The topography is hilly; mostly protected rainforests characterize the area. Even so, intense activity takes place as part of the agricultural process of their conversion to cultivation and grazing areas. Traditional practices involve burning that regularly spreads out of control and become large forest fires that increase erosion. Tropical cyclones affect the area almost on an annual basis. This combination of frequent natural events, exposure and misuse of natural resources regularly leads to major material damage and even deaths. The Swiss Red Cross has been working in partnership with the Honduran Red Cross since 1998 after Hurricane Mitch, implementing reconstruction projects in various regions. As from 2005 and starting in Olancho, projects increasingly focused on disaster risk reduction, scaling up since 2009. The concept and practice of risk management applied in Olancho includes efforts towards reducing exposure to hazards, lessening the vulnerability of people and property, wise land management and improved preparedness to adverse events. Risk management is conducted comprehensively at the community, municipal and school level. The first step consists in performing risk assessments, including climate, disaster and health risks.

OBJECTIVE AND METHODS OF THE RISK ASSESSMENTS

Risk assessments aim at providing the relevant information basis for communities, authorities and project interventions. Combining the populations' traditional knowledge with scientific analysis (hydrology, geomorphology and land use), risk assessments strive to make the communities and authorities understand the root causes of the environmental problems that build up the current risks. Risk assessments are conducted for each municipality (see figure 1). They identify the main

critical sites in the territory, including threats, vulnerability and risk level. The integration of traditional and scientific knowledge is key not only for valid results but also for the creation of a common understanding and ownership for all measures to be implemented by all involved stakeholders. Multi-temporal analyses are performed to determine the advance of the agricultural frontier that leads to degradation.

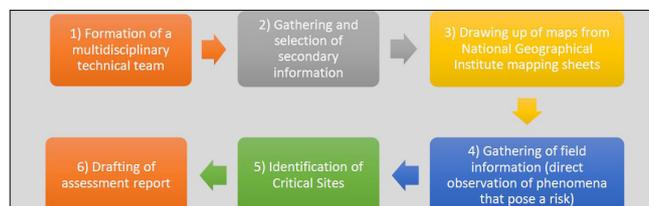


Figure 1. Risk assessment process

The studies provide technical recommendations for the short, medium and long term for each critical site. These are used to select the communities involved and to implement mitigation techniques such as soil conservation, slope stabilization and reforestation, and early warning systems. These techniques are easy to implement and cheaper compared to traditional civil engineering works. The recommendations also serve as proposal for a municipal risk reduction plan incorporated into the Strategic Municipal Development Plan. This gives relevance to the subject and enables the authorities to allocate more resources and response actions.

RESULTS

At the local level, communities know their exposure to the existing threats (see figure 2). Combined with training provided by the project they can respond appropriately. Community development is guided towards safe zones. As co-benefit, many critical sites have become productive land, resulting in increased benefits. Municipal and Local Emergency Committees which traditionally were active only in emergency response, have expanded

their focus towards prevention and mitigation activities.

At the municipal level, risk assessments foster development planning and territorial management. These help to determine the potential land use and generate use comparison maps (based on the map of potential use of the land and the map of the current use of the land), which reflect inappropriate land use that contributes to its degradation and instability. Based on these, municipal authorities have issued „No burning“ and „Safe Sites“ Ordinances. However, getting the authorities to base their decisions on the assessments' recommendations - without the customary political cronyism - remains a challenge, considering the constant turnover in authorities and the municipalities' economic constraints.

CONCLUSION

Risk assessments are invaluable tools for improving risk management; they are the basis for risk informed decision-making at all levels. Incorporating recommendations into Strategic Municipal

Development Plans has allowed an increase in projects focusing on these issues. Municipalities and communities have increased awareness of environmental problems and engage in prevention and mitigation actions (relocation of housing, reforestation, stabilisation of hillsides, etc.). These have served as a frame of reference for other State organisations and private NGOs. However, developing them is difficult due to the lack of statistical information regarding hydrometeorology (mainly with regard to droughts) and damages and/or losses from previous events. National cartographic information is extremely out of date (including map sheets or aerial photos) and very difficult to obtain. As for the gathering of field data, the size of the territory and the complex situations in terms of access to some areas also hinder efforts. Even so, we believe that it is well worth it, as the benefits achieved are greater than the effort involved. Communities are on their way towards achieving balanced processes for managing their resources and are more resilient to possible effects of future adverse events.

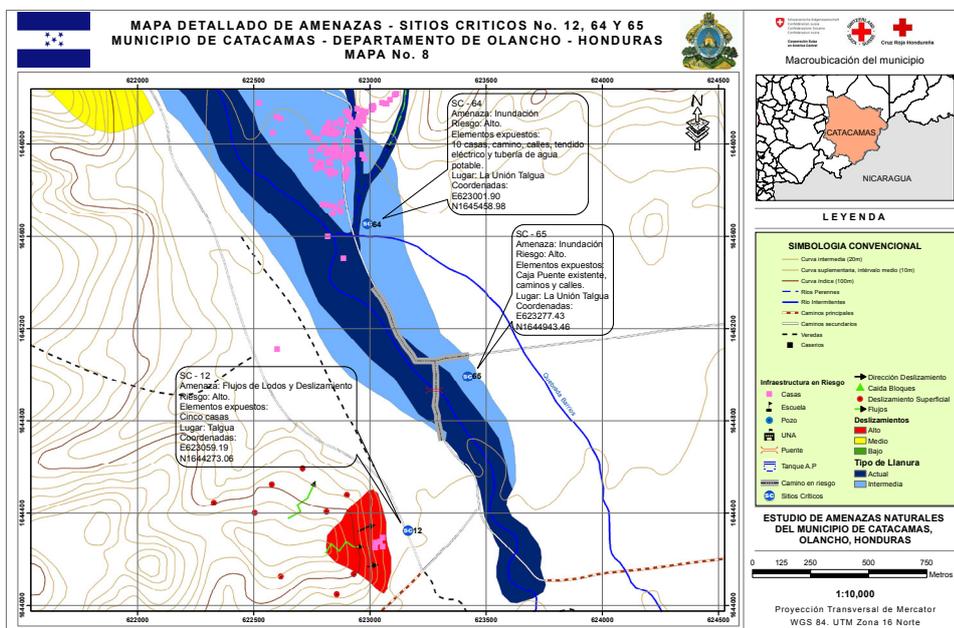


Figure 2. Hazard map of critical sites in the municipality of Catacamas, Olancho, Honduras

KEYWORDS

participatory risk assessment; risk management; risk mapping; community based approach; resource management

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