

Participatory Cartography for Disaster Reduction in Pogreso, Yucatan Mexico

Authors : Gustavo Cruz-Bello

Abstract : Progreso is a coastal community in Yucatan, Mexico, highly exposed to floods produced by severe storms and tropical cyclones. A participatory cartography approach was conducted to help to reduce floods disasters and assess social vulnerability within the community. The first step was to engage local authorities in risk management to facilitate the process. Two workshop were conducted, in the first, a poster size printed high spatial resolution satellite image of the town was used to gather information from the participants: eight women and seven men, among them construction workers, students, government employees and fishermen, their ages ranged between 23 and 58 years old. For the first task, participants were asked to locate emblematic places and place them in the image to familiarize with it. Then, they were asked to locate areas that get flooded, the buildings that they use as refuges, and to list actions that they usually take to reduce vulnerability, as well as to collectively come up with others that might reduce disasters. The spatial information generated at the workshops was digitized and integrated into a GIS environment. A printed version of the map was reviewed by local risk management experts, who validated feasibility of proposed actions. For the second workshop, we retrieved the information back to the community for feedback. Additionally a survey was applied in one household per block in the community to obtain socioeconomic, prevention and adaptation data. The information generated from the workshops was contrasted, through T and Chi Squared tests, with the survey data in order to probe the hypothesis that poorer or less educated people, are less prepared to face floods (more vulnerable) and live near or among higher presence of floods. Results showed that a great majority of people in the community are aware of the hazard and are prepared to face it. However, there was not a consistent relationship between regularly flooded areas with people's average years of education, house services, or house modifications against heavy rains to be prepared to hazards. We could say that the participatory cartography intervention made participants aware of their vulnerability and made them collectively reflect about actions that can reduce disasters produced by floods. They also considered that the final map could be used as a communication and negotiation instrument with NGO and government authorities. It was not found that poorer and less educated people are located in areas with higher presence of floods.

Keywords : climate change, floods, Mexico, participatory mapping, social vulnerability

Conference Title : ICDMGSP 2020 : International Conference on Disasters Management, Geomatics Solutions and Planning

Conference Location : Berlin, Germany

Conference Dates : July 23-24, 2020