PMAC 2023, Bangkok, Thailand

Are Climate Refugees Alright?: Developing a Geographic Information System to Address Post-Disaster Basic and Health Needs in Temporary Housing Facilities, Philippines

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INTRODUCTION

The Philippines is a country that often experiences climate change-related natural disasters. However, temporary housing facilities for internally-displaced persons (IDPs) may not meet all health needs.

This project aimed to develop a health needs assessment (HNA) tool and a resource-based Geographical Information System (GIS) for facilitating post-disaster responses for IDPs in evacuation centers.

METHODS

This is a two-phase study that will be piloted in six different disaster-prone communities in the Philippines.

Phase 1: Develop a health needs assessment tool for IDP shelters

Phase 2: Develop a GIS tool that integrates demographic, health, and basic needs data from different IDP shelters
The communities were selected based on combined climate- and weather-related risk factors.

RESULTS

The HNA tool was developed in accordance with existing needs assessment tools, guidelines, and circulars on disaster management. The drafted tool was then validated through feedback surveys and consultations with pertinent government agencies. Evaluation of the draft HNA tool covered the (1) development and composition of indicators, thresholds, and quality criteria, (2) appropriateness of assessment frequency, (3) availability of required information, and (4) relevance to local settings.

A web-based GIS application is under development that integrates the HNA tool and will be the primary platform for encoding the HNA indicators and visualizing the information.

The first of three development sprints was recently concluded, in which the stakeholders reviewed the digital version of the HNA tool input interface. The LGUs expressed positive and detailed feedback. The ease in navigating the web app and its comprehensiveness were appreciated. The main request of stakeholders was for the creation of an offline version of the web-based application; this will be considered in the next sprint.

The stakeholders who will make up the interagency network at both the national and local levels are, as recommended: Local Chief Executive, the health, planning, social welfare and development, and disaster management offices.

The effectiveness of the GIS tool is yet to be assessed as the main dashboard and map layers are still under development.

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DISCUSSION

The study is currently still ongoing multiple feedback sessions with local stakeholders.

The main strength of this project is that the tool development is done in multiple phases using the Agile method. The HNA tool and the GIS are being co-developed in direct consultation with the LGU end-users to ensure that the final GIS will be user-friendly and apt for all the health needs of local communities. Furthermore, by involving multiple stakeholders, it aims to streamline the current tools of various government agencies. This can help avoid delays and redundancies in data management and promote better inter-agency collaboration during disaster response.

Finally, evaluation will be done through (1) simulation using historical data of the hydrometeorological disasters in the implementation sites and (2) a heuristic approach using Kinner's tool which has been used for the evaluation of GIS in disaster risk reduction and management.

THEME	SUBTHEME	# of Questions
Site management	Event information	7
	Site Details	12
	Spaces	10
	Survey Details	6
	Operational Supplies and Equipment	4
	Safety and protection	7
	Shelter quality	5
Food security and nutrition	Community kitchen supplies	3
	Food stock	4
	Nutrition Monitoring	12
WASH	WASH Equipment	3
	Water supply access, quality, and facilities	9
	Excreta Disposal & Drainage	8
	Solid Waste Management	6
	Hygiene Kits	3
	Family Kits	1
Population Profile	Population demographics	9
	Vulnerable population	18
Health Action	Medical Supplies and Equipment	5
	Disease Monitoring	14
	Health-related Services and Personnel	12

Figure 1. HNA Tool Breakdown of Information

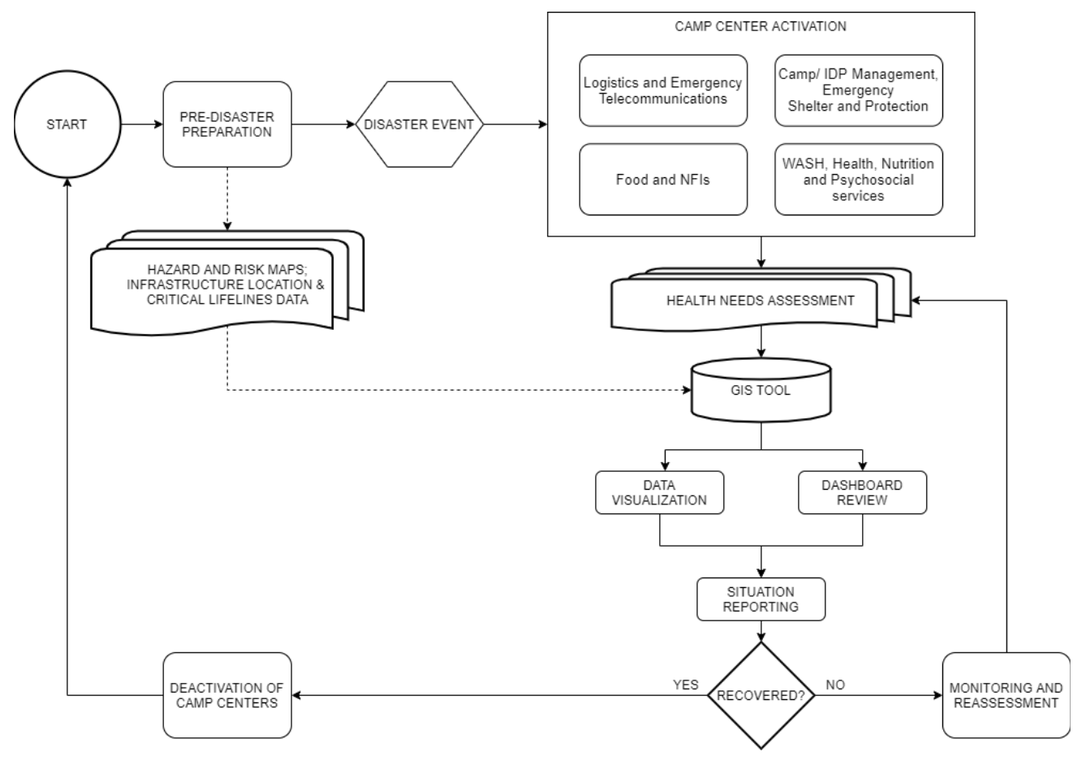

Figure 2. HNA-GIS Process