

CAPABILITY OF PUBLIC HEALTH CENTERS TO MANAGE THE RISK OF CLIMATE CHANGE

Case Study: Padang, Indonesia

Putri Nilam Sari*

*Environmental Health Research Group, Department of Occupational and Environmental Health, Faculty of Public Health, Andalas University, Indonesia
nilam@ph.unand.ac.id

Introduction

Indonesian Ministry of Health already has regulations about the adaptation strategy of the health sector to the impact of climate change and guidelines for identifying health risk factors due to climate change (Indonesian Ministry of Health, 2011). The basis for this legislation is Indonesia's susceptibility to extreme weather events, including longer and more erratic dry and wet seasons and high levels of pollution in urban areas.

The high risk of health problems caused by climate change ranges from diarrhea, lack of water provision, water quality deterioration, and respiratory disorders (Sari, 2018). These conditions are exacerbated by the poor sanitation behavior of the affected population (Sari & Gusti, 2018; Sari & Nofriya, 2018). Food shortages also become a threat due to the lack of water supply (David & Ploeger, 2014) and have an impact on nutritional problems.

Padang City area is susceptible to floods and extreme heat (Fajrin & Driptufany, 2017). In order to prevent the widespread effects of climate change, it is imperative to evaluate the resilience and capacity of Public Health Centers (PHCs) as a first-level healthcare facility in each sub-district to become a center for community health development, encouraging community participation and offering a full range of health services. These issues lead to the purpose of this study, which determine the PHC potential to actively participate in reducing the hazards associated with climate change.

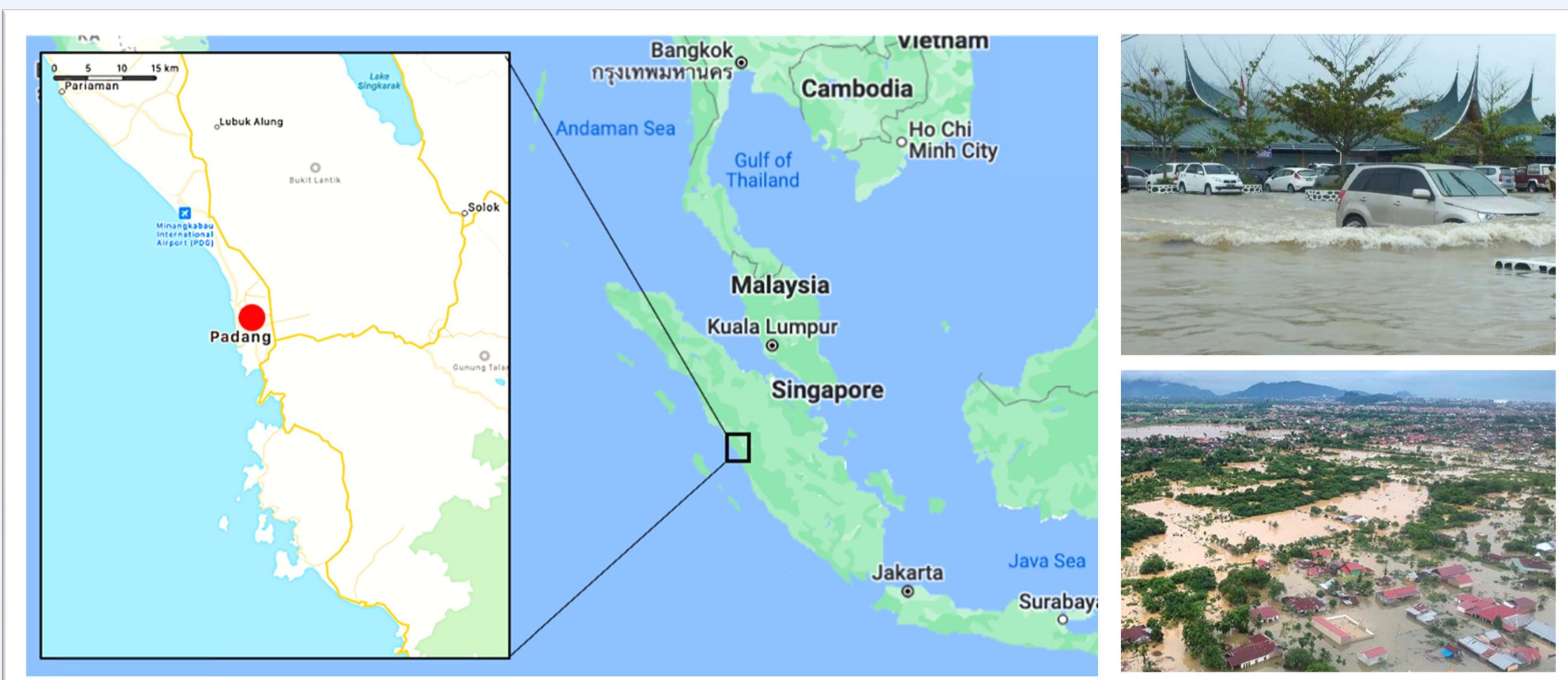


Figure 1. Padang City's Vulnerability to the Impact of Climate Change

Methodology

Study Design

This research was conducted with a qualitative approach. Data were collected using in-depth interviews, guided by semi-structured questions. Informant were asked about perception of climate change; provision of health services for climate-based problems; management of institutions to anticipate climate problems; surveillance and early warning systems; and cross-sectoral collaboration (Boyer, 2017).

Sampling Method

The study was conducted at three PHCs in Padang City from three sub-districts. These three sub-districts have the most vulnerable population to the risk of climate change compare to other sub-districts in Padang City. Sample determined by purposive sampling as many as three informants (Head of PHC, Environmental Health Officer and Disease Control & Eradication officer) in each PHC. The consideration of informants selection because the climate problem is related to their division at PHC.

Data Analysis and Validation

Data analysis was performed by content analysis, which classified research data in accordance with the similarity of features and compared with theory. To ensure the validity of the data, triangulation was carried by re-checking the data from various sources and methods.

Research Ethics Considerations

This study was carried out after obtaining official permission from the Padang City Government and Padang City Health Office. Then informants were interviewed after signing the agreement. To guarantee the confidentiality of provided information, all transcripts, responses, and records are stored in a security folder. The personal data of the interviewee is not published without individual consent.

Reference

- Ahmad, M., Laenggeng, A. H., & Andri, M. (2018). Evaluation basic six main programs of Tombiano Community Health Center, West Tojo, Tojo Una-Una Regency. *Jurnal Kolaboratif Sains*, 1(1).
- Boyer, C. J. (2017). *Health Sector Capacity to Manage Climate Change in the Lao People's Democratic Republic: Perspectives from Key Stakeholders*. University of Washington.
- David, W., & Ploeger, A. (2014). Indigenous knowledge (IK) of water resources management in West Sumatra, Indonesia. *Future of Food: Journal on Food, Agriculture and Society*, 2(1), 52–60.
- Fajrin, & Driptufany, D. M. (2017). Variations in land surface temperature of Padang City based on Landsat 7 ETM+ and Landsat 8 OLI/TI images. *Jurnal Momentum*, 19(2), 34–40.
- Indonesian Ministry of Health. (2011). *Minister of Health Regulation Number 1018 of 2011 concerning The Health Sector Adaptation Strategy to The Impact of Climate Change*
- Sari, P. N. (2018). *Risk assessment of climate change impact on public health in urban heat island area, Padang City* (Research R). Faculty of Public Health, Andalas University.
- Sari, P. N., & Gusti, A. (2018). Sanitation Behavior Among Flood Disaster Victims In Bukittinggi City – West Sumatra. *Sriwijaya Journal of Environment*, 3(2), 87–93.
- Sari, P. N., & Nofriya. (2018). Flood disaster, diarrhea and community resilience in water provision: a case study in The City of Bukittinggi. *Jurnal Kesehatan Masyarakat Andalas*, 12(2), 23–29.

Results

Perceptions of climate change

Incomprehensive knowledge and awareness related to climate change

Providing health services against climate-based diseases

PHCs do not have an annual plan to provide programs focus on reducing climate change risk

Surveillance and early warning systems

No specific surveillance program and PHCs do not use official climate data for making early warning prediction

Institutional management

No specific instruction and funding from the central government for managing climate-related health risk



Cross-sector cooperation and coordination

PHCs offer workshops with neighborhood associations, but no coordination with other institutions

The impacts of climate change, such as Dengue Hemorrhagic Fever (DHF), malaria, diarrhea, Acute Respiratory Infection, and other diseases, are integrated with the main program of the PHC. The budgeting and allocation of health resources are also included in those activities. However, the recurring nature of climate-based health problems continues to be a burden on PHC due to the lack of community awareness to change their conditions. PHC has worked according to health procedures, but many factors have influenced the recurrence of the same diseases due to the climate in the community.

Specifically in Indonesia, PHCs have six main activities and specific development programs that still need to cover comprehensive climate issues (Ahmad et al., 2018). Having said that, when a crisis situation arises due to climate disasters, the PHCs are ready to provide curative services.

In order to gather vulnerability data from the community and subsequently create a greater concern for climate change, PHC can encompass community services in every village and hamlet. This can also be used as a method to increase public awareness about climate-related health hazards.



Figure 2. Visiting of PHCs officers to community in providing health services and promotion

Conclusion

This research indicates that PHCs, as the closest health institutions to the community, still need to develop a special approach to managing climate-related health problems.

The health sector should be fully involved in managing climate change risks since the health problems that arise from climate change are too significant to ignore. Existing regulations must be accompanied by adequate human resources and funding support in implementing health programs to reduce climate change risk.

Several things that need to be done to increase the involvement of PHCs in managing climate change risks are:

1. Provide special training to health workers regarding climate change so that they can educate the community to increase their awareness of the changing climate.
2. Utilizing climate data in mapping and predicting climate change risks to plan programs to prevent climate-related health problems and meteorological disasters.
3. Collaboration between stakeholders working in the field of climate and environment, such as the Environmental Service, Meteorological Agencies, and Disaster Management Board to make annual plans to manage developing climate issues.
4. Community Health Centers do not only focus on health problems that often arise during extreme weather but also prepare for further health risks that may occur, such as mental and nutritional problems, as well as mortality and morbidity due to extreme weather.

Acknowledgments

I am grateful to the Faculty of Public Health, Andalas University, for funding this research through the DIPA funding.

Thank you to all public health professionals and the management of the Public Health Center who contributed to the data and information reported in this research.