

Flooding risk app will help save lives and allow for improved disaster management

Abhirami Sivarajan, Rajveen Kaur, and Chua E. Heng, Asia Pacific University of Technology & Innovation, Kuala Lumpur, Malaysia

Summary

Flood victims and those people in zones prone to flooding need a better solution to overcome the effects of the devastation. A flood mitigation application provides a great avenue for both victims and rescue centres to communicate and take precautionary measures in a crisis to minimise the effects of the flood.

Introduction

Last year, the Emergency Event Database (EM-DAT) recorded 432 disasters it categorised as ‘catastrophic’, flooding accounted for the majority of these with 223 incidents (CRED, 2022).

Key messages

- Raise awareness of the effects of flood.
- Implementation of a one-stop flood mitigation application to minimize the effects of flood.
- Government should implement this application policy globally.

Human impact: total affected

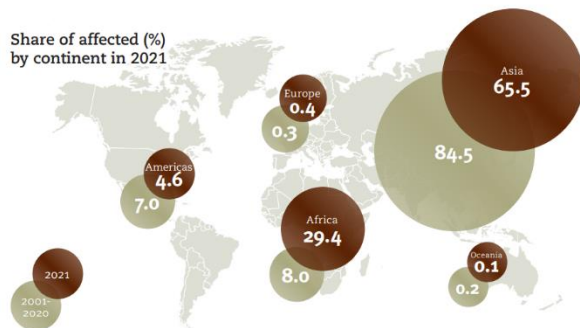


Figure 1: Human Impact from Natural Disasters (CRED, 2022)

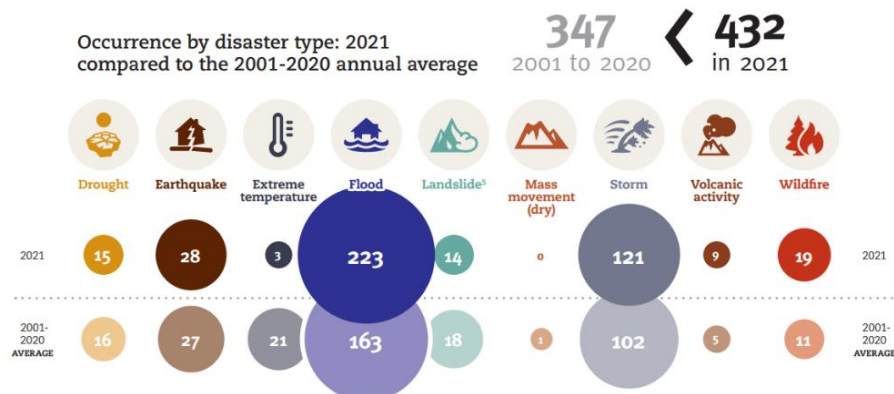


Figure 2: Occurrence by disaster type (CRED, 2022)

The numbers of disasters have soared compared to the average flood incidents of 163 per year from 2001 to 2020. India witnessed a series of devastating floods from June through to September 2021, during the monsoon season, that resulted in 1,282 fatalities (CRED, 2022).

Severe flooding occurred in Henan, China, in July 2021, costing more than \$16.5 billion USD, caused 352 fatalities, and affected a population of 14.5 million. At the same time, 260 people perished in Afghanistan’s Nuristan floods. The second-most expensive disaster, The Central European floods, and associated landslides, in the same month, cost the

German economy \$40 billion USD (CRED, 2022). Raising awareness and taking precautionary actions on flooding are needed as an imperative public safety measure.

About the project



Figure 3: Flood app main screen

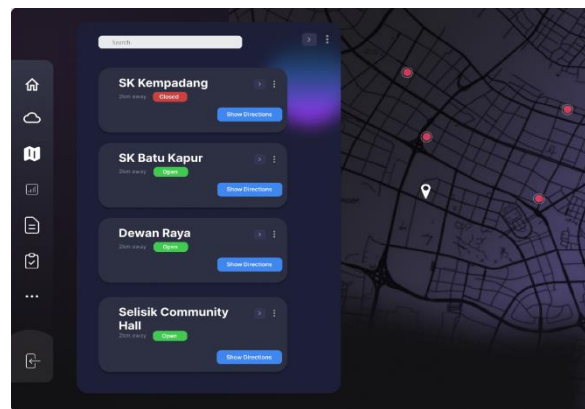


Figure 4: List of relief centres

This app will be an aid to flood mitigation giving all the information people need in one area. It will bridge the gap between flood mitigation awareness and swift mitigation procedures. The app provides an array of services for residents in flood-prone areas to prepare in advance in the case of disaster.

The aims of this project are:

1. To mitigate the flooding effects by producing a one-stop platform whereby relief centres and victims can communicate with one another during flooding.
2. This will save resources, such as manpower, time, food, drinks, and the app will include the evacuation centres allocated for victims during flooding.
3. Educating and raising awareness of the dangers to the public in flood-prone areas in a bid to minimise damage and the likelihood of fatalities caused by flooding.

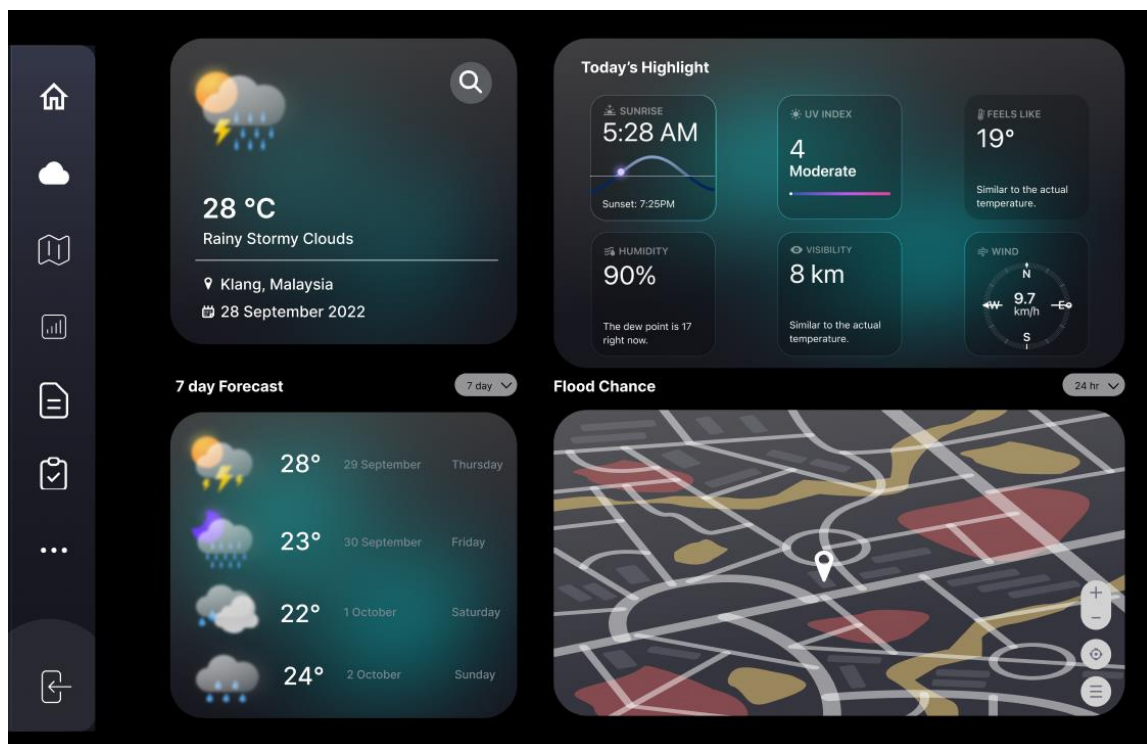


Figure 5: The weather forecast part of the app

The impending dangers will be explained by a weather forecast page to provide more insights for the residents on why the app has concluded that there is a high chance of flooding within their areas.

The app will also provide a list of relief centres that the public can go to at times when there is a risk of serious flooding in their area. Once a flood occurs within the person’s location, the app will route them to their nearest relief centre, even if there is an electricity outage.

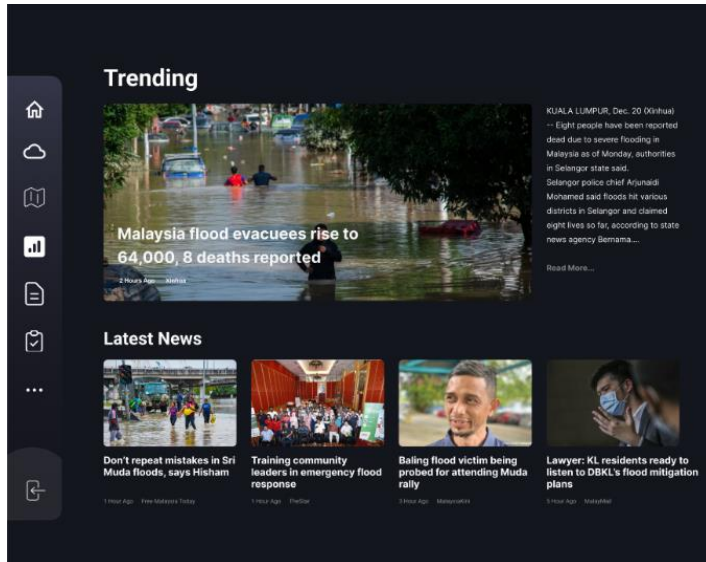


Figure 6: The news page of the app to keep people informed

Sometimes, people might not be able to carry all their important documents with them to somewhere safe. This app provides cloud storage for them to upload their important documents into the application.

To ensure that all people are aware of the current flood situation, a news page is provided to increase awareness. When a flood is predicted to occur, the application will display procedures, checklists, and guidelines for citizens to follow and prepare before flooding happens.

For the relief and response centre agents, they will be notified of the areas that will be flooded including its severity to ensure enough resources are prepared and allocated to assist victims. This should help to effectively mitigate flood impacts. When a region is starting to flood, the

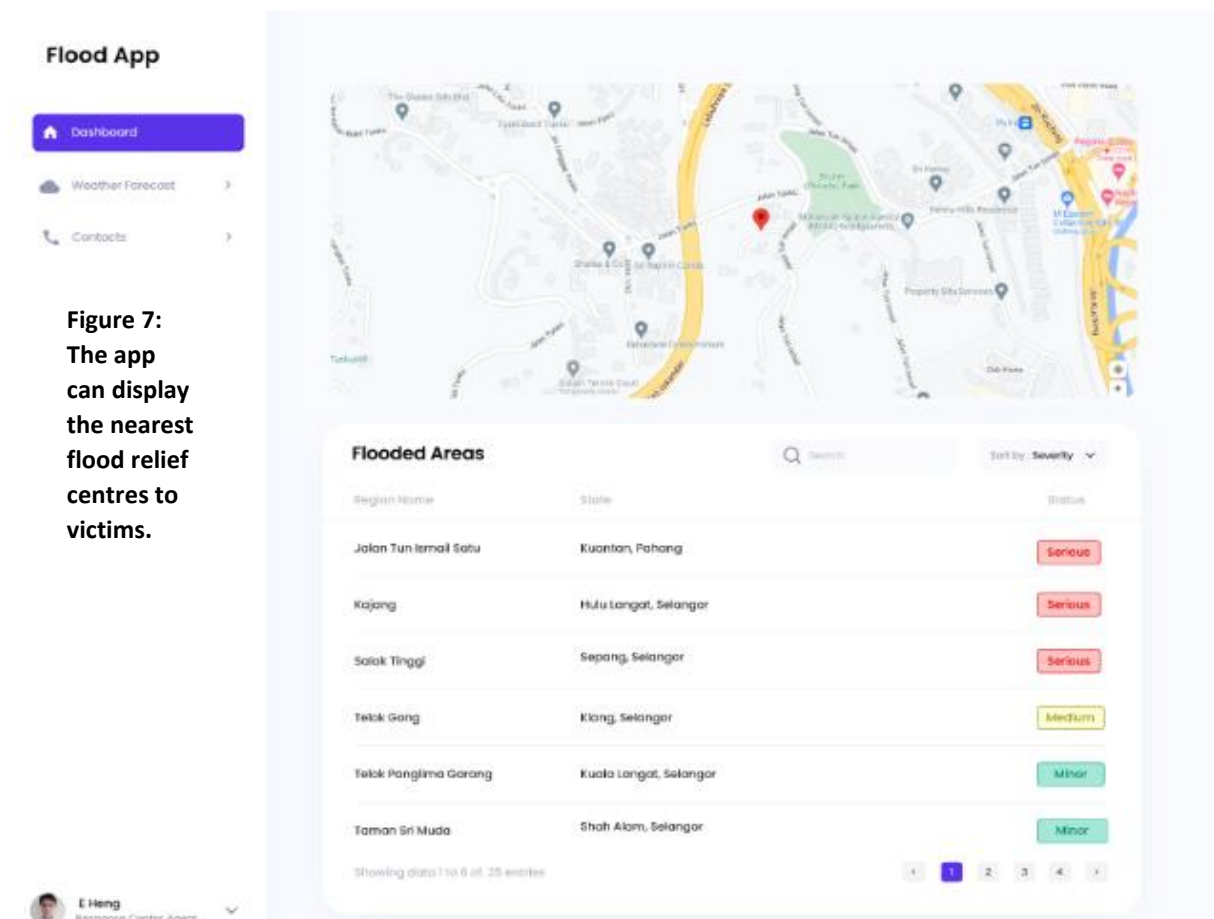


Figure 7: The app can display the nearest flood relief centres to victims.

response centre agents will be able to direct help to the areas that are most severely affected ensuring all resources are allocated adequately and efficiently to save the lives of as many people as possible in the devastated area.

Results, conclusions, and recommendations

This flood mitigation app has been shown to very useful in educating and raising awareness among the public on ways to prepare before flooding, and also the actions to be taken during flooding. It has the added benefit of improving the current flood management system of rescue centres with the time-saving allocation of resources for the victims. This should reduce the effects of flooding and number of flood fatalities. This user-friendly app will be free for users to download, register and use daily. Therefore, policy makers can implement this flood risk management and awareness app policy to the public at no cost, mitigating the effects of flooding for both the public and rescue centres.

Recommendation: Governments should implement this app policy globally

The participation of governments in this project is vital as they play a huge role in allocating resources during natural disasters. With the government considered as a stakeholder, all stakeholders are in one place and resources can be allocated wisely, and time can be reduced to save as many people as possible.

About the authors

Abbhiraami Sivarajan is a lecturer and advisor in the Integrated Sustainability & Urban Creativity Centre (ISUC) Student Chapter at the Asia Pacific University in Kuala Lumpur, Malaysia. The student chapter's main aim is to create a more sustainable world focusing on UN Sustainable Development Goal 13, Climate Action.

Rajveen Kaur is currently pursuing her final-year degree in Banking and Finance with a specialism in Financial Technology (FinTech) at the Asia Pacific University of Technology & Innovation. She completed her foundation studies in Business and Finance in 2019.

Chua E. Heng is currently in his first year of Bachelor of Science (Hons) In Computer Science at Asia Pacific University of Technology & Innovation. He developed an interest in contributing to solving environmental issues after volunteering in the Integrated Sustainability & Urban Creativity Centre (ISUC) Student Chapter at APU. He is the winner of the Xylem REACH Student Hackathon in 2021.

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