

1. Introduction

Forecast-Based Early Action (FbA) is a promising disaster risk reduction technique where communities take proactive steps with the help of **accurate forecasting before a disaster strikes**. Timely FbA can save more lives and minimize impacts on communities in emergency and recovery stages. However, the FbA needs some specific forecast window (e.g., 7 to 9 days) from impact identification to intervention deployment. **For cases of rapid on-set disasters like flash floods (FF), such forecast windows is difficult to identify as these disasters occur within 5/6 hours.**

In this study, we focus on how the last mile community takes anticipatory action (AA) in such cases.

2. Objectives

- To investigate how to improve more effective & inclusive forecasting.
- To investigate community-led AA during normal & extreme FF events.

3. Background & Study Area

Water Level vs Date (Laurergerah Saktiarkhola)

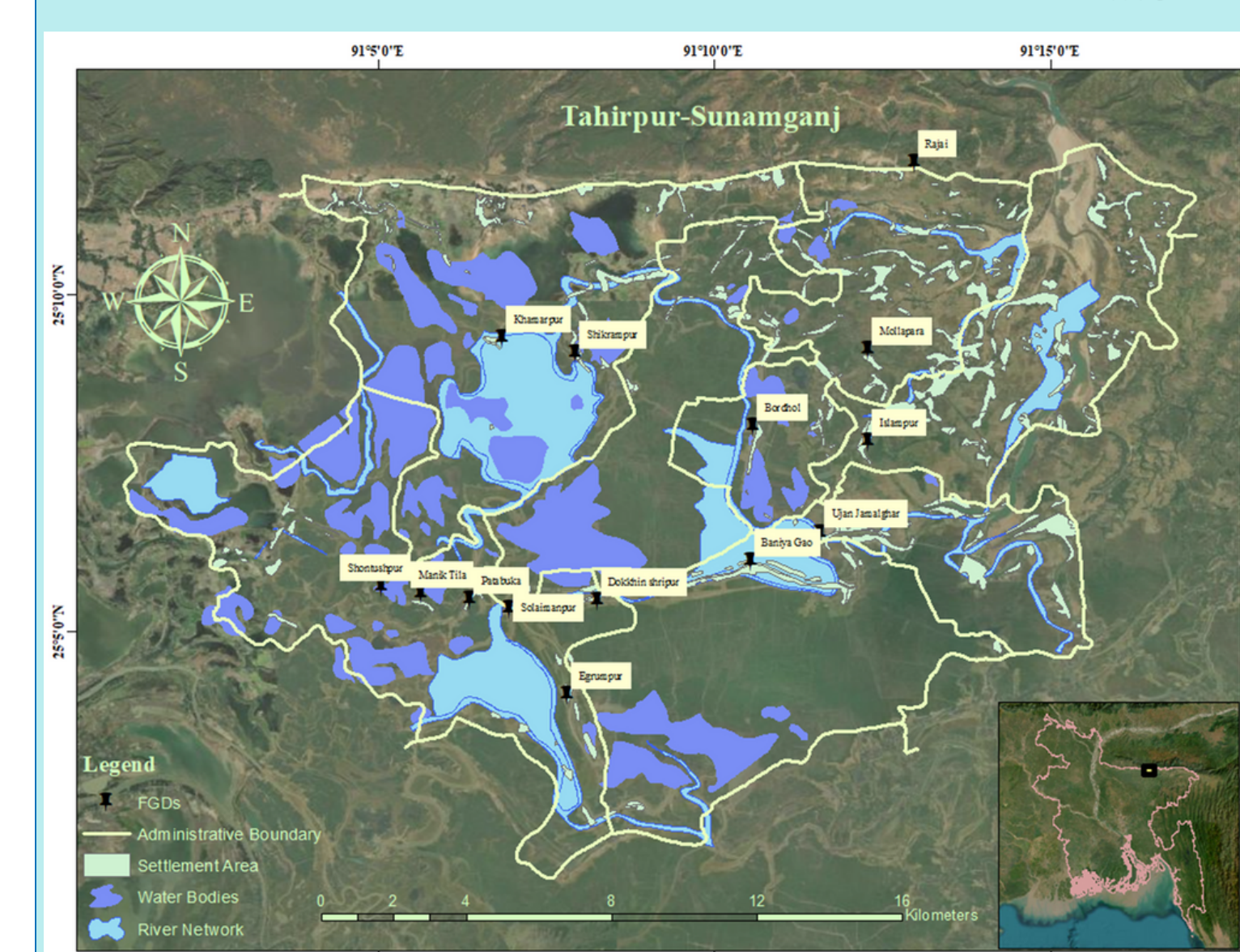
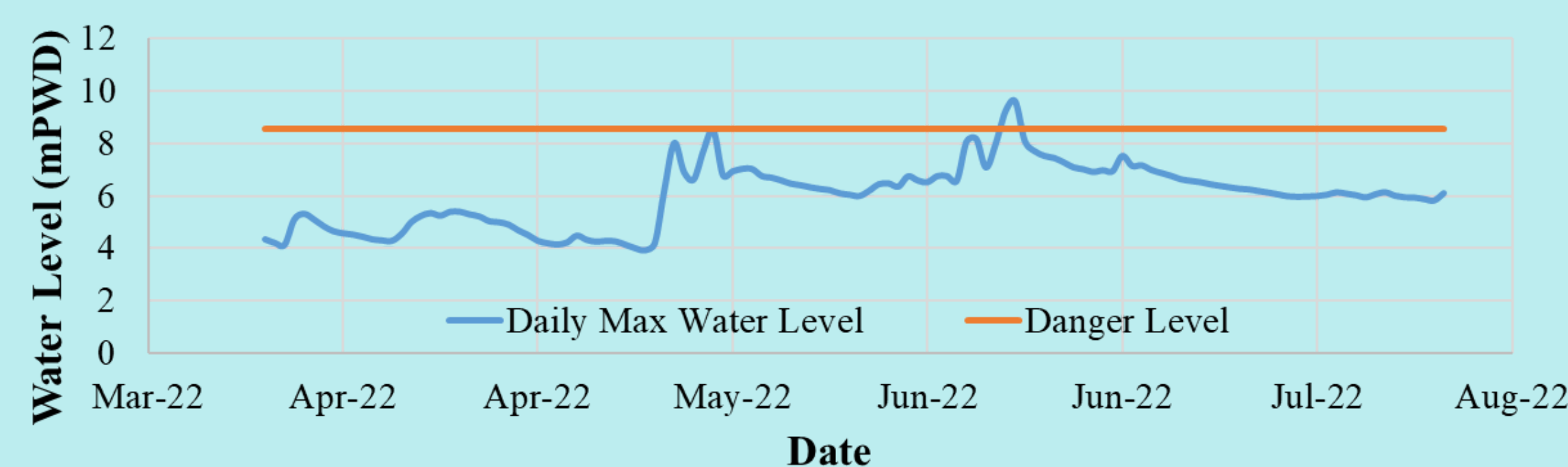


Fig 01: Tahirpur Upazila, Sunamganj

Tahirpur is an upazila in the Sunamganj District of Bangladesh's Division of Sylhet. The coordinates for Tahirpur Upazila are 25.0917°N 91.1750°E. It was one of the worst hit regions in 2022 FF.



Fig 02: 2022 FF Scenarios

4. Methodology



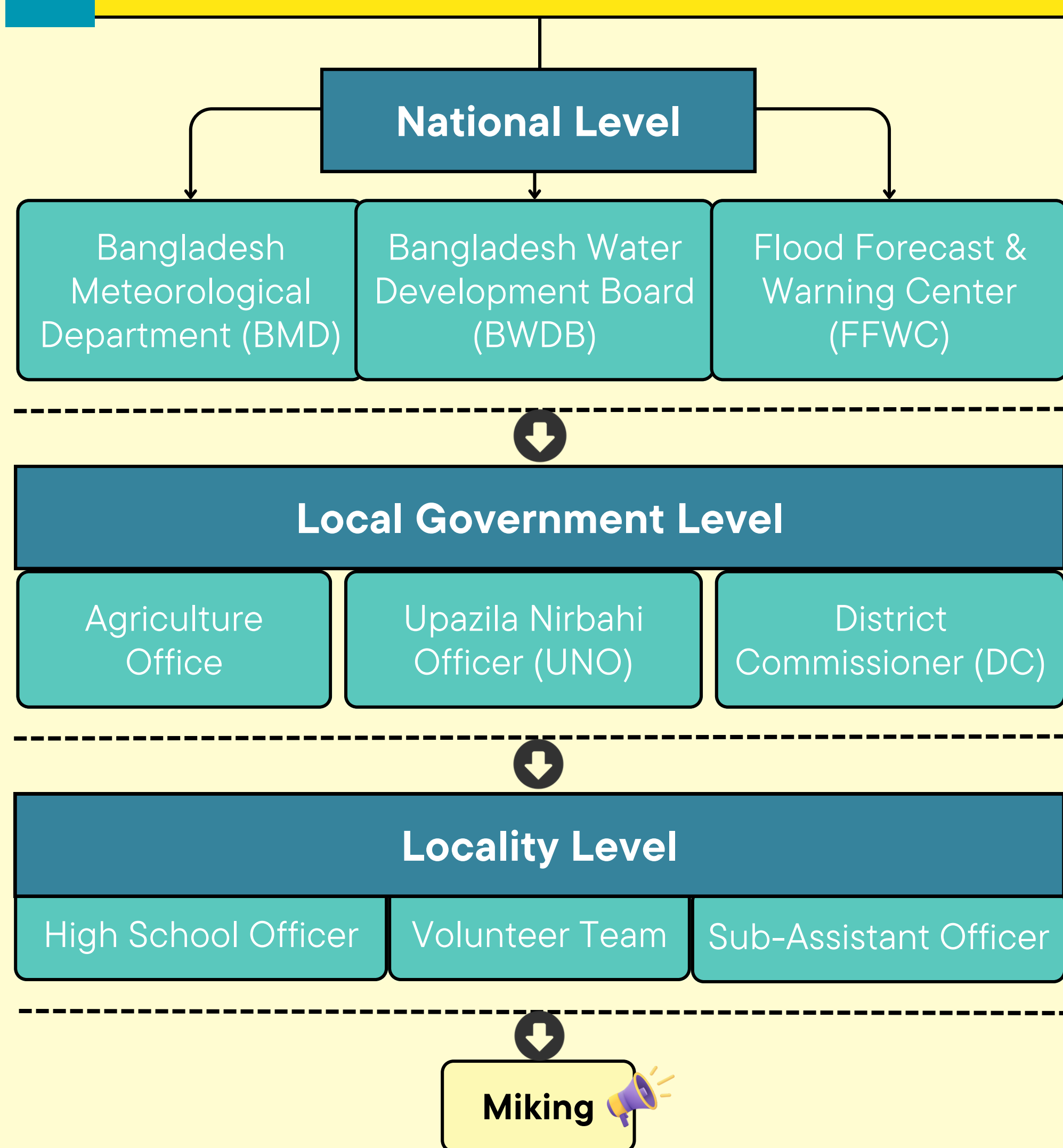
Fig 03: Focus Group Discussions



Fig 04: Key Informant Interviews

5. Findings

1 Early Warning Message Spreading Frame Work



Limitations

- The Miking System not being executed
- Discernible distance from village to village which disrupts spreading news
- Short period to take action or receive messages.

2 Indigenous Knowledge

- People in Tahirpur Upazila can **observe Waterfall in Indian Hills** from Bangladesh side & predict FFs subsequently.
- Similarly, they **observe Rainfall and flow of water in upper Indian side** to assume the arrival of monsoon flash floods.
- Residents attentively **investigate clouds in the sky and note the presence of stormy winds**, particularly southwesterly winds blowing from India.
- During monsoon, people constantly **monitor the water levels in the Jadukata and Patlai Rivers**.
- According to a few elderly fishermen, **muddy water with excessive cool temperature water in the Jadukata and Patlai rivers** implies a post-monsoon flood.
- Residents stated that **closure water levels and sluice gate water levels** assist them in forecasting imminent FFs.

3 Local Anticipatory Actions Taken by the Inhabitants

- Raise Plinth Level of their House** with sand bags & bamboo sticks and seldom with CC blocks.
- Install lofts in homes** to raise household items (beds & tables).
- Plant Protective Plants** (Hijal, Karach, and Haor forests) to protect homes from Apal (the flood wave).
- Build Storage platforms (Macha)** to store dry foods & craft **Portable stoves**.
- Fill Cement bags** with soil or sand to use as **protection** against waves.
- Use bricks to raise the height of household items** such as beds and tables.
- Raise Latrines & Sanitation System levels** for protecting from contamination & continuing usability.



Fig 05: Increasing Plinth Level



Fig 06: Installing Lofts in Homes



Fig 07: Protective Plantation



Fig 08: Portable Stoves



Fig 09: Protective Cement Bags



Fig 10: Raised Latrines

6. Discussion & Conclusion

- Conducted FGDs and KIs concluded that the local people have some indigenous knowledge that they use to predict the occurrence of flash floods.
- Additionally, The community people take some adaptive actions (AAs) before any FF happens. These actions and techniques used by the local people can be beneficial for other parts of the world to learn from, particularly as the world experiences more FFs due to climate change.
- By implementing indicator systems with scientific knowledge, the damage caused by flash floods can be minimized.
- The Northeast region of Bangladesh has a long history of flash floods, so the solution developed could be helpful for other flood-prone areas.