

The Guwahati Living Lab for Flood Management

A brief summary of the Zoo Road Living Lab – 29 March 2025



Indian Institute of Technology Guwahati

The Zoo Road Living Lab

Rooted in European contexts, the application of Living Labs in India is quite limited. However, they can still hold great potential in Indian scenarios, particularly while seeking innovative, participatory, and inclusive solutions for disaster risk reduction and climate adaptation. On 29th March, 2025, the city of Guwahati, Assam, witnessed its first living lab where residents and government officials came together to play a *serious game* - “The Flood Dilemma”. The Indian Institute of Technology Guwahati (IITG), under the aegis of project “Lodestar” commenced this lab at a local residence in Zoo Road, to initiate dialogue between different stakeholders and understand the recurring problem of floods in the city. By bringing together residents, academia, civil society organizations, and government, the Guwahati Living Lab (for flood management) (GuLL) hopes to overcome institutional silos and co-develop an Early Warning System for floods in the city. Zoo Road in Guwahati and many of its by lanes is a chronic flood affected area. The GuLL on 29th March saw participation from around 22 residents living in and around the area, including other nearby localities like Nabin Nagar, Chandmari etc. that suffer from chronic water logging and flooding issues during heavy rainfall events. The event was also attended by 8 representatives from key government agencies such as the Assam State Disaster Management Authority (ASDMA), Guwahati Municipal Corporation (GMC), Water Resources Department (WRD), Fire and Emergency Services (F&ES), and Department of Housing and Urban Affairs (DoHUA).



This brings us to the question – What are Living Labs? Also, what is a “serious game”?



Living labs are spaces that ensure a match with the actual needs and aspirations of the users while considering the local and institutional contexts, cultures, and creativity potentials (ENoLL, 2006). Popularized by Professor William J. Mitchell of MIT, the concept of living labs first emerged in the late 1990s, gaining momentum particularly in Europe towards the mid-2000s. The European Network of Living Labs (ENoLL) established in the 2010s formalized and

defined the approach as “user-centred open innovation ecosystems” that integrate research and innovation through co-creation in real-world environments. Collaboration and co-creation (between multiple stakeholders such as researchers, businesses, policymakers, and end-users) lie at the heart of these labs. Moreover, they promote horizontal and iterative learning in an open, inclusive, and power-sensitive environment. Today, Living Labs continue to evolve, blending technology development with participatory design and their social uptake to address modern challenges.

Coming to serious games - What is it exactly?

As the name suggests, a serious game is indeed a game and includes fun and engaging elements like story-telling and rewards, but is designed for purposes beyond pure entertainment. Its primary goal is to educate, train, simulate real-world scenarios, or raise awareness about specific issues in an innovative and interactive manner. Serious games are widely employed in fields such as healthcare, education, urban planning, and sustainability to raise awareness and develop practical solutions for common social and environmental issues. Especially when built on scenarios, in the case of floods and/or drought disasters, they are a creative means to trigger people’s intelligence, knowledge, shared experiences, and pave the path for alternative responses. Through their shared focus on real-world problem-solving, user engagement, and innovation, serious games and living labs are closely linked and may be the future of community engagement in urban disaster risk reduction. The Flood Dilemma serious game played in the 29th March Zoo Road GuLL was designed by a Netherlands based think tank and consultancy specializing in serious games - Meta Meta.



The game simulated a real-world flood scenario in Guwahati and encouraged stakeholders to share perspectives on flood responses – before, during, and after the flood event. Stakeholder

cards like citizens, small business owners, government, academia etc. were distributed amongst the participants to note their responses against a simulated flood scenario of one fateful day when the city woke up to a morning of flooding and inundation following a night of incessant and heavy downpour. To make things worse there is also a power outage. This comprised simulated Event no. 1. The second event tried to invoke responses on a post-flood



scenario, when after the waters recede, a lot of blame game happens and fingers are pointed at the different players. Based on this scenario, the second event aimed to identify what an Early Warning System (EWS) for Guwahati should ideally be like in terms of its warning mechanism. What is it that residents want to be

warned for and in what manner would they want to receive these warnings? Furthermore, what would their response be once they receive such flood early warnings?

Key takeaways from the serious game and overall Living Lab session

As the two simulated events of the flood dilemma played out and the responses received from all stakeholders were summarized, it became quite evident that there exists a clear communication gap between the citizens and the government departments. Residents relied on their own experience and knowledge, family members, and social networks for information and support during flood situations. Depending upon the gravity of the situation, those who could afford would skip going to their workplace for the day and wait for things to get better. Everybody prioritized getting electricity restored in the area, arranging for drinking water, charging their phones, and saving essentials like important documents and belongings of value.

The most common mode of receiving real-time information on flood status was news and social media. Nearly every citizen, academia, and small business owner stakeholder highlighted the absence of a EWS for floods in the city and the lack of a single uniform system



for receiving updates or prior warnings from the government. Some did acknowledge receiving weather forecasts and rainfall probability from agencies like the Indian Meteorological Department. However, they noted that such forecasts do not clarify whether

flooding would occur or identify the areas that might expect inundation and water logging. Everybody, including the government stakeholders, informed that they would like to receive warnings and updates of not only the probable timing and intensity of rainfall, but also the predicted flood areas.

Likewise, all the representing government agencies reached out to each other and stationed field officers for both early warnings and real-time information. Every department has a Standard Operating Procedure (SOP) for responding to flood situations and information collection. For example, the Fire and Emergency Services collect and receive information from the State and District Emergency Operating Centres and size up the scene as per their mandate and SOP. Many a times flood response on part of the concerned line departments take time given the limitations of manpower and other logistics. While intra-department coordination existed to certain extent, there was limited information flow between the public and the government. Representatives of the Guwahati Municipal Cooperation did highlight setting up civil society groups comprising of social workers, residents, and ward representatives such as the Councillor in some localities around Guwahati. They are all connected through Whatsapp groups and members can share photographs of blocked drains and areas requiring desiltation works directly with GMC through these social platforms. However, these initiatives of GMC were yet to be widely known in the public and the officials acknowledged that they would need to create more awareness in this regard.

As the existing gaps in communication came to be realized by all stakeholders, there was mutual agreement that proper channels need to be developed that would reduce this gap and enable the public to reach out to the concerned departments directly. The concerned parties also agreed that the flood issue in Guwahati cannot be managed by institutions and citizens working in silos. Sustainable solutions can be designed only through the collaborative and coordinated efforts of the public and urban line departments.

Some of the suggestions that were put forward included –

1. Setting up of designated helpline numbers for citizens to call in case of flood emergencies and for real-time flood status.
2. The issued warnings would need to go beyond mere weather forecasts and provide predictions of the probable locations of inundation as well. These predictions would also need to be accurate. Information on real-time water logged areas and streets would also need to be provided.

3. Warnings should be disseminated through multiple mediums – Mobile (SMS, Whatsapp etc.), social media platforms, television, radio, sirens and mike announcements. Sirens and Public Announcement Systems that used to be a common alerting system during wars in the past emerged as popular disseminating mediums for the stakeholders in Guwahati.

4. For future Living Labs in Guwahati, more line departments should be invited. Additionally, it would be beneficial to invite the decision-makers in these departments for actual changes to happen.

Overall, despite being the first of its kind in Guwahati, the Living Lab in Zoo Road proved to be a successful event. All participating stakeholders applauded the initiative by IITG and for facilitating the much needed dialogue between citizens, government, and academia with respect to floods in the city. Many expressed willingness to continue the dialogue and participate in subsequent living labs facilitated by IITG.

Following the discussions, participants also engaged in a mapping exercise, where they identified flood affected locations in and around the Zoo Road area on a map developed by the project team. The exercise intended to engage the community and impart a sense of ownership in setting up sensors around the city for developing the flood EWS under project Lodestar.



Given below is a list of the stakeholders who had participated in the GuLL of 29th march, 2025.

List of stakeholders

Sl. No.	Name	Institution/Designation	Locality in Guwahati	Contact info.
1	Biren Baishya	ASDMA, GIS Expert	Bharalumukh	9435746436
2	Syed Sarik Rahman	DoHUA, Project Officer	Zoo Road Tiniali	8638678394
3	Dipima Sharma	WRD , Environmental Officer, EAP Wing,	Jatia, Kahilipara	8402846586
4	Himagshu Baruah	D.O. (T), Fire and Emergency Services, Assam	Panbazar	9706482443
5	Arup Kalita	Sr. S. O. Fire and Emergency Services, Assam	Dispur	9365897216
6	Bhaskar Jyoti Deka	Urban Technical Officer, GMC	Kahilipara	9864852695
7	Jyoti Prakash Mahanta	Junior Engineer, GMC	Japorigog	9435776313
8	Hiranya Kr. Hazarika	Ex. Engineer, GMC	Noonmati	9435300998
9	Binita Debi	Principal, Sudarshan Public School	Beltola	9864277051
10	Jayashree Bora	Former Professor, Dept. of Geography, Cotton University	Dispur	9435112656
11	Sochi Prabha Das	Editor, Pragiyotish Prakashan	Zoo Road	9864022703
12	Robin Kalita	Rtd. Director, IRCTC, Govt. of Assam	Zoo Road	9599698402
13	Pradip Sharma	Rtd. Chief Engineer	Jonali, Zoo Road	9435080070
14	Dwijen Das	Rtd. DTO	Lakshmi Prabha Path, Zoo Road	9435056781
15	Biren Sharma	Senior Citizen	Santi Path, Zoo Road	9864038724
16	Chayashri Basumatary	Youth Member	Milan Path, Zoo Tiniali	9101292559
17	Motiur Rehman	Self-employed	Santi Path, Zoo Road	9577842730
18	Prabhat Goswami	Senior Citizen	Santi Path, Zoo Road	9435149077
19	A. K. Nath	Senior Citizen, PWD	Sreenagar	8134858468
20	Purabi Borah	Reserve Bank of India/Author	Chandmari	9435554171
21	Binod Agarwalla	Senior Citizen	Zoo Road	9954042815
22	Rajesh Sharma	General Secretary, Zoo Road Committee	Zoo Road	9954269860
23	Dwijen Bhattacharyya	President, Zoo Narangi Unnayan Committee	Zoo Road	9577367324
24	H C Sharma	Rtd. Chief	Barnali Path	9707052115
25	Niloy Goswami	Citizen – school	Zoo road	9643686134
26	Dwip Baruah	Social Worker	Nabin Nagar	9864030393
27	Syamanta Phukan	Engineer/Businessman	Santi Path, Zoo Road	9101189554
28	Nirupom Barhya	SRISHTIE Consultancy	Hengerabari	9706496221

29	J. N. Khataniar	SRISHTIE Consultancy	Uzan Bazar	9435047626
30	Bandita Phukan	Rtd. Technical Manager, AIDC	Santi Path, Zoo Road	9864025517



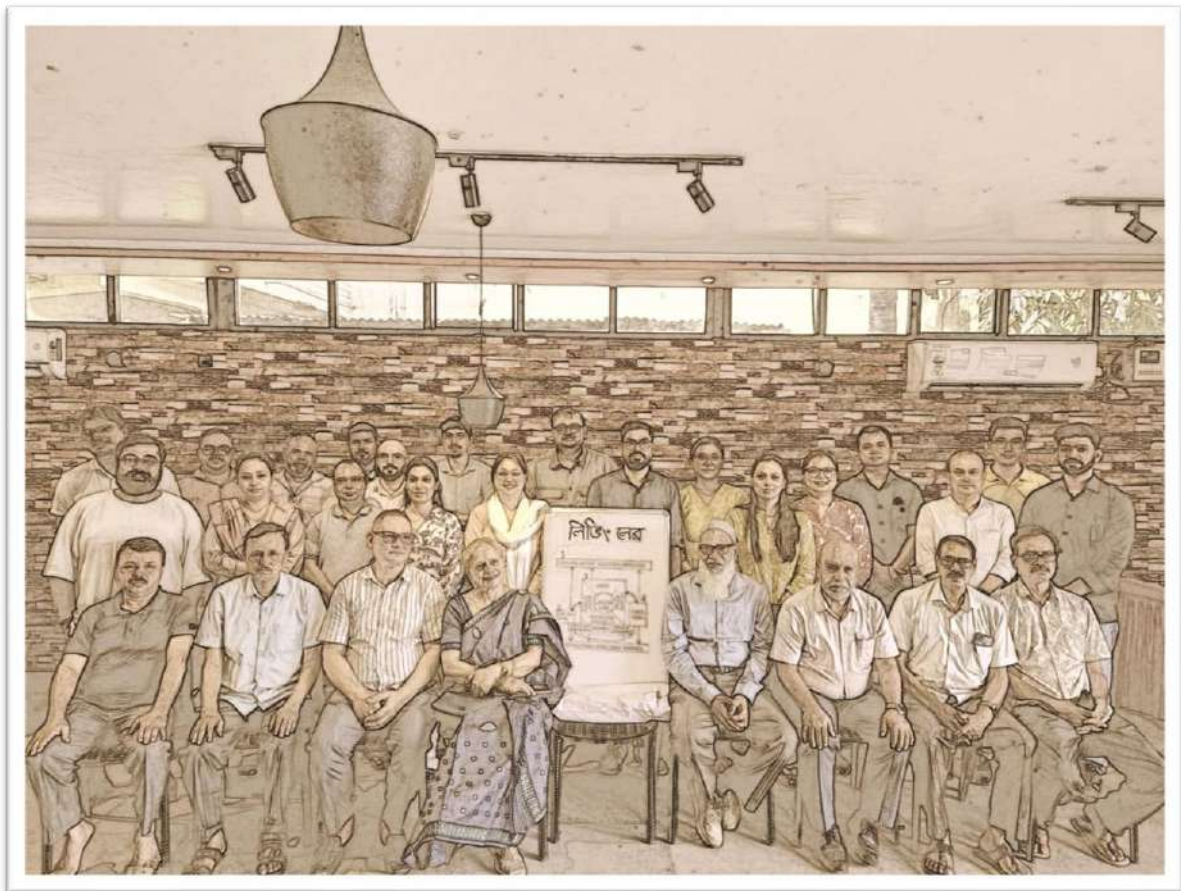
Process Document: Living Lab on Urban Floods and Early Warning System in Guwahati (Hatigaon)

Low-Cost Disaster & Emergency Services for Communities At Risk (LODESTAR)

Date: 25th August, 2025

Venue: Belly's Day Out, Near Main Road, Sewali Path, Hatigaon, Guwahati.

Organised by: IIT Guwahati Lodestar Team



Objective: To create a collaborative **Living Lab** that brings together residents, government agencies, and researchers to co-develop solutions for urban flooding in Guwahati through a **low-cost, decentralized early warning system**.

Roles and Responsibilities:

- Project PI: Anamika Barua
- Project Co-PI: Debanga Raj Neog
- Team members: Priyam, Shankar, Gautam, Bipasha, Vineet, Minara, Himashree, Chayashri
- Facilitators: Anamika Barua and Debanga Raj Neog

Project members from Bengaluru and Anantapur Lodestar sites:

- Dr. Rajarshi Das Bhowmick, Assistant Professor, Interdisciplinary Centre for Water Research (ICWAR), IISc Bengaluru
- Mr. Yashpal Luniwal, PhD Scholar, IIT Tirupati
- Suvid M., Senior Analyst in the Adaptation and Risk Analysis group, CSTEP

List of Participants:

Name	Designation	Location
Biren Baishya	ASDMA (Assam State Disaster Management Authority), GIS Expert	Guwahati
Ajay Mazumdar	Field Officer, Azara Revenue Circle, District Disaster Management Authority (DDMA)	Guwahati
Anku Moni Gogoi	Field Officer, Chandrapur Revenue Circle, District Disaster Management Authority (DDMA)	Guwahati
Runu Borah	Retired ONGC employee	Bishnujyoti Path, Hatigaon
Rabia Khatun	Homemaker	Jogesh Das Path, Hatigaon

Mir Atowar Rahman	Retired from Indian Air Force (IAF)	Sijubari
Abdur Razzaque	Ex-ONGC	Sijubari
Dr. Rupam Bhaduri	Post-Doctoral Fellow	Bhetapara
T. Rahman	Retd. AEI, Department of Power, Government of Assam	Bishnujyoti Path, Hatigaon
Meher Khan	Ex Sub-Inspector of Police, Government of Assam	Notobomma
Shah Alam Bhuyan	Department of Exchange	Sijubari
Aynul Haque Choudhury	Business	Sijubari
Rashidul Islam	Studying	Jogesh Das path, Hatigaon
Moinul Haque Talukdar	Retired employee	Sijubari
Bipul Chandra Hazarika	Cab Driver	Hatigaon
Gobin Baruah	Cab Driver	Hatigaon
Shiraj Haque	Cab Driver	Hatigaon
Anindita Talukdar	Business	Hatigaon

List of Abbreviations:

- i. ASDMA- Assam State Disaster Management Authority
- ii. DDMA- District Disaster Management Authority
- iii. GMC- Guwahati Municipal Corporation
- iv. IMD- India Meteorological Department
- v. IAF- Indian Air Force
- vi. ONGC- Oil and Natural Gas Corporation

Step-by-Step Process of the Living Lab Event

Step 1: Arrival and Welcome

The Living Lab event was held on August 25, 2025, at Belly's Day Out, Hatigaon, Guwahati. The IIT Guwahati Lodestar team members arrived at the venue by 9:00 AM to start preparing for the event. All stakeholders, including residents and government officials, began to arrive gradually, and the event officially commenced at 11:00 AM with a warm welcome from the project team.

Step 2: Introduction of Participants

The event began with a round of brief introductions of all the attendees- including the project team, the facilitators, and representatives from various stakeholder organisations.

Step 3: Project Background and Purpose of the Living Lab

Following the introductions, Anamika Barua (Project Lead) and Debanga Raj Neog (Co-Project Lead) provided an overview of the project LODESTAR and the significance of Living Labs. The intent of an informal meeting set-up was put forth, placing centrality among the participants; hence, trying to destabilise any form of existing power asymmetry, aiming for a better collaborative approach.

They highlighted the urban flooding challenges in Guwahati, particularly emphasizing the lack of an effective early warning system (EWS). The attempt of the project at the integration of technology with its real-time users to increase efficiency, extending upon bridging the existing gaps in the communication of weather updates and alerts for further mitigation, was emphasised.

Step 4: Discussion on the Living Lab Approach

The discussion then transitioned into explaining the Living Lab methodology- an informal, open, interactive setup where the stakeholders could share their opinions and insights without any inhibitions pertaining to-

- What is working and what is not in the current flood response system?
- What is missing in the existing flood preparedness framework?
- What improvements can be made to develop an effective and sustainable EWS?

It was emphasized that, unlike conventional top-down approaches—where academicians develop models and later implement them—the Living Lab approach seeks to co-create solutions through a bottom-up approach involving the community and the government. The team stressed the importance of understanding:

- Community and government expectations regarding an early warning system.
- Differences in priorities between stakeholders.
- How to bridge these gaps to develop a realistic, cost-effective, and community-driven EWS that aligns with ground realities.



Step 5: Facilitation and scenario-based discussion on urban flooding

To facilitate an engaging session among the participants, the IITG team created three different scenarios related to the issue of urban flooding in Guwahati. Each scenario had guiding questions that were to be answered by the participants. The scenarios were thought through and planned out in a way that could take the discussion through the ground-zero issues of recurrent inundation in the city, further dwelling into the insights relative to EWS and its expected reliability among the public. The brief on the scenario-based approach was followed by the division of participants into three groups at 11:30 AM, through a token distribution system. Participants with the same number on their tokens formed their respective groups. Each table had a maximum of 5 participants and one member from the IITG project team, to assist, if required. It was made sure that every table had at least one government official in it. Group 1 consisted of an ASDMA official, GMC contractor, active official in the Department of Exchange and a retired employee. Group 2 consisted of a homemaker, a restaurant owner, ex-ONGC officer, retired AEI from the Department of Power and a DDMA official. The third group had a post-doctoral fellow, ex-Sub-Inspector of Assam Police, retired IAF officer, ex-ONGC employee, along with a DDMA official.

After the group formation, the cards with different scenarios were distributed by the IITG team. Each of the scenarios, along with the guiding questions, were explained to them and how they were expected to engage in a discussion among themselves and note their responses on the sheets provided to them. The translated version of the scenarios in Assamese was written on the back of the cards to eliminate any potential language barrier. The intra-group deliberations went on till 12:15 PM. Active engagement was observed across all the tables, and collective responses were recorded on the response sheets. It was then followed by individual-group perspectives on the assigned scenarios, where a representative from each group put forth their collective stance.



Scenario 1:

On the evening of 29th August, it has started to rain. You wake up the next morning to find that there is no electricity and the roads are flooded following the heavy rains.

Guiding Questions:

1. What actions do you take immediately?
 - a) How do you respond to the situation (*coping strategies*)
 - b) Do you seek local support (*neighbors, colleagues, ward representatives*)?
 - c) Do you reach out to the line departments?
2. Do you receive any warning for the rain or flooding?
 - a) If yes, how?
 - b) If no, then how would you like to receive the warnings? (*SMS, radio, TV, social media, sirens, community meetings, etc.*)

- c) Do you think you can respond to the situation better if you receive an early warning?
- 3. What do you want to be warned for? (*weather forecasts, flooding, real-time inundation information, power cuts*)

Scenario 2:

You are outside your home and in the city - either commuting or running daily errands and receive an IMD weather alert saying that it is going to rain in parts of Kamrup Metro and adjoining districts (similar to the alerts that you currently receive).

Guiding Questions:

- 1. In such a situation, what do you do? What decision or actions do you take?
- 2. Is the message you currently receive sufficient for you to take an informed decision and act upon it? – in terms of-
 - a) The content of the message
 - b) its timing (*both the time of receiving the message and the forecasted timing of the rainfall event*)
- 3. How early would you prefer to receive the message – the lead time? (*when is early, for you?*)

Scenario 3:

Guwahati has a flood early warning system that provides both advanced alerts and real-time updates on flooded areas across the city.

Guiding Questions:

- 1. How much does the accuracy of the prediction matter to you? Would it affect your trust on the EWS?
- 2. What additional factors would increase your trust/reliance upon the EWS?
- 3. How do you perceive the flood situation in Guwahati?
 - a) Do you see it as a serious problem that requires urgent intervention?
 - b) Or do you see it as a mere inconvenience that you have become used to?

information as a source of support. However, they seek a uniform, localised Early Warning System that could help in better management and preparedness.

Group 2- Scenario 2:

This table saw a mixed response pertaining to their reliance on the IMD alerts. While a few participants did take the alerts seriously and arranged their routine likewise, one of them completely negated its use given its inaccuracy. The group did agree to the occasional inaccurate predictions, mentioning that the alerts were taken into consideration, only with some caution. Another key observation that was put forward highlighted the medium of dissemination currently used by the forecasting agencies. While SMS is the primary channel through which these alerts are delivered to the general public, they often get missed or ignored due to the overwhelming number of promotional messages that dilute the urgency of early warnings.

Referring to the question on the content of the message, the group highlighted that currently the warnings are quite simple to understand even when in English. They discussed that even if a certain age group or section of the population might face difficulty with English, yet almost the majority of them have immediate near members who can read or translate the content of the alerts. However, alerts in the local language – Assamese – were also preferred. Towards the end of the scenario-based intra-group discussion, the members at Table 2 reverted to the problem of drainage mismanagement in Guwahati and its significant role in aggravating the artificial flooding issue, particularly in the Hatigaon locality. The group blamed the GMC department and its assigned contractors for the unscientific construction of drains, overlooking the natural gradient (topography) of the area, resulting in the new emergent areas that suffer recurrent artificial flooding.

The group stressed the importance of timely, regular, and proper cleaning of the drains for tackling the flood problem in their area. They mentioned that merely cleaning the drains right before the monsoons and dumping the waste by the roadside results in the wash-off of the same waste down the drains during the subsequent rainfall. Hence, the problem is not solved, but rather it persists and repeats itself. Members of the group also stressed the need for increased public awareness on unclogged drains through rational garbage disposal practices. There was a collective willingness to form neighborhood watch groups that could coordinate with the line departments and oversee the process. They further added that a system could be put in place to

raise complaints against the offenders. The group suggested that coercive action by the government, such as fines etc. can also have the desired effect, making it a more collaborative effort at raising public awareness.

Group 3- Scenario 3:

The accuracy of received predictions was of utmost importance in this table. The current early warning messages were not very accurate, hence a more precise prediction is expected to build a larger trust on the EWS. However, the participants mentioned that the larger challenge was waterlogging. Given the current situation, people are aware that a downpour of 30 minutes would result in a water logging crisis in some corner of the city. They expected interventions that could solve the water logging issue in the longer run.

The suggestion as put forth by this table was the integration of EWS into an app instead of just a message, as there is a common tendency among people to overlook messages. The possibility of receiving information on the water level or the water flow height, along with updates on the water retention duration, could possibly enable better decision making and preparedness. The urgency of localised information was put forth. (Alert on a heavy thunderstorm in Kamrup Metro is read as vague information; information as specific as 'Heavy rain at Hatigaon' is anticipated). Although not everyone on the table agreed but there was a mention that the EWS could help in re-routing the traffic during situations of urban flooding. Participants saw the flood situation in Guwahati as a serious problem that required urgent interventions. In addition to being a daily life inconvenience, they put forth that the situation of urban flooding imposed a serious risk to life.

Step 6: Discussion and Key Findings

An open discussion was initiated at around 12:35 PM following the individual-group perspectives shared by the representatives of each group. Active participation from every member was observed, with analytical insights and suggestions being put forth. The discussion was later joined by three members of the Cab Drivers' Association who shared about their novel approach on networking through social media, sharing updates through pictures when the city faced heavy rainfall. Such networking helped them to divert their rides from the waterlogged areas and avoid the traffic at times.

The discussion saw uniform awareness of the existing crisis with a focus on collective concerted efforts to minimise the intensity, if not eliminate the urgency completely. The residents put forth their anticipation for more localised information regarding the weather alerts and updates. It can be assessed from the responses across the tables that there was a willingness to rely on such updates but due to the existing gaps relative to accuracy and real-time information, a concrete state of confidence was lacking. The government officials agreed on the need for more localised information, bringing into light the current nowcast, that is, 3 hours, which serves to be inefficient for any form of government interventions as well. The tone of “Guwahati as an unplanned city” dominated the entire discussion throughout the event. While the residents complained about the clogged drains that surpass their capacity after every downpour, the officials mentioned how the city lacks a proper drainage map itself. The issue was beyond improper drainage; the fact that Guwahati has no stormwater drains and the existing ones are for sewer purposes only, makes the city prone to recurrent episodes of waterlogging. The discussion saw a slight conflict of opinion as one of the participants, who was a GMC contractor, blamed the engineers and bureaucracy for the planning irregularities. Another participant, while agreeing to the existing mismanagement, also put equal liability on the contractors involved in the construction of the drains in the city. Hence, bridging the communication gap through real-time information dissemination came out as a message that resonated as the event concluded with networking, informal discussions, lunch, and thank-you gifts presented to participants as a token of appreciation. Below, we present an overview of the responses from the citizens and government.

Citizen perspectives:

- Need for more localised updates concerning waterlogging to enhance the accuracy.
- Regularities in the uptake of the drains; especially before the monsoons to minimise the water retention period due to mindless garbage dumping.
- Sustainable mode of communication between the residents and the government officials at the time of crisis.
- Integration of EWS with an app to eliminate any possibility of overlooking the messages.
- Increasing accessibility of emergency contacts during crisis through better marketing and outreach.

Government perspectives:

- Government officials address the gap that persists between the IMD alerts and state weather updates; equally stressing on the need for more localised/precise information.
- Accurate information, when received in time, enables authorities to deploy rescue teams efficiently to the affected localities.
- The desired nowcast of 72 hours through EWS is expected to ensure better preparedness and efficient mitigation.
- Taking up the issue of SMS alerts being overlooked, a novel approach of Flash Messages for early warning updates was mentioned to be in its formation stage.
- Officials aim to utilize available resources and manpower to reduce the duration of inundation and ensure effective management of water flow.

Step 7: Mapping Exercise

After the discussions, the mapping exercise begun at 12:58 PM, where participants took part in the identification of sensor locations using a flood inundation map of the streets of Hatigaon that face the crisis. The participants were divided into two groups, with one member from the IITG project team in each to assist and guide them in identifying critical locations where flood monitoring is needed based on past inundation experiences. Both groups engaged in discussions among themselves and independently marked the locations that encountered severity. Notably, both groups identified similar flood-prone areas, demonstrating a shared understanding of the city's most vulnerable zones. This alignment underscores the importance of collaborative efforts between citizens and government agencies to enhance flood response strategies and improve early warning systems.



Step 8: Conclusion & Takeaways

The expected reliance on the EWS could only be harnessed through more localised updates. Given the erratic rainfall that spans over the city, more precise information strengthens the preparedness of the citizens and further interventions to be implemented by the government. A sustainable communication channel between the residents and the administration could ensure a more systematic management of the existing irregularities.
