Applying Remote Sensing Technology in River Basin Management - ADB TA8074-REG

Report on

**Conduction of evacuation drill**

Submitted to
Asian Development Bank
Plot E-31, Sher-e-Bangla Nagar
Dhaka 1207, Bangladesh.

Submitted by
Department of Disaster Management
92-93 Mohakhali C/A
Dhaka 1212, Bangladesh.
Acronyms

DDM  Department of Disaster Management
DMC  Disaster Management Committee
FFWC Flood Forecasting and Warning Center
NGO  Non-Government Organization
FGD  Focus Group Discussion
KII  key informant interview
UDMC Union Disaster Management Committee
UzDMC Upazila Disaster Management Committees
UNO  Upazila Nirbahi Officer
PIO  Project Implementation Officer
GO  Government Organization
CRA  Community Risk Assessment
SOD  Standing Orders on Disaster
VDP  Village Defence Party
BDRCS Bangladesh Red Crescent Society
SMS  Sort Message
MoDMR Ministry of Disaster Management and Relief
WARPO Water Resources Planning Organization
CDMP Comprehensive Disaster Management Programme
ADB  Asian Development Bank
IEC  Information, Education and Communication
# Table of Contents

1. Executive Summary: ........................................................................................................................................7
2. Title of the project: ..........................................................................................................................................7
3. Objective: ......................................................................................................................................................7
   3.1. Broad Objective: .......................................................................................................................................7
   3.2. Specific Objectives: ..................................................................................................................................7
4. Project location: .............................................................................................................................................8
   4.1. Location feature of Jadurchar union: .........................................................................................................8
   4.2. Location feature of Kulkandi union: .........................................................................................................8
5. Methodology: ..................................................................................................................................................9
6. Key activities: ................................................................................................................................................9
   6.1. Conducting need assessment: ..................................................................................................................9
      6.1.1. Conceptual clarity on evacuation: .......................................................................................................10
      6.1.2. Awareness on SOD: ..........................................................................................................................10
      6.1.3. Existence of volunteers: ....................................................................................................................10
      6.1.4. Existence of formal flood shelter and maintenance: .......................................................................10
      6.1.5. Co-operation in shifting affected households: .....................................................................................10
      6.1.6. Existence of flood early warning: ......................................................................................................10
      6.1.7. Logistics and material for evacuation: ...............................................................................................11
      6.1.8. Recommendations for evacuation drill: .............................................................................................11
   6.2. Preparing SMS contents: .........................................................................................................................11
   6.3. Preparing scenario for evacuation drill: ...................................................................................................12
   6.4. Enhancing capacity of the DMC members and volunteers: ..................................................................12
   6.5. Developing Information, Education and Communication (IEC) Materials: ...........................................14
   6.6. Raising awareness: ..................................................................................................................................14
   6.7. Conducting evacuation drill: ...................................................................................................................14
7. Conclusion: ....................................................................................................................................................15

## Annexure

- Applying remote sensing in river basin management
- Scenario for conducting evacuation drill
1. **Executive Summary:**

Evacuation is an important component of disaster emergency response. The term ‘Evacuation’ is often used as an administrative order issued by the authority responsible for emergency response. As per the interpretation of highest level disaster early warning, if it is assumed that the situation may turn into a serious upheaval causing huge losses of lives, then the concerned authority issues evacuation order to protect the lives of the vulnerable people. Disaster early warning is not only limited within the dissemination of early warning message, rather the importance of early warning dissemination lies in the fact that whatever measures has been taken at different levels (family, community and organization) in responding to early warning, would reduce disaster risks. Therefore, there is a close relationship between disaster early warning and evacuation.

Evacuation drill is a tool to justify the effectiveness of the evacuation plan as well as to sensitize the concerned stakeholders regarding their roles and responsibilities. Keeping the reality in mind, under the pilot initiative “Applying Remote Sensing Technology in River Basin Management”, as a planned activity, two evacuation drills were conducted. With the assistance of Asian Development Bank, the event was jointly initiated by the Department of Disaster Management (DDM), Flood Forecasting and Warning Centre and JAXA of Japan.

Through a participatory manner, the initiative identified the needs of evacuation, prepared evacuation plan, developed guideline for the local level authority, identified specific agencies related to evacuation operation, defined the roles and responsibilities of different stakeholders, enhanced capacity of the DMC members and volunteers and raised awareness among the community people in responding to flood early warning. The real stakeholders such as the officials of DDM and FFWC, members of the upazila and union disaster management committees, officials of government and non-government agencies, local elites, volunteers and the selected members of vulnerable households actively participated in the evacuation drill.

2. **Title of the project:**

Conduction of evacuation drill.

3. **Objective:**

3.1. **Broad Objective:**

To aware the concerned stakeholders and vulnerable communities regarding their roles and responsibilities in responding to flood early warning

3.2. **Specific Objectives:**

- To review the needs of different stakeholders related to evacuation
- To finalize the roles and responsibilities of different stakeholders in evacuating vulnerable people from high risk prone areas
- To prepare evacuation plan
- To enhance the capacity of relevant stakeholders in evacuation operation
- To aware vulnerable communities and other stakeholders regarding their roles and responsibilities in the process of evacuation
4. **Project location:**
The locations of the pilot project included the Jadurchar union of Rowmari Upazila of Kurigram District and the Kulkandi Union of Islampur Upazila of Jamalpur District respectively.

4.1. **Location feature of Jadurchar union:**
Jadurchar union is one of the most vulnerable unions of Rowmari Upazila under Kurigram District. The union is very close to the River “Brahmaputra”. Total area of the union is 16sq. km. Flood is almost a regular phenomenon of the union. As per the response of the respondents, the flood of Jadur Char union is classified into two categories i.e. riverine flood and flash flood. The ward number 1, 4, 5 & 6 are partially vulnerable to riverine flood while ward number 2, 3, 7, 8 & 9 are partially vulnerable for flash flood. Approximately 39,000 people in 8,800 households are living at the Jadur Char union. Most of the inhabitants are involved in farming and economically they are treated as ultra-poor. Poverty, living in low lying areas, weak infrastructure, inexistence of flood early warning and inadequate flood shelter/safe-places are the key vulnerabilities to make the inhabitants more vulnerable to flood risk. According to the response of the respondents, in any flood (moderate or severe), almost more than 50% of the households are compelled to shift their living places for safety and security of their life and assets. Due to inadequate flood shelter cum educational institutes, highways, embankment and raised lands are treated as safe-places by the flood affected households. The table presented below reflects the recent flood scenario of the area.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area inundated (%)</th>
<th>No of Shifted households (% approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>80</td>
<td>3000 (approx.)</td>
</tr>
<tr>
<td>2007</td>
<td>100</td>
<td>4000 (approx.)</td>
</tr>
</tbody>
</table>

*Source: Union Disaster Management Plan, Jadur Char, Rowmari Upazila under Kurigram.*

4.2. **Location feature of Kulkandi union:**
Kulkandi union is one of the most vulnerable unions of Islampur Upazila under Jamalpur District. The union is very close to the River “Jamuna”. Flood is a regular phenomenon of the union. Total area of the Union is 28.44sq. km. There are 22825 people living in the union in approximately 4,167 households. The Union possesses 11 villages. Some wards (1, 2 and 3) of the union are char areas. Most of the wards of the Union are not protected by embankment. Only ward number 6 & 9 are protected by embankment. Likewise Jadurchar union most of the inhabitants of kulkandi are involved in farming and economically they are treated as ultra-poor. Poverty, living in low lying areas, weak infrastructure and inexistence of flood early warning, inadequate area protection embankment and flood...
shelter/safe-places are the key vulnerabilities to make the inhabitants more vulnerable to flood risk. According to the response of the respondents, in any flood (moderate or severe), almost 100% areas are inundated and more than 50% of the households are compelled to shift their living places for safety and security of their life and assets. Due to inadequate flood shelter cum educational institutes, highways, embankment and raised lands are treated as safe-places by the flood affected households. The table presented below reflects the recent flood scenario of the area.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area inundated (%)</th>
<th>Affected households (%)</th>
<th>Shifted households (% approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>100</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>2007</td>
<td>100</td>
<td>100</td>
<td>50 +</td>
</tr>
<tr>
<td>2004</td>
<td>100</td>
<td>100</td>
<td>50 +</td>
</tr>
<tr>
<td>1998</td>
<td>100</td>
<td>100</td>
<td>50 +</td>
</tr>
</tbody>
</table>

*Source: Disaster Management Plan, Kulkandi, Islampur Upazila under Jamalpur*

5. **Methodology:**

The tools of participatory approach were adopted in conducting the evacuation drill. In every stage of implementation, decisions were made in consultation with the relevant stakeholders related to evacuation process such as, members of the disaster management committees, officials of government departments, NGO representatives, elected chairman member and the representatives of vulnerable communities etc.

At first, a survey was conducted to assess the needs of evacuation. Then, based on the findings of the survey, an evacuation plan was prepared through a participatory manner. After that, a guideline was developed for the Disaster Management Committees by focusing on the specific directions for evacuation. A group of community volunteers were identified and their capacity was enhanced for executing effective evacuation operation. Then, an outline was prepared for the conduction of evacuation drill. On the basis of the outline of the evacuation drill, adequate rehearsal sessions were organized by involving relevant stakeholders related to evacuation drill. Finally, as per evacuation plan, the evacuation drill was conducted.

6. **Key activities:**

As a part of the tools of the participatory methodology the following activities were conducted.

6.1. **Conducting need assessment:**

With a view to assessing the needs of evacuation, an assessment was conducted at project location. Participatory approach was followed and the tools of participatory methodology such as Focus Group Discussion (FGD), meeting, key informant interview (KII), transect walk etc. were adopted for the conduction of the need assessment. In this regard, a draft assessment outline was developed and finalized in consultation with the relevant project personnel. The assessment outline included the investigation
issues, key questions, respondents and data collection methodology. The respondents of the assessment were the representatives of vulnerable communities, members of the Union Disaster Management Committees (UDMCs) and the key members of the Upazila Disaster Management Committees (UzDMCs) such as upazila chairman, Upazila Nirbahi Officer (UNO), Project Implementation Officer (PIO) and the representatives of those NGOs that are implementing projects related to disaster management. Simultaneously, as secondary source, relevant GO-NGO documents such as damage assessment report; baseline report, Community Risk Assessment (CRA) report etc. were collected and reviewed. The following findings were carried out by the assessment:

6.1.1. Conceptual clarity on evacuation:
The response of the key respondents of the upazila authority proves an acute conceptual gap to understand the word “Evacuation” from an administrative point of view. The UNO pointed out that during the past flood situations, on behalf of upazila authority, he had never issued evacuation order for the safety of the vulnerable people. Similarly, the community respondents also shared their experience that, they had never been evacuated by the upazila authority during the past floods. According to the response of the vulnerable communities, they try to cope with the situation, staying indoors as long as possible and when the situation gets severely intolerable; they make their own decision to shift themselves to a safe place of their own accord.

6.1.2. Awareness on SOD:
The key members of the upazila Disaster Management Committee (UzDMC), especially UNO and PIO are very much aware regarding the Standing Orders on Disaster (SOD) but it has been understood that they are less practiced in following the instructions of the SOD. Almost every Union Disaster Management Committee (UDMC) does not have any clear idea regarding SOD and their roles and responsibilities as per SOD in responding to disaster.

6.1.3. Existence of volunteers:
The findings of the assessment carried out that the government department “ANSAR VDP” has village platoon in every village. Generally, the members of the village platoon are the inhabitants of the village. Every village has separate platoons for males and females. Each platoon consists of 32 members. It has also been realized that the village platoons are not well active and trained regarding Disaster Emergency Response. Moreover, the Non-Government Organizations (NGOs) working at the area have a trained volunteer group and they are equipped with logistics and materials. However, it has been noticed by the respondents that, in most of the cases after the completion of the project, most of these volunteers become inactive due to lack of follow up.

6.1.4. Existence of formal flood shelter and maintenance:
After the flood of 1988, local government engineering department have constructed a few formal flood shelters but due to lack of proper maintenance, these shelters are not useable during floods. These shelters are mostly near the upazila head quarter. Due to inadequate flood shelter, in any flood situation, the most vulnerable households take shelter at high roads, embankments; raise lands and to some extent educational institutes as an alternative safe shelter.

6.1.5. Co-operation in shifting affected households:
The community respondent shared that during flood they didn’t receive any co-operation from local government authority. However, they acknowledged that at some NGOs helped them by providing boats.

6.1.6. Existence of flood early warning:
Most of the respondents shared that there is no existence of Flood Early Warning during monsoon. Some of them told that they received flood early warning message through mass media such as
radio, television and newspaper but in most cases, the messages could inform them about the increase of decrease of water level in the river but it included no information about how much it is going to increase in the upcoming days. However, the local people are claimed to be able to predict themselves about the probability of flood based on their indigenous knowledge and long term experience.

6.1.7. Logistics and material for evacuation:
The findings of the assessment carried out that, during flood, the victims face serious problem in managing boats for transportation and even if they manage to get boats, they are unable to afford it due to financial crisis. Moreover, after they manage to shift, they lack tents, water facilities, latrine facilities, ready-made food etc. While shifting, they also require the assistance of volunteers which they lack.

6.1.8. Recommendations for evacuation drill:
The following recommendations are made by the respondents for conducting evacuation drill:
▪ To ensure authentic flood warning message so that people may not blame us;
▪ Require specific instruction on when to issue evacuation order;
▪ At least 2 days before the inundation, evacuation order should be issued;
▪ Evacuation message can be sent to the respective officials of upazila authority in English SMS text;
▪ Enhancing capacity of the relevant officials and persons responsible in evacuation operation;
▪ The village platoon of ANSAR VDP and the volunteers of the NGOs can be utilized in evacuation drill;
▪ The village ‘Pakhiura’ of ward no. 6 under Jadurchar union would be the ideal village for evacuation drill;
▪ The village ‘Harindhara’ of ward no. 3 under Kulkandi union would also be an ideal village for evacuation drill;
▪ Other relevant government departments, such as- Department of Public health engineering, health department, Bangladesh Red Crescent Society (BDRCS) and local NGOs may be involved in evacuation drill.

6.2. Preparing SMS contents:
The objective of the activity was to prepare understandable SMS contents for the citizens and the disaster management practitioners. Initially, through a participatory manner, the draft SMS contents were prepared in consultation with the representatives of MoDMR, DDM, FFWC, IWM, WARPO, CDMP. In preparing the draft SMS contents, the literacy, i.e. capabilities of the community in understanding the messages written in English, Bangla font support, i.e. technical feasibility of the mobile sets for Bangla text, community friendliness of the contents for easy interpretations and review of similar past initiatives were highly considered. By analyzing and reviewing all above factors, the findings of the consultation suggested developing specific “signs” as SMS warning message. Finally, the SMS contents were finalized and approved by DDM. The final version of the SMS contents for the citizen is as follows.

<table>
<thead>
<tr>
<th>Sign</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ (......cm./Next 24 hours)</td>
<td>Meaning of the sign (+)</td>
</tr>
<tr>
<td></td>
<td>▪ Within Next 24 hours, water may increase up to ...... cm.</td>
</tr>
<tr>
<td>+ (......cm./Next 5 days)</td>
<td>▪ Within next 5 days, water may increase up to ...... cm.</td>
</tr>
</tbody>
</table>
The final version of the SMS content for the disaster management practitioners is as follows.

“By next 5 days, the water level of Brahmaputra may increase up to 30 cm. The charland and low-lying areas under Jadurpur/kulkandi union may be severely inundated. For the protection of the lives of vulnerable people, if necessary, necessary actions may be taken.”

The findings of the consultation process did also categorize the local flood situation into 3 stages by considering the water level of the nearest river as well as the warning messages disseminated by FFWC and DDM. In this regard, consensus was built that the evacuation order should be issued by the local authority (UzDMC) on the basis of the water level of the nearest river as well as the warning messages disseminated by FFWC and DDM. The stages of flood are as follows:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Institutional measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert Stage</td>
<td>At this stage, the local authority (UzDMC) would request the local people to observe the water level of the River and weather condition and to listen to the weather &amp; FFWC bulletin regularly.</td>
</tr>
<tr>
<td>Danger Stage</td>
<td>At this stage, the local authority (UzDMC) will take necessary steps for disseminating early warning message through local accessible communication tools. People will be requested to take preparedness measures at the family and community level, observe the water level of the River and weather condition and to listen to the weather &amp; FFWC bulletin regularly.</td>
</tr>
<tr>
<td>Flood Stage</td>
<td>At this stage, local authority (UzDMC) will issue evacuation order for evacuating people living in the most vulnerable and low-lying areas.</td>
</tr>
</tbody>
</table>

6.3. Preparing scenario for evacuation drill:
An outline of the evacuation drill was prepared in consultation with the relevant representatives of DDM, FFWC, ADB and JAXA. The outline included the sequence of the evacuation drill- i.e. dissemination of warning message, administrative measures at different levels, roles and responsibilities of UzDMC, UDMC, volunteers and the community in responding to flood early warning. The final version of the scenario is annexed with the report.

6.4. Enhancing capacity of the DMC members and volunteers:
With a view to enhancing the capacity of the members of the Disaster Management Committees and volunteers, under the pilot initiative, a number of training courses were conducted on “Dissemination of Flood Early Warning and Evacuation”. A total of 195 participants took part in the training courses. The training courses were locally organized by the Upazila and Union Disaster Management Committees. The training courses were facilitated by the expert facilitators of DDM and FFWC. Tools of participatory methodology such as Brain storming, Lecture discussion, Demonstration, Experience sharing, Case study, Question answer,
Small group discussion, Open forum discussion etc. were adopted in conducting the training sessions. A brief on the training sessions is as follows:

- **Session- 01** focused on the flood risk of Bangladesh, reasons, impact, and historical background, flood risk prone areas in Bangladesh and how the flood risk is increasing due to the impact of Climate Change. The objective of the session was to draw the flood context of Bangladesh to the participants so that they can realize the importance of the pilot initiative for reducing the losses and damages of lives and livelihoods. The session was conducted by Mr. Amirul Hossain, Executive Engineer, FFWC.

- **Session-02** highlighted the existing flood warning system in Bangladesh. The session also pointed out the limitations of existing flood early warning system and introduced the experimental warning dissemination flow from source to the household level by mentioning the communication mediums and agents at different levels. Mr. Netai dey sarker, assistant director of DDM facilitated the session.

- **Session-03** clarified the flood warning SMS and its interpretation. The session also focused on the techniques for contextualizing the SMS messages into community friendly language. The session was facilitated by Mr. Moloy Chaki, consultant, DRR.

- **Session-04** introduced Web-Gis map to the participants so that the participants can utilize the Web-GIS map as decision making tool for evacuating vulnerable people from high risk prone areas in advance. Mr. Amirul hossain, executive engineer of FFWC, facilitated the session.

- **Session-05** sensitized the participants regarding the concept of evacuation and the basic requirements for operating evacuation activities during emergency situation. The session was conducted by Mr. Moloy Chaki, consultant, DRR.

- **Session-06** highlighted the roles and responsibilities of the members of Disaster Management Committees and volunteers in disseminating flood early warning and operating evacuation activities during disaster emergency. Mr. Netai Dey Sarker of DDM facilitated the session.

During the training, the following recommendations were made by the participants:

- **Developing Information, Education and Communication (IEC) materials:**
  The participants of the training courses recommended developing IEC materials, such as leaflet, poster, mini billboard etc. for communicating the key messages related to the interpretation of flood warning SMS and preparedness measures.

- **Conducting awareness raising sessions at the community level:**
  A number of awareness rising sessions should be organized by the trained volunteers to aware community people regarding the interpretation of SMS and preparedness in responding to flood early warning. During the conduction of volunteer training courses, awareness raising plans were prepared by the volunteers.

- **Sending SMS through a creative approach:**
  Every day, the cell phone users receive a number of SMS related to commercial advertisement or development issues. Usually, most of the cell phone users do not show much interest in reading the SMS. Some of them also feel disturbed for receiving such SMS. Hence, the participants of the training courses recommended sending flood warning SMS through a different approach, so that they can differentiate the SMS with others.
6.5. Developing Information, Education and Communication (IEC) Materials:

A leaflet was prepared for communicating the key messages of the SMS contents to the inhabitants of the project locations as well as to the disaster management practitioners.

6.6. Raising awareness:

Under this activity, the prepared leaflets were distributed to the DMC members, volunteers, students and the inhabitants. The volunteers played significant role in distributing the leaflet. The objective of the activity was to aware community people regarding the interpretation of SMS and preparedness in responding to flood early warning.

6.7. Conducting evacuation drill:

Finally, as a planned activity, two evacuation drills were conducted at Jadur char and Kulkandi union of Rowmari and Islampur upazila of Kurigram and Jamalpur district respectively. The objective of the evacuation drills was to sensitize the concerned stakeholders regarding their roles and responsibilities in evacuating the vulnerable people from high disaster risk prone areas on the basis of the flood early warning. The real stakeholders such as the officials of DDM and FFWC, members of the upazila and union Disaster Management Committees, officials of government and non-government agencies, local elites, volunteers and the selected members of vulnerable households actively participated in the evacuation drills. The evacuation drills included the following scenarios chronologically:

- **Scenario 1**: The upazila authority received flood early warning SMS from DDM;
- **Scenario 2**: The upazila authority called upon an emergency meeting;
- **Scenario 3**: An emergency meeting was conducted by UzDMC;
- **Scenario 4**: Upazila authority issued evacuation order to the most vulnerable union parishods;
- **Scenario 5**: Union disaster management committee called upon an emergency meeting;
- **Scenario 6**: An emergency meeting was conducted by UDMC;
- **Scenario 7**: Emergency measures were taken by the UDMC for evacuating vulnerable people from high disaster risk prone areas;
- **Scenario 8**: Flood early warning was disseminated at family and community level by the volunteers;
- **Scenario 9**: Emergency preparedness measures were taken at family and community level;
- **Scenario 10**: Volunteers actively took part in the evacuation process;
- **Scenario 11**: Members of the vulnerable families were evacuated to the safe flood shelter;
- **Scenario 12**: Emergency response activities were jointly conducted at flood shelter by the members of the disaster management committees, relevant government and non-government officials and volunteers.

At the end of the evacuation drills, a closing ceremony was organized. The local elected members of the parliament, District Commissioner, the key members of the Disaster Management Committee such as Upazila chairman, UNO, chairman of the Union Parishod, representatives of the FFWC, DDM, JAXA and ADB highlighted the importance of such evacuation drills in their closing remarks.

### 7. Conclusion:

Disaster early warning is not only limited within the dissemination of early warning message, rather the importance of early warning dissemination lies in the fact that whatever measures taken at different levels (family, community and organization) in responding to early warning, would reduce disaster risks. Therefore, there is a close relationship between disaster early warning and evacuation.

Globally, the cyclone warning system of Bangladesh is very popular. The Standing Orders on Disasters (SOD) has clearly mentioned the specific measures to be taken by the disaster management committees (DMCS) at different stages of cyclone warning and even when evacuation should take place. However, there is no specific direction or guidelines in the SOD for the disaster management committees regarding what administrative actions should be taken at different stages of flood warning.

The pilot initiative has provided with such a drill on evacuation operation for the first time in Bangladesh. The pilot effort has carried out a lot of key issues as important learning, related to evacuation operation. Such as, who will issue an evacuation order? When will the evacuation take place? Where to evacuate? Who will be involved in the evacuation process? Whom to evacuate? What would be the priorities? How to evacuate? And so forth. Now, it is very important to incorporate the learning of the pilot initiative in the policy guidelines as evacuation instruction for the local authorities of flood prone areas. If such expected policy guideline is prepared, that no doubt, would help a lot to the respective local level authority as decision making tool to evacuate vulnerable communities from high flood risk prone areas. Such initiative would also add additional value to the risk reduction process.
Flood evacuation drill in pictures

The executive Eng. of FFWC sending flood warning SMS to the assigned cell number of Grameenphone

Project implementation officer (PIO), the secretary of UzDMC explaining flood situation by presenting web-GIS map

On the behalf of Upazila disaster management committee, Upazila nirbahy officer (UNO) received flood warning SMS

UNO issuing the evacuation order for the vulnerable unions

Emergency meeting of UzDMC going on at Islampur of Jamalpur

Emergency meeting of UzDMC going on. The chairman trying to identify the most vulnerable villages on the basis of risk map
Flood early warning dissemination at family and community level in pictures
Preparedness at family and community level in responding to flood early warning in pictures
Volunteers’ action in evacuating vulnerable communities in pictures
Vulnerable communities taking shelter and emergency response at flood shelter in pictures
Closing ceremony of the flood evacuation drill in pictures

Elected member of the Parliament delivering speech in the Closing ceremony

Representative of FFWC Delivering speech in the Closing ceremony

Deputy Commissioner of Jamalpur district delivering speech in the Closing ceremony

Representative of JAXA Delivering speech in the Closing ceremony

Representative of DDM Delivering speech in the Closing ceremony

Representative of ADB Delivering speech in the Closing ceremony
Annexure
Applying remote sensing in river basin management

Scenario for conducting evacuation drill

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Time</th>
<th>Description of the scenario</th>
<th>Key actors</th>
<th>Logistics and materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>9.00 am</td>
<td><strong>5 Days Before the Evacuation Operation:</strong>&lt;br&gt; BWDB FFWC office at Dhaka. The staffs are busy with their daily activities i.e., collecting information, data input and analysis. They would monitor the daily forecast of GBM model and the local flood model on Web GIS. It is found that some part of Kulkandi/Jadur Char Union will be inundated in 5 days in the local flood model. The responsible executive engineer would develop SMS contents and get concurrence to send this from DDM. After getting confirmation send the SMS (Symbol) to the citizens of pilot union and the SMS (English) to the pre-registered selected Upazila DMC officials.&lt;br&gt; (This part will be simulated by BWDB FFWC staff staying in Dhaka. After receiving the phone call from the lead facilitator, the FFWC staff will send the SMS messages already prepared before the evacuation drill.) Web GIS flood prediction image and share it to DDM and Grameen phone.</td>
<td>BWDB FFWC, executive engineer of FFWC and office staffs</td>
<td>Office facilities, computer set up etc.</td>
</tr>
<tr>
<td>02</td>
<td>10.00 am</td>
<td><strong>5 Days Before the Evacuation Operation:</strong>&lt;br&gt; The UNO will receive the flood early warning SMS and Web GIS flood prediction image by fax (if available) from DDM/FFWC and call for emergency meeting with UzDMC.</td>
<td>The Upazila Nirbahi Officer (UNO) and his/her office staff</td>
<td>Available office room facilities convenient to UNO</td>
</tr>
<tr>
<td>03</td>
<td>10.15 am</td>
<td><strong>5 Days Before the Evacuation Operation:</strong>&lt;br&gt; An emergency meeting of UzDMC will be held at the</td>
<td>The key members of the</td>
<td>Available conference</td>
</tr>
</tbody>
</table>
conference room of Upazila office premises. The meeting will focus on the following issues:

- Reviewing the existing water level of the nearest river;
- Analyzing the flood early warning SMS and Web GIS flood prediction image by considering the flood risk and reality of the local context;
- Identifying the most risk prone unions that require evacuation operation;
- Providing instructions to the concerned officers and departments for ensuring the appropriate use of safe shelters;
- Providing directions to the service providing agencies such as health department, department of public health engineering and NGOs for ensuring the emergency needs of the flood effected people;
- Providing instructions to the concerned agencies especially the ANSAR VDP and NGOs for disseminating flood early warning including interpretation of SMS messages at family and community level through local medias such as microphone of the mosques;
- Mobilizing logistic supports for operating evacuation;
- Issuing evacuation order to the concerned unions;
- Follow up and monitoring of the warning

upazila disaster management committee (UzDMC)

room facilities of UNO office and written evacuation order
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td><strong>4 Days Before the Evacuation Operation:</strong> The chairman of union Parishod will receive the evacuation order and call for an emergency meeting for UDMC.</td>
<td>Available office room facilities of Union Parishod.</td>
<td>The chairman and secretary of the union Parishod.</td>
</tr>
</tbody>
</table>
| 05    | **4 Days Before the Evacuation Operation:** An emergency meeting of UzDMC will be held at the conference room of Upazila office premises. The meeting will focus on the following issues:  
  - Identifying the most risk prone villages that require evacuation operation;  
  - Providing instructions to the concerned officers and departments for ensuring the appropriate use of safe shelters;  
  - Providing directions to the service providing agencies such as health department, department of public health engineering and NGOs for ensuring the emergency needs of the flood affected people;  
  - Providing instructions to the concerned agencies especially the ANSAR VDP and NGOs for disseminating flood early warning at family and community level through local medias such as microphone of the mosques;  
  - Mobilizing logistic supports for operating evacuation;  
  - Follow up and monitoring of the warning dissemination and evacuation operation. | Available meeting room facilities of Union Parishod. | The key members of the Union Disaster Management Committees (UDMC). |
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>06</strong> 12.00 am</td>
<td><strong>5 Days before the evacuation Operation:</strong> Residents would receive cell phone SMS on flood early warning and take family level preparedness measures.</td>
</tr>
<tr>
<td><strong>06</strong> 5 Days before the evacuation Operation:</td>
<td>Volunteers would disseminate the news of water increase and necessary family level preparedness measures including interpretation of SMS messages at family and community level through megaphone and microphone of the mosque.</td>
</tr>
<tr>
<td><strong>06</strong> 4 days before the evacuation Operation:</td>
<td>A group of dedicated volunteers would request the community people for shifting through megaphone and microphone of the mosque.</td>
</tr>
<tr>
<td><strong>06</strong> 3 days before the evacuation Operation:</td>
<td>Training of the evacuation operation (before the day of evacuation and the day of evacuation): A group of well-equipped and dedicated volunteers would engage themselves in evacuating the most vulnerable household members to the safe shelters.</td>
</tr>
<tr>
<td><strong>07</strong> 2.00 pm</td>
<td><strong>After evacuation:</strong> Vulnerable households would take place at safe shelters and emergency services will be provided by the service providing agencies.</td>
</tr>
<tr>
<td></td>
<td>Trained volunteers/members of village platoon of ANSAR VDP, the members of selected households</td>
</tr>
<tr>
<td></td>
<td>Megaphone, Accessible media at community level, statues, lifejacket, boat, buoy, household belongings, poultry, cattle, etc.</td>
</tr>
</tbody>
</table>

**Applying Remote Sensing Technology in River Basin Management - ADB TA8074-REG**

26
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 2.30 pm | **Closing programme of the evacuation drill:**  
The representatives of Upazila and union disaster management committees and the honorable guests of the event would provide their closing remarks to the vulnerable people regarding the objective of the event.  
The representatives of UzDMC, UDMC and guests.  
Banner and sound system. |

*At 3:00pm, the event will end.*