

STANDARD OPERATING PROCEDURE
Irrigation Department
Uttarakhand



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1. Context

Uttarakhand is an important state in India due to its geographical locations which share their international border with China and Nepal. It's also has a considerable importance with respect to tourism and religious perspectives. Uttarakhand is vulnerable to natural and man-made disasters and the situation is getting graver due to its unplanned growth and development. State has been sensitive to the disasters such as landslides and earthquake in hilly areas and flood in the plains. Apart from this, state has been facing the intensity and frequency of disasters for the last three decades. The irrigation department is responsible for the maintenance of rivers and embankment in the state. Therefore, department has a significant role in disaster management. The work done by the department throughout the year is important in various phases of disaster management. In order to work systematically at each step of the disaster, the standard operating procedures from the district to the field level have been prepared keeping in view the guidelines issued from the state level higher officials of the department.

2. Objectives

Key objectives of standard operating procedure of the Irrigation Department are following -

- To build departmental capacity for disaster preparedness actions towards reducing the loss caused by disasters and help in preparing strategy for quick action at the time of the disaster.
- To make clarity among all departmental officers and staff, from the state to the field level, regarding their tasks and responsibilities.

3. Pre-Disaster Actions

The following activities will be undertaken under the pre-preparatory process by the department:

3.1: Determination of institutional role and responsibilities

- As per the instructions of the Secretary (Disaster Management), it is mandatory to provide relevant information from state to district level of the consequences of flood, landslide, and flash flood considering the minimum requirement given by IRS like planning, logistics and by identifying officers of operation wing and identifying other personnel and will be ensured to make available the State and District Emergency operational center. At the state level the Chief Engineer and Superintending Engineer / Executive Engineer at the district level will be the Nodal Officer.

- Under the direction of the State Disaster Nodal Officer, a WhatsApp group will be set by all concerned officers / staff till the month of May so that any kind of information related to the disaster can easily be delivered to all within a short period of time.
- The list of names, addresses and contact numbers of all concerned officers / staff will be prepared and adhered in each district headquarter, Tehsil headquarter, Block headquarter and panchayats so that everyone can get aware of this and contact with any official can be made in emergency situation.
- Flood control room will be setup to take daily data from rivers and barrages. Assistant Engineer will be the in-charge of Flood Control room and will be responsible to report the information related to the flow of rivers, water level etc. every day to the chief of his department and the district administration too. This check post will be active from 15th June 15 to 15th October.
- All information related to flood control room and their contact number will be required in the concerned District Headquarters, Tehsil Headquarters and Block headquarters.

3.2 : Risk assessment / inspection

- The most sensitive Blocks / areas of most vulnerable districts will be identified by the month of March-April. State Disaster Nodal Officer, Chief Engineer and state level Executive Officer will be responsible for this work.
- The Executive Engineer (Irrigation Department) will inspect and identify the weak embankments, reservoirs made of soil like Haridwar, Coat, Bagul and weak gates of built barrages etc. as per the instructions of the District Magistrate till March-April and submit their information to the District Magistrate Prior to 15th June for the repairing of those weaker sites.
- The Assistant and Junior Engineer will ensure the monitoring of the coast during the entire Monsoon Session (5th June to 15th September) under the guidance of the Executive Engineer.
- With the help of the State Disaster Management Authority, State Disaster Nodal Officer at the department level will keep the information of flow of rivers / behaviors in such areas with the help of Central Water Commission, Disaster Mitigation and Management Center and Meteorological Department and other departments / institutions till the month of May. By collecting information from various sources and establishing public address system, such areas can be evacuated for public safety before the incidence of flash flood in order to avoid unnecessary delay in rescue operations.

- The place with the possibility of maximum flood of each of the rivers, streams, will be identified so that the information of that level broadcasted among the people before the disaster. Simultaneously, after receding the excess water during floods, the information will be displayed in the urban and rural areas by marking the maximum level of water in the river.

3.3: Resource mapping

- The Executive Engineer will ensure the deployment of the Assistant Engineers / Junior Engineers by distributing the whole Zone in different sectors in view of the possible circumstances of the disaster between April and June.
- By the end of May, all the Executive Engineers will direct their Assistant and Junior Engineers to ensure that they are able to manage sand slabs in place of embankments, so that they can be used in case of erosion.
- Under the instructions of the Chief General Engineer, the list of physical resources such as vehicles and machines, registered contractors, other vehicle owners and available manpower with the department will be listed out with the assistance of the Executive Engineer, Zone wise Assistant / Junior Engineer of all the districts till May and provided it to state headquarter.
- Before 15th June, the circular will be issued from the Executive Engineer level instructing all Assistant Engineers to be present especially during the monsoon period.

3.4: Maintenance of resources

- The Executive Engineer will assess the potential disaster and respective damages before 15th June as per the instructions of state headquarter so that request of tender can be issued for the relevant contractor and further equipment and human resources can be hired on rent/procured.
- Before 15th June, the Executive Engineer will separate the list of sector wise information of machines, vehicles, petrol pumps for diesel and human resources and further will send the same information and list to the State Headquarters.

3.5: Capacity building and Organizing Mock drills

- The Chief Engineer at the state level will ensure the capacity building training organized for the departmental staff at the department level during April-May in order to deal with the disasters.
- The Department will nominate its officers and ensure active participation in the rehearsals held at the state and district level from time to time to protect from disaster. This will be organized by Disaster Management Office.

- The Executive Engineer, with the help of District Disaster Management Authority and under the leadership of the Irrigation Department, a community awareness campaign will be launched in the month of April-May to make them aware about to get the status of the rivers through newspapers or other means and stay away from the rivers during potential period of the disaster.

4. Guideline for Information flow and Actions

The irrigation department mainly oversees the works related to rivers, reservoirs, drainage and barrages notified by the state government and generally the flood control room of the department is established. Under the leadership of the Assistant Engineer, these flood control room will be especially active from 15th June to 15th October. The communication system of flood control room will be connected to the district disaster control room. In particular, the information related to water level and fluctuations of the rivers will be collected from flood control room every day and sent to the Department Headquarter at state level through the Executive Engineer. Simultaneously, the status of the barrages and reservoirs will also be monitored through the flood control room and the information of the possibility of any kind of disaster will be immediately given to Executive Engineer through in-charge officer (Assistant Engineer) of the chamber. Nodal Officer of the State disaster management office will collect information and submit it to the Head of the Department. The Department will continue to receive information about the possibility of disaster from the Indian Meteorological Department and the Central Water Commission as well. Department will share the information received from the Central Water Commission with the State and District Disaster Management Authority.

5. Direction and coordination

Monitoring of rivers, barrages and reservoirs through flood-check / flood control room are key functions of the irrigation department. Generally, the departmental state headquarter releases guidelines for all the offices located in all the districts, from 15th June to 15th October, and on the basis of the same guidelines, all personnel of the department are offered their role.

5.1: Response in case of No Early Warning

In the event of any disaster occurrence or no warning, Assistant / Junior Engineers should become active in accordance with the prior guidelines in their respective jurisdiction with the gangman. Further guidance and coordination will depend on executive engineer's instruction.

5.2: Response in case of Early Warning

The Irrigation Department is directly in contact with the Meteorological Department. It informs the State Disaster Management Authority / State Emergency Operation Center about the disaster before 48-72 hours through the state headquarter and released instructions and co-ordinations points to stay active by informing the district and division level offices

6. Determining the level of response on the basis of disaster intensity

6.1: First Stage

- High alert will be issued by the State Headquarter for event of flooding above the danger mark of river on the basis of information received from the flood control room. Frequency of patrolling of Meth, Junior Engineer and Assistant Engineer will be increased at executive engineer level. Monitoring system will be ensured in the night also.
- In case of river water flowing above danger mark, a warning will be issued to the community to reach to the safe places on the instructions of the district administration and the concerned executive engineer.
- In the event of the disaster, the district administration and the concerned executive engineers will order the Gangmen and local technical-non-technical staff and the nearby machine drivers to reach the disaster site immediately.

6.2: Second phase

- In case of landslide and flash flood, the Executive Engineer of the concerned area will inform the Public Works Department through the district administration for the removal of the debris lying on the road and facilitating to get the traffic system restored.
- The Executive Engineer on the instructions of the district administration will ensure to send machines even outside of their jurisdiction in case of of any major disaster.
- During the disaster, Assistant Engineer as in-charge of the Flood control room will provide information to the Executive Engineer about the river and their flow. The Executive Engineer will continue to provide all the information received immediately to the Disaster Control Cell established in the district and to the District Disaster Management Authority.

7. Procedure to be undertaken after disaster

The following procedure will be undertaken related to accounting and other administrative work:

Administrative work

- Cleanliness of the flow of natural water sources like Naula, Gadhera will be ensured immediately after the disaster under the guidance of concerned Executive Engineer.
- Executive Engineer, on the instructions of the District Magistrate, will ensure the repairing of damaged dams after October month.
- The Executive Engineer will ensure the clearance of rivers and flood-resistant structures on the basis of the fund received from the departmental state headquarter.
- The construction of flood-resistant wall under the flood protection scheme will be made in the damaged areas by the Executive Engineer on the order of the State Headquarters as per requirement.

Discussions on executed operation

- To assess the damage and prepare its report.
- To demand budget for the damages by sending the damage report to the government.
- To recommend based on priority after scrutiny of demand for compensation.

Suggestion

8. Checklist

Disaster Preparedness

This form will be filled by the Nodal Officer and the district emergency operation center and will be sent to the Head of the Department (at the state level)

Activities Undertaken	Yes/No	Comment
<p>Determination of institutional role and responsibilities</p> <p>Communication arrangements have been established with the following agencies / institutions:</p> <ul style="list-style-type: none"> • State emergency operation center • State disaster management authority • District emergency operation center • District disaster management authority • Departmental office (inside division) • District administration 		
<p>Nodal officer has been appointed at the Division level within the department.</p>		
<p>A Disaster Management Team has been formed at the division level within the department.</p>		
<p>At the division level, the list including all departmental officials and staff names, address and contact numbers has been prepared.</p>		
<p>At the district level, the Executive Engineer is associated with the WhatsApp Group created by District Disaster Management Authority.</p>		
<p>The names, address and contact numbers of the Incharge of the flood control rooms have been conveyed to the District Disaster Management Authority.</p>		
<p>Co-ordination among other districts has been set up to deal with drought due to decrease in water level.</p>		
<p>Risk assessment Sensitive districts and development blocks have been identified.</p>		

The District's Executive Engineer has inspected and identified the weak walls, damaged reservoirs, barrage weak gates.		
A list of Assistant Engineer / Junior Engineer has been prepared for monitoring the coast.		
The list has been prepared for the displacement of weaker sections during flood.		
Resource mapping Inspection and repair of pumps, generators, motor vehicles and station buildings have been ensured.		
Establishment of water level gauge has been done on all small / large tank structures.		
Duty has been divided among the personnel by dividing the zone into sector.		
Sandstones have been managed at place to place.		
The list of registered and tagged contractors has been prepared in the department.		
The provision of repairs of the bridges, culverts, overflow channels, the control gates etc has been made.		
Capacity building and MockDrill Training has been done for all officers / staffs on disaster management		
Departmental officers / employees have been involved in the rehearsal on disaster management, organized by the Disaster Management Authority.		
Procedure has been made to train the departmental officers / employees to prevent from disaster.		
There is proper arrangement for exchange of information in case of disaster.		

During Disaster

This form will be filled by the Head of the Department and sent to District Disaster Management / District Magistrate-

Activities Undertaken	Yes/No	Comment
The flood control room established inside the department has been activated.		
The inlet and outlets of the water are inspected and kept in proper condition.		
An emergency equipment kit is being used at the site of the disaster.		
Assistant Engineer patrol has been increased during high alert.		
Flood monitoring system is active in all flood affected areas.		
There is a provision for exchange of information in case of river water above danger mark.		
All technical and non-technical personnel have been instructed to immediately reach the disaster site.		
Information about the water level and its effluent of the rivers is being given to the administration.		
