

## Policy Brief

### *“Towards Integrating Disaster Risk Reduction and Climate Change Adaptation”*

#### **Introduction**

Gorakhpur is highly vulnerable to floods and out of the total 19 blocks 17 blocks is flood prone. Floods are recurrent phenomenon in Gorakhpur, which cause huge loss of lives and damage to livelihood systems, property, infrastructure and public utilities. It is a cause of concern that flood related damages are showing an increasing trend. There has been change in flooding patterns also. The floods are frequently flash and accidental, smaller rivers like Kuwano & Aami are also causing larger damages, water retention (and hence water logging) periods are increasing.

The water logged situation disrupts the whole crop cycle and infrastructure. Many people become victims of water borne diseases like diarrhoea, cholera, dengue and Japanese encephalitis, as the flood waters stagnate and the natural lines of drainage are disrupted due to construction of embankments, roads and other encroachments.

Presently situation has become worsen in the region, specifically in Gorakhpur district where flood situation is repeated events due to its geographical specifications, unplanned development, lack of effective preparedness plan and lack of awareness at departmental level.

Gorakhpur Environmental Action Group (GEAG) and Institution for Social & Environmental Transition (ISET) along with National Institute for Disaster Management (NIDM), Government of India & District Disaster Management Authority (DDMA), Gorakhpur conducted a research project in the Gorakhpur District to understand systemic factors responsible for flood resilience under changing climate conditions. The major objectives of the research are:

- To understand the systemic factors within the flood prone Gorakhpur district of eastern Uttar Pradesh that contribute to resilience or exacerbate vulnerability;
- To understand specific policy innovations that could help to bridge the vertical gap between the integrated national policy framework and local contexts and the horizontal gap between actions within sectoral development program to integrate DRR and CCA practice.

*Disaster Risk Reduction and Climate Change Adaptation approaches are integrated at National Level in various Government Programmes & Policies. Though these adaptation issues integrated at National Level but there are some significant gaps like capacity/knowledge of local authorities & various stakeholders that need to be addressed at State/District and local level to enable the vulnerable community to adapt to climate variability and change.*

## Approaches & Result

Various activities were taken up simultaneously at the start of the project. Involving Government organization was the key of this research program and to start the process, project team sponsored an experienced professional for district administration to provide support on maintaining coordination and preparing need based department wise plan. And also various data collection process initiated for the purpose of analysis and gaps findings at various level.

In July 2012, a project launching dialogue was organized to share the project purpose, implementation plan and expected outcomes with the concerned line departments. This dialogue was initial breakthrough in the project where Government welcomed the initiative of CCA and DRR integration in district level DRM plan. However it was observed need that the departmental capacities were not as strong as expected to take up the departmental DRM plan development process with considering specific climate change impacts in their respective departments. It was planned after consolidating the observations that capacity building exercise with departments and regular support on identification of possible climate impacts, integrating in planning process and developing plan was required at district level initially. Develop capability of planning with climate change integration and thereafter need of its effective implementation at various

levels drew the attention of DDMA after this consultative dialogue. It was mutually decided that additional support will be made after capacity building exercise to all the line departments in which every department will be facilitated to make their disaster management plan with addressing the observed climate impact in their respective areas. This process was all about to build the capacity of government officials in understanding climate change issues and developing plan accordingly. A series of departmental shared learning dialogues was conducted in Gorakhpur in the form of workshop. Departments such as Flood Control, Panchayati Raj, Nalkup, Jal Nigam, Animal Husbandry, Forest, PWD, minor Irrigation, Agriculture, Education, and Health were separately covered in a series of events.

Data related to flood damage, relief distribution, disaster response planning document and several “Government Orders” were collected and thoroughly analyzed to identify gaps at departmental level. Along with the observation of shard learning dialogues, identified points were used to prepare guiding documents or departments for preparing effective plan.

*It was observed that all previous plans were response centric. Existing plan was neither updated nor based on updated records and other departmental considerations. While searching the documents, team did not get any substantial record that could have detailed departmental distaste response plan. Similarly, No documentation on flood response/relief or any best practices was found at departmental level. After conducting first round of shared learning dialogues with departments, findings were documented and shared with respective departments.*

## Implications & Recommendations

Departments	Gaps identified	Recommendations to departments
<b>Rural Development/ Ditt. Administration</b>	-Lack of adequate human resources adversely affects the quality of construction works and hence creates hurdles	-Development programs should be designed keeping in mind the local disaster threats and disaster reduction should be an integral part of the development programs
	-Lack of information on the amount of money given to the beneficiaries under the disaster relief fund	-Coordination between governmental planning and development projects should be established
	-Due to the lack of information on disaster management relief fund, the funds are not utilized comprehensively.	-MGNREGA scheme should be utilized for cleaning of rivers and removal of silt. Several others developmental works can be done through MNREGA funds in peace time.
<b>Health Department</b>	- Connecting road to PHCs/CHCs gets damaged during rainy season	-In the construction of PHCs/CHCs, it is important to include flood resistant techniques along with earthquake resistant techniques.
	-Long duration power cuts creates problems in attending the patients in the PHCs/CHCs	- Training on Do's and Dont's at times of disaster should be organized for the members of Village Health and Sanitation Committee
	-Women employees feel unsafe working in the late evening hours in the centers because there is no adequate arrangement of lights of the roads	
	-Caution before floods are not given due to which adequate preparations are not made	
	- Most of the health centres get water logged due to heavy rain.	
<b>Education</b>	-School premise is often used for shelter and relief centers during flood disaster.	-In the construction of schools, it is important to include flood resistant techniques along with earthquake resistant techniques
	-Lack of knowledge in students regarding basic disaster preparedness and safety.	-Site selection for construction of schools should be done at a safe and elevated place
	-Many of the schools are not located at elevated land	- Information and awareness on use and management of fire extinguishers installed in the schools should be given not only to the teachers but also to accountants and employees of other departments

	-	- In the school campus, the Mark-II hand pumps should have proper water outlet arrangements
		-Mock programs in the schools should be organized on relief and management of disasters
		In order to assess the amount and extent of damage caused by disasters, proper formats should be developed in which the data should be filled in by the schools. After the assessment of the formats, flood relief fund should be released to the schools immediately.
		-Tree plantation program can be actively promoted through schools.
		-At times of disaster, alternate education options should be arranged so that the fear of disaster from children’s mind is overcome.
		-Students beyond the strength capacity should not be accommodated in a class.
		-The schools should not be used as disaster relief camps or for storage of food grains. This adversely affects education.
<b>Agriculture / Agriculture Protection Department</b>	-Crops get affected due to untimely rains, extreme cold and hot temperatures.	-Works related to land leveling and constriction of farm bunds for the conservation of soil can be done under the MGNREGA program.
	-The situation of agriculture go-downs at the block level are not good due to which flood water enters the go-downs and causes damage to the chemicals stored there.	-For enhancing the soil fertility, it will be appropriate to promote formation of vermin compost and Nadep compost structures under the MGNREGA program.
	-Water logging in the crop fields causes problems in controlling pests, insects and diseases. Also, application of pesticides in water logged areas cause water pollution.	-Effective coordination should be established between soil conservation department, agriculture department and agriculture protection department.
	-Problems in storage of crops.	-There is a need to bring about awareness among farmers from the flood affected areas to use flood resilient varieties of crops.
	-Soil structure gets affected and amount of silt increases	
	-Floods negatively affect crop cycles	

<b>Animal Husbandry</b>	-Due to the lack of water in summer season owing to extremely high temperatures, the animals are not able to maintain their internal bodily temperatures because of which problem of infertility is increasing.	-Vaccination of animals should be before flood time. It will especially prevent the deaths of animals from foot and mouth diseases.
	-Problems of fodder for livestock increases because of water logging	-Shelter and fodder for animals should be the part of relief package
	-Problem of shelter for animals arises due to continuous rainfall at a time which leads to water logging	-Medicine availability at village level and awareness in people can save many of the animal's lives.
	-Water logging leads to problems of mosquito/fly breeding which causes diseases	
	-At times of flood, it becomes a huge task to shift animals to safer place	
	-Animals suffer because of unavailability of medicines at veterinary hospitals	
	-Unavailability of disaster kit	
	-Death of animals due to outbreak of infectitious diseases such as FMD, HS, BQ, etc.	
	-Lack of fodder for animals is also becoming a cause for their deaths.	
	<b>Jal Nigam</b>	-Most of India Mark-II pumps are not active during disaster
	-Funds for installing hand pumps at elevated lands are not sufficient enough	-There is a fixed amount for establishing hand pumps. Therefore, it is important that in flood affected areas, support of MGNREGA should be sought for installation of hand pumps are high elevated areas.
	- The plan for establishing sewerage system for the city of Gorakhpur is ready but due to non-allocation of funds, the work has not yet started	-While construction of buildings, problem of flood should be kept in mind as people think about rainwater harvesting and problem of earthquake

	<p>- Problems of villages and cities are different and hence the solutions too. The work remains incomplete because there is only one person who looks after both the problems – that of villages and cities too.</p> <p>For every scheme, there should be adequate number of regular staff to carry out the tasks</p>	<p>-To enable access of water to entire villages and wards, arrangement of adequate funds under the old programs should be done for the renovation of all the water sources.</p> <p>-The Panchayat (Local body) should get the defunct hand pumps repaired in time. It should not waste time for depending upon Jal Nigam for a long period of time.</p>
		<p>-For the implementation of schemes, the funds should be made available before the actual work on the ground starts. In many cases what happens is that the construction work gets started but the funds are not released because of which there are unnecessary delays in the completion of work and the cost of materials and labor goes on increasing.</p>
		<p>Adequate funds should be made available for maintenance of drinking water projects.</p> <p>Faster availability of funds from the disaster relief scheme</p>
		<p>In times of disaster, in order to expedite the process of relief and rehabilitation, system of quick communication, decision and implementation should be established.</p>
<p><b>Panchayati Raj Department</b></p>	<p>-Lack of resources for repairing of destroyed public properties</p>	<p>-Assessment of flood and other disasters in local areas should be done according to which provision for funds should be made for the maintenance of Panchayat bhawan and other public buildings.</p>
	<p>- Lack of active involvement in planning and implementation process</p>	<p>-Awareness should be brought about among villagers to keep their village surroundings clean and usage of individual, school, Anganwadi and community toilets. Awareness campaigns can be done by using motivation groups, nukkad natak, media, etc. Amount of materials should be also increased.</p>
	<p>-Capacity building of Pradhans and other members are not done at local level.</p>	<p>-For the repair of India Mark hand pumps for drinking water, funds under Panchayat Raj, 13th Finance Commission should be increased.</p>
	<p>-Lack of infrastructures and other facilities</p>	<p>-Trainings should be given to cleaning workers, block and village level motivators.</p>

		<p>-Assessment of damage caused to public properties should be done and accordingly the demand for renovation/repair of these properties should be made. This should be implemented at the Gram Panchayat level for which adequate funds should be allocated.</p>
<p><b>Flood Division and Drainage Division</b></p>	<p>- Less number of work supervisors in the departments</p>	<p>-As per the SDRF guidelines, the embankments should be re-established within 45 days. It becomes very difficult to get the work completed within this deadline.</p>
<p><b>Saryu Canal Division</b></p>	<p>- The embankments get cracked in summer season due to high temperatures. Situation becomes even worse if this is immediately followed by heavy rains.</p> <p>-Pressure of the embankments increase when all of a sudden, water increases in the rivers which are on the way to Nepal</p> <p>-Lack of support and cooperation from Tehsil and local government</p> <p>-Heavy rains ruptures the branch-lets of canals which hampers irrigation facilities</p> <p>-At some places, heavy rainfalls lead to water logging in the villages due to which the canal requires to be closed and opened from some other area. This adversely affects irrigation</p> <p>-Depletion in the groundwater levels due to which the discharge from tube wells is decreased</p> <p>-Low electricity voltage because of which the tube wells get defunct</p>	<p>-It is important to activate the flood protection committees</p> <p>-Construction and re-establishment related works are done during a fixed time. If the funds are not made available at this time, then it gets very difficult to get the work done.</p> <p>-Considering the geographical and environmental situation of an area, it is important to place bans and restrictions on cultivation of water-intensive crops such as peppermint, etc.</p> <p>-Diversity in cropping systems should be strictly implemented</p> <p>-The structural designs of various infrastructures which are related to canals are done as per the orders of respective departments. These infrastructures should also be made earthquake proof and flood resistant.</p>

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In the Kharif season, the pipelines are destroyed at some places by the farmers

-As a mechanism to adapt to drought and flood situations, various rivers should be joined so that they prevent floods and help in increasing the groundwater table levels

-It is important to have convergence between various departments and Panchayats in order to prevent encroachment

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