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STRONG IN DRM! DISASTER RISK MANAGEMENT

FUNCTIONAL SIMULATION FOR ANTICIPATORY ACTION WITH RIVER BASIN APPROACH

Nepal Red Cross Society

DANISH RED CROSS

Finnish Red Cross

MERCY CORPS

FUNCTIONAL SIMULATION EXERCISE FOR ANTICIPATORY ACTION WITH RIVER BASIN APPROACH

Content:

1. BACKGROUND

Since 2019, the Nepal Red Cross Society (NRCS) has conducted Flood simulation exercises on Anticipatory Action (AA) to evaluate the anticipatory action mechanism developed jointly with the government authorities. This year, under the 'Strengthening Ownership and Governance in Disaster Risk Management (STRONG in DRM)' project, spearheaded by the Danish Red Cross (DRC) in collaboration with the Finnish Red Cross (FRC) and Mercy Corps, Implementing partner Nepal Red Cross Society and financial support from the European Civil Protection and Humanitarian Aid Operations, a joint functional simulation on anticipatory action unfolded in the municipalities of Janaki, Tikapur, Geruwa, and Rajapur, all located within the Karnali River Basin. The municipalities took the lead in organizing the event. Held from November 26 to 30, 2023, the exercise aimed to access the activation and operationalization of anticipatory action frameworks and corresponding early actions in each municipality. Employing a river basin approach, the simulation included a non-target municipality, providing a comparative perspective on their capacity to operationalize the anticipatory action mechanism and assess inter-municipal coordination mechanisms during floods, acknowledging the unique challenges faced by each municipality, despite sharing the impact of the same river. The exercise served as a testing ground for the coordination mechanisms involving different levels of government during crisis situations, with the active participation of the District Emergency Operation Center (DEOC) and Provincial

Emergency Operation Center (PEOC). The simulation also tested various cash transfer modalities for cash in anticipation, particularly during crises.

Lessons learned and identified gaps during the simulation will contribute to refining the anticipatory action mechanism, and the recommendations derived will be shared with the municipalities. Incorporating real-time scenarios aligned with the Forecast-based Action (FbA) mechanism, the simulation considered factors such as impact thresholds, a seven-day lead time, and targeted interventions for vulnerable populations. A comprehensive half-day debriefing session followed the simulation.

2. OBJECTIVE

The simulation was designed to achieve twofold objectives:

- Examine the municipal government's capacity to implement their anticipatory action framework and ensuing inter-municipal coordination and information-sharing mechanisms needed for effective disaster management within the Karnali River Basin. The evaluation also extended to the coordination capacities of government line agencies: ward, municipality, district, and federal levels.
- Test different cash transfer modalities, including the Rahat app utilizing blockchain technology, social protection program registries, and traditional bank accounts to identify their efficacy during emergency situations and assess their suitability for cash in anticipation.

The lessons learned and identified gaps during the simulation will play a pivotal role in refining the mechanism further, ensuring its continuous improvement and alignment with the evolving landscape of disaster management and early action.

3. PARTICIPANTS

The simulation engaged relevant key stakeholders from the government and other humanitarian organizations who have direct or indirect roles in a disaster situation. Participants were categorized as follows:

- Actors: These are the participants who are at the forefront during a real disaster scenario and play active roles in the functionalization of anticipatory action mechanisms.
    - Government Level: Mayor/Chairperson, Deputy Mayor/Vice Chairperson, DRR Focal Person, Sectoral Focal Person, SSA Focal Person, Representative from Local Emergency Operation Center (LEOC) and Local Disaster Management Committee (LDMC), Security Forces. Coordination also involved the District Disaster Management Committee (DDMC).
    - NRCS (Nepal Red Cross Society): Staff and volunteers.

- Community Level: Community-based Organization (CBO) like Community-based Disaster Management Committee (CDMC), Disabled People's Organization (DPO), women's groups, female health workers and community members actively involved in early warning communication channels and early action. Households frequently affected by floods were engaged in the field-based simulation.

- **Control team:** A single control team, comprising members from the province, district chapter and sub-chapter of NRCS, operated from a separate location connected virtually to the four municipalities. This team oversaw the release of injects, tracked responses, provided additional injects if necessary, and ensured the simulation's overall progress.
- **Monitors:** Placed at each municipality, an NRCS team member served as monitor. Their responsibilities included ensuring timely receipt of injects, monitoring actors' comprehension of the injects, addressing any misunderstandings, recording decisions and actions in response to injects, and communicating updates to the control team.
- **Observers:** Relevant government officials from all three levels of governance, along with representatives from DRC, NRCS headquarters, FRC, and Mercy Corps, were present in the capacity of observer. A wide range of stakeholders including agencies engaged in humanitarian efforts with similar initiatives were invited for observation to ensure that they had a buy-in into the anticipatory action mechanism and also an opportunity to learn from the exercise. During the debriefing session, observers were encouraged to offer reflective insights based on their observations.

The table below outlines the institutions and key positions held by participants in the simulation.

S.N.	Organization	Position
1	Government	- Mayor/Deputy-Mayor - Chairperson/Vice-Chairperson - Chief Administration Officer - DRR focal person - Clusters' focal person: Education/Agriculture/Planning/Health/ Store/Employment/Women and Children - SSA focal person/MIS Operator - IT Officer/Technical Officer
2	NDRRMA	- Deputy Superintendent of Police
3	NRCS Province Chapter	- President - Board Members
4	NRCS District Chapter	- President - Vice-President - Secretary - Board Members

5	NRCS Sub-Chapter	- President - Treasurer - Secretary - Board Members
6	Ward Office	- Ward Chairs - Ward Members - Secretary
7	Nepal Police Office	- Inspector - Constable
8	Private sectors (Chamber of Commerce)	- Chairperson - Member
9	DEOC	- DRR Focal person - Information Management Officer
10	PEOC	- Secretary - DRR Focal person - Information Management Officer - Police Officer

4. METHODOLOGY

The simulation exercise was concurrently conducted across the four municipalities Janaki, Tikapur, Geruwa, and Rajapur, with dedicated stations established at each municipality office itself. The exercise incorporated a blend of desktop and field-based modalities. The readiness trigger involved coordination, communication, organizing meetings, and decision-making at the municipality level. The engagement of the Local Emergency Operation Center (LEOC) served the purpose of closely examining the activities that the LEOC would engage in during a real disaster scenario. Subsequently, the activation trigger transitioned to field-based simulations, where early actions and cash in anticipation were implemented in flood-exposed communities. By involving all relevant actors, the simulation aimed to replicate a realistic scenario while simultaneously helping participants understand their responsibilities within that context. The control team, situated at the NRCS district chapter, participated virtually through Google Team, overseeing and facilitating the simulations in all municipalities simultaneously. This approach was strategically chosen to enable a comparative analysis of the municipalities, evaluating their strengths and weaknesses in understanding the anticipatory action concept and their capacities to respond to provided injects. Each station had a designated project team member to ensure seamless communication and updates.

Injects, representing simulated scenarios, were delivered through various channels, including emails, SMS, phone calls, and in-person role plays. To mitigate potential delays due to poor internet connectivity, printouts were prepared as a backup for injects provided via email. Each inject was recorded in a flow chart detailing the corresponding activities based on lead time and identifying responsible individuals, prominently displayed for reference and clarity in the respective LEOC of each

municipality. Additionally, each municipality recorded all decisions made during the simulation in meeting minutes and formal letters were presented for any decisions reached. The use of a real database for vulnerable populations, extracted from the SSA database and flood exposure data for early actions, added authenticity to the exercise.

5. SCENARIO

Commencing with the Department of Hydrology and Meteorology's (DHM) weather forecast covering the monsoon season from June 1 to November 30, the simulation progressed over a timeline spanning seven days before the flood to 24 hours into the event. This included six primary injects and 26 sub-injects, strategically designed to assess the operationalization of the anticipatory action mechanism of the municipalities.

The scenario had the dual purpose of not only assessing the municipalities' capacity to implement the anticipatory action mechanism, examining the sequence of activities required to facilitate the effective implementation of pre-established plans and policies but also testing collaborative efforts among neighboring municipalities facing extensive flooding in the Karnali River basin. This involved pooling resources and seeking mutual assistance and coordination required both within and outside the municipality.

In response to the DHM's rainfall and weather predictions, collaborative meetings were held among municipalities. Subsequently, water flow forecasting data from global and regional bulletins indicated the possibility of flooding, complemented by a special bulletin from DHM forecasting upcoming heavy monsoons. The readiness trigger was reached seven days before the flood.

On flood minus four days, regional meteorological models and a special bulletin from DHM indicated imminent danger due to expected water levels surpassing critical thresholds from heavy rainfall. In response, the District Disaster Management Committee (DDMC) issued an order directing the Nepal Red Cross Society and other humanitarian organizations to coordinate directly with the municipality for cash distribution in anticipation. Following DHM's forecast bulletin signaling water level to cross the danger level in the next 48 hours in Karnali, an activation trigger was reached prompting targeted evacuation and cash distribution in Tikapur and Janaki respectively. This practical test aimed to evaluate and refine the modalities of cash transfer, enhancing its effectiveness and targeting particularly in disaster scenarios.

As the water level rose, injects regarding disturbances in emergency shelters and concerns about the risk of dengue in open spaces was also received. Reflecting real-life scenarios, despite forecasts indicating floods in all the four municipalities, the flood occurred in Tikapur, Rajapur, and Geruwa, but not in Janaki. The simulation examined potential conflict and health issues, providing a testing ground for assessing the municipalities' measures in resolving these challenges.

This summary encapsulates the major injects and events during the simulated flood scenario, underscoring the evolving challenges and responses from various stakeholders. For further details on injects, please refer to Annex 1 and for details on injects-wise activities, please refer to Annex 2.

6. OBSERVATIONS

RIVER BASIN APPROACH

The simulation occurred in four downstream municipalities along the Karnali River: Tikapur and Janaki in Kailali, and Geruwa and Rajapur in Bardiya. Including Rajapur Municipality, an area not covered by the project, was crucial for a comprehensive assessment of the river basin approach within the Karnali River Basin. The river basin approach hopes to enhance the operationalization of the Anticipatory Action Framework among municipalities within the same river basin by improving resource-sharing mechanisms and standardizing riverine forecast dissemination which can help in a reduction of inconsistent approaches and duplication of efforts.

Reflections

Project Areas – Janaki, Tikapur, Geruwa	Non-Project Area - Rajapur	Remark
Tikapur and Janaki have included anticipatory action (early action and cash in anticipation) in essential policy guidelines, frameworks, and Standard Operating Procedures (SOPs) related to disaster management. Social security system has been utilized for distribution of cash relief. Geruwa municipalities have recently initiated similar practices.	Anticipatory action mechanisms have not been incorporated into the plans, policies, and SOPs of Rajapur.	It was observed that all policies and plans in Rajapur are centered around post-disaster response. The operationalization of anticipatory action in real scenarios necessitates its inclusion at the policy level. For a river basin approach to anticipatory action to be effectively implemented, it is essential that all municipalities along the river basin incorporate anticipatory action into their policies and plans.
Flood forecasting data from global and regional bulletins and special bulletins from DHM are further localized to reflect the specific local context.	The flood forecasts rely on special bulletins from DHM.	Monitoring and cross-verifying forecasts from multiple sources, coupled with localized adjustments, enhances the accuracy and reliability of the forecast. Moreover, since the Karnali river flows downstream through the four municipalities, inter-municipal coordination on real-time river level updates is crucial. Systems for shared alerts at

		municipal borders where floods can impact simultaneously can facilitate the timely dissemination of early warning messages and promote coordinated efforts.
The early action framework, complemented by the early action matrix with clearly defined roles and responsibilities, enabled assigned actors to respond effectively to the provided injects.	In Rajapur, it was challenging to convince the Mayor and the municipal representatives regarding the concept of anticipatory action, as there was a predominant focus on response but the active participation of municipal representatives during the simulation indicated a positive shift in outlook.	Early actions, such as the maintenance of canals and irrigation channels that traverse multiple municipalities, necessitate a collaborative approach among the municipalities. Additionally, the standardization of relief support by municipalities for communities affected by the same river is crucial for minimizing conflicts and ensuring equitable assistance.
DRR focal persons from each municipality consistently coordinated, addressing not only the water level in Karnali but also engaging in resource-sharing discussions. Formal letters, bearing the Chief Executive Officer's signature, were dispatched for resource sharing as per the injects. An example includes Rajapur seeking a rescue boat from Tikapur post-flood. As Tikapur had already provided theirs to Geruwa, the DRR focal person connected Rajapur with Janaki's DRR Focal person, aware that Janaki was unaffected by the flood. Janaki generously provided their boat to Rajapur, exemplifying the significance of collaboration and efficient resource utilization.		Establishing coordination between municipalities for collaborative resource-sharing mechanisms among municipalities is crucial for efficient crisis management. Within the riverine approach, municipalities would jointly engage with provincial level for resource sharing, fostering a shared responsibility for disaster response and leveraging resources efficiently.

Challenges

- In real-time, during an actual crisis, challenges in coordination may arise as municipalities prioritize their own disasters, potentially hindering effective inter-municipality collaboration. This might be mitigated through regular inter-municipality coordination meetings as part of monsoon preparedness, focused on discussing comprehensive monsoon preparedness plans and opportunities for pooling resources.
- Political differences and divergent agendas among municipalities or regions within the river basin could impede cohesive efforts towards implementing a unified river basin approach to anticipatory action.
- Upon receiving forecasts, coordinating anticipatory actions, especially at the conjoining borders of municipalities, within the specified lead time may prove

challenging due to varying capacities among municipalities to respond promptly based on forecast lead times. Therefore, strengthening the capacity of the municipalities is vital.

- Inundation of roads may impede the effective sharing of resources, leading to logistical challenges. To address this, municipalities can establish alternative routes or prioritize the pre-positioning of essential supplies in flood-prone areas where alternative route is not available.

EARLY WARNING COMMUNICATION

Effective community engagement in early warning messaging was observed, utilizing various communication means. The Local Emergency Operation Center (LEOC) played a crucial role in delivering forecast bulletins and information was disseminated employing SMS, radio, sirens, miking, and community mobilization. Door-to-door visit was done by community members, including Badhghar/Chiraki, female health volunteers and Red Cross volunteers. Furthermore, the involvement of Ward Disaster Management Committee (WDMC) and Community Disaster Management Committee (CDMC) strengthened the outreach efforts.

Additionally, a new Interactive Voice Response (IVR) system was introduced during the simulation for early warning communication. IVR is an automated telephone technology that interacts with callers through pre-recorded audio prompts and voice recognition.

Upon receiving messages, majority of the communities comprehended the early warning message, as the messages were conveyed in the local language. This resulted in people receiving the message and evacuating in time.

Reflection

- While a majority of simulation participants understood the early warning messages (EWM), confusion arose among senior citizens and those with hearing impairments. Red Cross Volunteers, family members, and neighbors played a crucial role in conveying the early warning message to them.
- When disseminating information regarding cash support in anticipation, it is imperative to clearly articulate the intended purpose and potential applications of the support. To minimize potential conflicts, it is important to communicate the probability of the flood not occurring after providing cash support in anticipation of flood.
- The participants were not aware regarding the use of Red Cross hotline number – 1130 for feedback and complaint sharing. Community awareness regarding this requires improvement.
- IVR can be an efficient method for delivering early warning messages and gathering essential data through metrics such as call completion, drop-off rates,

and user interactions. While IVR offers valuable insights, several considerations should be taken into account:

- IVR systems heavily depend on auditory interactions, posing challenges for individuals with hearing impairments and elderly people with hearing problems or for those who are less familiar with mobile phones.
- IVR messages should be delivered in local languages or dialects to ensure comprehension by the community. Simple and straightforward messaging is crucial for effective communication.
- Particularly during the rainy season and when flood has occurred, network issues or insufficient mobile phone coverage may impact the effectiveness of IVR communication.
- Some community members may prefer direct human interaction over automated systems for critical communications, warranting sensitivity to community preferences.

CASH IN ANTICIPATION

The simulation evaluated different cash transfer modalities – Rahat app, a blockchain-based Cash Voucher Assistance platform in Tikapur, and bank account transfers in Janaki. The examination encompassed critical aspects such as the selection of beneficiaries, the utilization of existing social security programs, and the use of flood exposure data for informed decision-making. The beneficiaries were selected using existing data available from the social security registries of the municipalities. A cash transfer of Rs 600 was made through both Rahat App and bank accounts to targeted individuals that included persons with disabilities, pregnant women, and mothers with children under 33 months.

Rahat App (Tikapur)

- The Rahat App targets populations without bank accounts, allowing recipients to collect funds at a pre-identified location, which, in this case, was the ward office.
- In one case, during the flood exposure data collection, a family provided the contact information belonging to an individual residing abroad for employment. Consequently, no one at the household received information about the cash transfer during the simulation. This highlights the need for employing multiple mediums of communication.
- It is crucial to note that Rahat sends a token to the mobile number registered during the data collection process. Therefore, if beneficiaries provide an alternative mobile number, they will not receive the token required for the cash transfer. This procedure is designed to ensure the security and accuracy of cash disbursement. However, considering that many individuals migrate for employment purposes, discrepancies in registered mobile numbers may arise, potentially hindering the token sending process.

Bank Transfer (Janaki)

- The beneficiaries expressed a clear preference for cash in hand over bank transfers, especially during adverse weather conditions, such as heavy rain leading to inundated and blocked roads, making it nearly impossible to reach the bank to withdraw funds and then the market. Additionally, the shortage of vehicles during the monsoon season adds to the accessibility problems faced by the community.
- The bank is typically situated at a considerable distance, leading to a significant expenditure of both time and money for individuals travelling to and from the bank. This issue is particularly pronounced for persons with disabilities who may require assistance, necessitating the presence of someone accompanying them during the entire process. Moreover, certain community members, specifically females, expressed concerns regarding their lack of familiarity with the necessary procedures for withdrawing money from the bank.

Common Reflections

- The community members who participated in the simulation emphasized the necessity of initiating transfers at least 72 hours prior to flooding. Challenges accessing banks and markets during heavy rainfall and floods greatly affected their ability to use cash for essential needs.
- A limited understanding of the significance of Cash in Anticipation underscores the necessity for community engagement. Clear communication of selection criteria for cash in anticipation is crucial.
- Due to fluctuating migration patterns, it is essential to verify data before selecting beneficiaries.
- Community members acknowledged that having cash in anticipation would enable them to take early actions, such as evacuating, cutting crops, and safeguarding their livestock. They highlighted the substantial travel expenses to evacuation shelters, which often necessitate bringing only essential items and risking the loss of valuable possessions. Nirmala Budamagar underscored this point, stating, “After receiving early warning messages, when it is raining heavily, whether the flood comes or not, we come to the safe shelter and also bring our important stuff with us. We use money that we do not have for this. If the flood does not come, then our money gets wasted. If we are provided money before the flood, then we do not have to worry about whether to spend the money to go to the safe shelter or plan for the aftermath of the flood."
- Uniformity in the disbursement of cash support and the targeting process, especially in the context of cash in anticipation, is crucial to prevent conflicts arising from differing amounts received by individuals within the same community, particularly in scenarios where the anticipated flood does not occur. Advocacy efforts should be directed towards the government to ensure standardization in cash values in anticipatory action.

- To ensure the effectiveness of cash in anticipation and minimize potential conflicts at the community level, it is imperative that the forecasts are reliable and this hinges on the localization of trigger thresholds.

PROTECTION GENDER AND INCLUSION

- The simulation involved Community-Based Organizations (CBOs) such as mother's groups and Disabled People's Organizations (DPO) and also trained volunteers, both male and female.
- Dedicated toilets and shelters were assigned for males and females, incorporating disability-friendly features and designated spaces for pregnant/lactating women and senior citizens. Unfortunately, participants in the field simulation, misconstruing it as a mere act, did not fully utilize the allocated spaces.
- Grievances collected through the municipality's feedback mechanism were addressed by the Mayor/Chairperson and DRR focal person. The involvement of Ward representatives and CDMC convener facilitated conflict resolution, particularly concerning evacuation shelter and cash in anticipation.
- A Help Desk was established in the evacuation site for collecting and addressing community feedback. However, the participants remained unaware of this mechanism, resulting in the Help Desk functioning more as a formality.
- Community members exhibited apathy toward potential abuses tied to cash misuse during emergencies and post-disaster. Sensitizing and educating them about associated risks and potential abuses is crucial.

OPERATIONALIZATION OF DPRP

- It was observed that Rajapur lacked an updated list of task force members, a critical issue considering the rapid rate of out-migration. There is an opportunity for improvement in Rajapur, where it is advisable to enhance the regular updating of the list of trained human resources for more effective disaster management.
- Repurposing safe shelters as multi-functional community building and engaging the community in regular maintenance are crucial.
- All municipalities decided to maintain the Local Emergency Operation Center (LEOC) operational 24/7, starting from the readiness phase. The DRR focal person, often burdened with various responsibilities beyond DRR activities. The participation of cluster representatives in the simulation clarified roles and responsibilities across different departments at the municipality level and also engaged the ward level.
- Authority delegation in case of absence during emergency to ensuring a streamlined decision-making process.

- Coordination between LEOC - Local Emergency Operation Center, DEOC - District Emergency Operation Center, PEOC - Provincial Emergency Operation Center, NEOC - National Emergency Operation Center is crucial, especially during floods when additional hazards such as health risks may also arise.
- Updating DHM's thresholds to accurately reflect local flood thresholds is essential for initiating the activation phase of the early action framework. The challenge of inaccurate thresholds, compounded by the potential for flash floods and breached dams, has exacerbated forecasting difficulties.
- Advocating for standardized relief efforts, especially in cash distribution, particularly for dispute-free relief distribution, is essential for effective implementation of cash in anticipation.
- Anticipatory action should be integrated into the Disaster Risk Reduction (DRR) cycle. This ensures a comprehensive approach to disaster preparedness and response.

7. REFLECTION ON THE SIMULATION

- Active Participation of the District Emergency Operation Center (DEOC), Local Emergency Operation Center (LEOC), and Community Disaster Management Committee (CDMC). However, it is noted that the simulation did not include participation from the national level government; instead, the National Disaster Risk Reduction and Management Authority (NDRRMA) played a role as observers during the simulation.
- The timeline, injects and actions taken were clearly displayed on the wall to make it easier for the participants to follow the timeline of the simulation and for final review and reflection.

Annex 1: Injects

Inject 1: Weather forecast for monsoon season from the Department of Hydrology and Meteorology, spanning from June 1 to November 30 (Monsoon Outlook).

- **Inject 1.1**: Letters to be prepared at municipality level following the rainfall and weather prediction for this year's monsoon season shared by the DHM.

Inject 2: Utilizing water flow forecasting from the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometric Center of the Karnali River, there is a 74% probability of a flood recurrence within the next two years.

- **Inject 2.1:** With water flow forecasting data from the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometry Center of the Karnali River, there is a 79% possibility of a flood recurrence of 2 years.
- **Inject 2.2:** With water flow forecasting data from the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometry Center of the Karnali River, there is an 88% possibility of a flood recurrence of two years.
- **Inject 2.3:** With water flow forecasting data from the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometry Center of the Karnali River, there is a 92% possibility of a flood recurrence of two years. Additionally, Regional weather models (NCMWRF) forecasted that the Karnali water shed and lower basin areas will encounter heavy rainfall on 30 November 2023.
- **Inject 2.4:** DDMC has been informed that the Nepal Red Cross Society and other relevant organizations have available resources for cash and other forms of assistance. Therefore, the Committee urges the municipality and organizations to coordinate directly with the municipality according to the situation.

Inject 3: A 3-day flood forecasting bulletin issued by the Flood Forecast Division of the Department of Hydrology and Meteorology.

- **Inject 3.1:** With the availability of water flow forecasting of the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometric Center of the Karnali River, there is a continued possibility of the flood recurrence of 2 years. Additionally, regional metrological models (NCMWRF) and Global Forecast model forecasted that the Karnali water shed and lower coastal areas will encounter heavy rainfall on 30 November 2023.
- **Inject 3.2:** Special meteorological bulletin was issued by the Department of Hydrology and Meteorology indicating the risk of rainfall and flood in Karnali Basin and lower coastal areas.
- **Inject 3.3:** Information has been received that the water warning level is around 10 m and increasing at Chisapani Hydrometric Center.

Inject 4: A 3-day flood forecasting bulletin issued by the Flood Forecast Division of the Department of Hydrology and Meteorology.

- **Inject 4.1:** With the availability of water flow forecasting of the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometric Center of the Karnali River, there is a continued possibility of the flood recurrence of 2 years. Regional meteorological models (NCMWRF) and the Global Forecast model also forecast heavy rainfall in the Karnali watershed and lower coastal areas on November 30, 2023.
- **Inject 4.2:** Information has been received regarding the rapid erosion of the dam in Janaki Ward No. 9 Katase, Tikapur Ward No. 5 Shahipur and Nuklipur, Rajapur Municipality Ward No. 1 Tihuni, Chanaura, Murgahuwa, and Geruwa Village Ward No. 2 Rajipur Vanghusra. There is a risk of the dam bursting at any moment, leading to potential flooding in the community.
- **Inject 4.3:** Due to the continuous increase in water flow in Rani Jamra and Kularia irrigation canals, it is advised to immediately close the irrigation gates.
- **Inject 4.4:** Information was provided to the DDMC and Nepal Red Cross Society that cash was distributed to the selected beneficiaries through Nepal Red Cross Society and other agencies based on prior agreement following the cash distribution procedure of municipalities.

Inject 5: A 3-day flood forecasting bulletin issued by the Flood Forecast Division of the Department of Hydrology and Meteorology.

- **Inject 5.1:** With the availability of water flow forecasting of the Global Flood Alertness System (GLoFAS) at the Chisapani Hydrometric Center of the Karnali River, there is a continued possibility of the flood recurrence of 2 years. Regional meteorological models (NCMWRF) and the Global Forecast model also forecast heavy rainfall in the Karnali watershed and lower coastal areas on November 30, 2023.
- **Inject 5.2:** Information has been received regarding the water warning level (10.8) increase at Chisapani Hydrometric Center.
- **Inject 5.3:** Cash in anticipation was distributed, flood has not occurred yet and a conflict began in community. Community people who did not receive cash are protesting in the ward office.
- **Inject 5.4:** Urgent request to relocate people from low-elevated and generally inundated communities in the Karnali river coastal area to safer locations: Nuklipur and Shahipur of Tikapur Municipality Ward No. 5, Kunti tole, Katase, and Dharmaphanta of Janaki Ward No. 9, Tihuni, Murgahuwa, and Chanaura of Rajapur Municipality Ward no. 1, and Rajapur, Vanghusra, and Loharpur of Geruwa village ward no. 2.
- **Inject 5.5:** Information about the current situation of weather and rainfall.
- **Inject 5.6:** Directive to deploy skilled and trained human resources, security forces, Red Cross volunteers, and municipal police for constructing temporary shelters to ensure the safety of displaced individuals across communities.
- **Inject 5.7:** Correspondence to FNCCI, Red Cross and other concerned bodies for the preparation of food, safe drinking water and dignity kit for the people who have been evacuated to a safe place.
- Inject 5.8: Water warning level (10.8) has exceeded in upper coastal area of Chiaspani station and still increasing. Community people informed the LEOC of flood entry in Nuklipur and Shahipur of Tikapur Municipality Ward No. 5, Kunti tole, Katase and Dharmaphanta of Janaki Ward No. 9, Tihuni, Murgahuwa and Chanaura of Rajapur Municipality Ward no. 1 and Rajapur, Vanghusra and Loharpur of Geruwa village ward no. 2.
- **Inject 5.9:** A rescue team with a rubber boat is requested to Tikapur Municipality for immediate rescue of 32 people who are waiting on the roof of houses in Chanaura community, the settlements near the school on the road leading to North Daulatpur of Rajapur Municipality are completely inundated.
- **Inject 5.10:** Disturbances reported in emergency shelters. Flood-affected people facing drinking water problems and excessive heat inside shelters, leading some to stay in the open sky. Concerns raised regarding the risk of dengue due to mosquitoes in open spaces.
- **Inject 5.11:** Information about the current situation of weather and rainfall.

Inject 6: Information has been received that the DDMC and PEOC have requested information about the initial situation of the flood.

- **Inject 6.1:** District Emergency Operation Center requested Local Emergency Operation Center to send the IRA report as soon as possible.
- **Inject 6.2:** The local community has raised a concern about the uneven distribution of relief, noting that all relief are being distributed in same location.
- **Inject 6.3:** People of Rajapur, Geruwa, Tikapur and Janaki, who sought refuge in elevated places and roads, have begun returning to their homes as floodwaters recede.

Annex 2: Day-wise activities of each municipality

Janaki Rural Municipality	Rajapur Municipality	Geruwa Rural Municipality	Tikapur Municipality
Day 7 to 4			
• Informed municipal chairman and LDMC about forecast. • Displayed forecast on notice board. • Held joint meeting with LDMC and sectorial committee for preparation. • Sent bulk SMS to stakeholders in EWCC about weather forecast. • Shared forecast information on Facebook page. • Coordinated with security forces for readiness. • Visited and mapped LSAR materials with LDMC, Security forces, and NRCS. • Conducted drainage cleaning in high-risk communities.	• Informed municipal chairman and LDMC of forecast. • Displayed forecast on notice board. • Conducted LDMC meeting. • Directed wards to be on standby. • Instructed LEOC to operate 24/7. • Visited and mapped LSAR materials with LDMC, Security forces, and NRCS. • Informed LDMC, NRCS, and security forces about existing trained human resources.	• Informed municipal chairman and LDMC of forecast. • Displayed forecast on notice board. • Directed wards to be on standby. • Ensured LSAR materials were prepared. • Conducted drainage cleaning in high-risk community. • Held an emergency LDMC meeting. • Corresponded with wards for readiness.	• Informed municipal chairman and LDMC of forecast. • Displayed forecast on notice board. • Prepared for LDMC meeting. • Directed wards to be on standby. • Instructed LEOC to operate 24/7. • Informed LDMC, NRCS, and security forces about trained human resources. • Ensured LSAR materials were prepared • Conducted drainage cleaning in high-risk community. • Held emergency LDMC meeting. • Sent mass SMS regarding forecast information. • Directed all sectorial committees to be ready with necessary preparations.
Day 3			
• Regularly monitored forecast. • Directed trained human resources, sectorial committee, NRCS, and stakeholders to be on standby. • Advised farmers against harvesting crops and to secure harvested crops. • Confirmed the cleaning of drainage in high-risk communities. • Communicated forecast through Badhghar, radio message, siren, miking and home visit to the community. • Prepare with the risk household data to inform high-risk and vulnerable families through IVR calls, who were selected for cash in anticipation following the decision of LDMC.	• Regularly monitored forecast. • Conducted emergency LDMC meeting. • Coordinated with stakeholder agencies. • Communicated forecast to the community via SMS. • Conducted drainage cleaning. • Monitored risk and vulnerable communities. • Prepared for evacuation. • Updated trained human roaster and requested readiness. • Advised farmers against harvesting crops and to secure harvested crops. • Maintained regular communication with Chisapani Hydrometry. • Directed all sectorial committees to be ready with necessary preparations.	• Regularly monitored forecast. • Conducted an emergency LDMC meeting. • Coordinated with stakeholder agencies. • Communicated forecast to the community via SMS. • Conducted drainage cleaning. • Monitored at-risk and vulnerable communities. • Prepared for evacuation of at-risk communities. • Updated the trained human roster and requested readiness. • Coordinated regularly with Chisapani Hydrometry. • Advised farmers against harvesting crops and to secure harvested crops.	• Regularly monitored forecast. • Conducted an emergency LDMC meeting. • Coordinated with stakeholder agencies. • Communicated forecast to the community via SMS. • Advised farmers against harvesting crops and to secure harvested crops. • Conducted drainage cleaning. • Monitored at-risk and vulnerable communities. • Prepared for the evacuation of at-risk communities. • Corresponded with NRCS to distribute cash in anticipation as per agreement. • Prepared a list of beneficiaries for cash in Anticipation. • Mobilized NRCS volunteers for early warning communication.

Janaki Rural Municipality	Rajapur Municipality	Geruwa Rural Municipality	Tikapur Municipality
• Mobilized NRCS volunteers for early warning communication. • Collaboration with NRCS to plan and execute the cash anticipation distribution program for vulnerable households in high-risk communities. Ensure the active functioning of the Grievance Handling Mechanism. • Instructed LEOC to regularly update forecast information and risk assessment data, and maintain consistent coordination with stakeholder agencies. Additionally, assigned LEOC the responsibility of regular communication with Chisapani Hydrometry and Patharaiya River Gauge Station to receive and share vital information with the community. • Corresponded with NRCS to distribute cash in anticipation as per agreement. • Prepared a list of beneficiaries for cash in anticipation. • Maintained regular communication with Chisapani Hydrometry.		• Maintained regular coordination with security forces. • Early warning messaging through sirens. • Directed all sectorial committees to be ready with necessary preparations.	• Updated the trained human roster and requested readiness. • Maintained regular coordination with Chisapani Hydrometry. • Coordinated regularly with security forces. • Forecast communicated through the siren. • Directed all sectorial committees to be ready with necessary preparations.
Day 2			
• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry. • Communicated forecast to the community via SMS. • Drainage cleaning and allotment of sand bags. • Monitored at-risk and vulnerable communities. • Prepared for evacuation. • Distributed Cash in Anticipation to social security beneficiaries, Persons with	• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry. • Communicated forecast to the community via SMS. • Drainage cleaning and allotment of sand bags. • Monitored at-risk and vulnerable communities. • Prepared for evacuation. • Regularly monitored by humanitarian agencies.	• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry. • Communicated forecast to the community via SMS. • Drainage cleaning and allotment of sand bags. • Monitored at-risk and vulnerable communities. • Prepared for evacuation. • Regularly monitored by humanitarian agencies.	• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry. • Communicated forecast to the community via SMS. • Drainage cleaning and allotment of sand bags. • Made the decision to hire the additional JCV machine if necessary. • Constructed a temporary dam with support from Ranijamara irrigation scheme, Municipal police, municipality, and the Badghar. • Monitored at-risk and vulnerable communities.

Janaki Rural Municipality	Rajapur Municipality	Geruwa Rural Municipality	Tikapur Municipality
Disabilities, pregnant women, and mothers with children up to 33 months using the social security allowance distribution system. • Cash in Anticipation disbursement using Block chain technology with the support of Rumsan. • Early evacuation to transitional shelter with support from municipal police, NRCS volunteers, and community members. • Corresponded to close intake of Ranijharuwa. • Addressed complaints received regarding Cash in Anticipation distribution. • Regularly monitored by humanitarian agencies. • Coordinated with other municipalities for resource sharing. • Informed DDMC about Cash in Anticipation disbursement.	• Coordinated with other municipalities for resource sharing.	• Coordinated with other municipalities for resource sharing.	• Prepared for evacuation. • Regularly monitored by humanitarian agencies. • Coordinated with other municipalities for resource sharing. • Distributed Cash in Anticipation to social security beneficiaries, Persons with Disabilities, pregnant women, and mothers with children up to 33 months using the social security allowance distribution through Connect IPS. • Early evacuation to transitional shelter with support from municipal police, NRCS volunteers, and community members. • Supported and facilitated Cash in Anticipation beneficiaries to withdraw money from the bank. • Addressed complaints received regarding Cash in Anticipation distribution. • Informed DDMC about Cash in Anticipation disbursement.
Day 1			
• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry. • Communicated forecast to the community via SMS. • Drainage cleaning and allotment of sand bags. • Monitored high-risk communities in all wards and evacuated vulnerable populations. • Direction to deploy trained human resources. • Constructed temporary shelters with the support of municipal police, NRCS volunteers, and the community.	• Regularly monitored and informed WDMC and CDMC of the forecast. • Coordinated with stakeholders for possible support. • Maintained regular communication with Chisapani Hydrometry gauge reader. • Sent SMS communication to Cluster head and stakeholders. • Mayor directed all stakeholders to stay in ready stage. • Corresponded with Tikapur Municipality for motorboat support. • Rescued and shifted the flood-affected people to safe place mobilizing the security force and local task force.	• Regularly monitored forecast. • Conducted an emergency LDMC meeting and coordinated with stakeholders. • Maintained regular communication with Chisapani Hydrometry gauge reader. • Communicated forecast to the community via SMS. • Deployed trained human resources for evacuation and response. • Mobilized municipal police for temporary shelter construction for early evacuation. • Regularly monitored by humanitarian agencies. • Coordinated with NRCS, deployed volunteers and security forces for IRA. • Informed the situation to DDMC and NRCS.	• Maintained regular communication with Chisapani Hydrometry gauge reader. • Sent regular SMS communication to the community. • Mobilized WDMC and Badhghar for community communication. • Coordinated with security forces. • Used Siren for community alerts. • Mobilized municipal police for temporary shelter construction. • Evacuated high-risk communities with go bags, stored crops, and livestock. • Confirmed evacuation of high-risk communities. • Prepared for First Aid.

Janaki Rural Municipality	Rajapur Municipality	Geruwa Rural Municipality	Tikapur Municipality
• Addressed complaints regarding Cash in Anticipation distribution. • Regularly monitored by humanitarian agencies. • Sent trained human resources with a rubber boat to support Rajapur Municipality. • Informed the situation to DDMC and NRCS.	• Coordinated with NRCS, FNCCI, and stakeholders for RTE food and NFRI set support. • Initiated a mobile health camp to control Dengue. • Received information on people in temporary shelters. • Coordinated with NRCS, deploying volunteers for Initial Rapid Assessment (IRA). • Sent IRA report to DDMC. • Requested support from Tikapur and Janaki for human resources and motorboat rescue. • Rescued 32 people using a motorboat. • Corresponded with DDMC for additional support.		• Monitored affected areas with the Mayor and Ward Chairperson. • Conducted LDMC meeting. • Activated the Feedback mechanism. • Distributed mosquito nets to control Dengue. • Mobilized NRCS volunteers and security forces for IRA.