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**OXFAM**  
India

## **VOLUNTEER NETWORK MANAGEMENT SYSTEM STRENGTHENING COMMUNITY-BASED EARLY-WARNING SYSTEM**



This document is developed to share the learnings from the first phase of a pilot project on community-based early-warning systems implemented in three flood-prone river basins in Odisha. This initiative attempts to bring technical innovation that will aid collective and coordinated action from local communities, civic groups, and networks of volunteers in early-warning dissemination and response.

## INTRODUCTION

In recent years, India has witnessed many catastrophic disasters. While some came with predictable traits, other events caught people completely off-guard. Floods in Uttarakhand, Kashmir and Chennai were rare events and had no similar precedent in the regions' recent histories. States like Assam, Bihar and Odisha, however, face these calamities so frequently that by the time they've recovered from the impacts of one disaster, the threat of another looms.

In 2017, the deluge was widespread – as many as 30 million people in 05 Indian states were affected. Responding to the increased frequency of all these disasters is beyond the realistic collective capabilities of these humanitarian agencies. An effective early-warning system can prevent loss of life, and can greatly mitigate the economic and material impact of disasters. This ensures that the aid-dependency of the affected community is also reduced. The devastating 2004 Indian Ocean Tsunami claimed 200,000 lives, and signalled of an immediate need for a coordinated

early-warning system in the Asia-Pacific region. As a result, the Intergovernmental Oceanographic Commission adopted a resolution to establish a global early-warning system framework for ocean-related hazards. In the subsequent year, the Hyogo Framework for Action (HFA) was adopted, which included risk assessment and early-warning as one of its five tenets.

Strategically driven by HFA framework and after the recent Sendai framework – Oxfam India's DRR programme focused on hydro-meteorological disasters. It has invested in building resilience in the most notorious flood-prone river basins in the country, including Brahmaputra in Assam, Kosi in Bihar, and the Subarnarekha, Brahmani-Baitarni and Mahanadi river basins in Odisha. It takes a two-pronged approach: preparing communities to be resilient to disasters, and enabling local actors to effectively coordinate and respond to humanitarian emergencies. Strengthening community-based early-warning systems has remained one of the key focus areas for Oxfam to minimize human casualties in disasters.

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## OXFAM INDIA'S INTEGRATED PROGRAMME DESIGNS ON DRR INCLUDES THE FOLLOWING KEY AREAS OF INTERVENTION:

- Empowering community disaster-preparedness through capacity- and institution-building.
- Ensuring safe water availability, sanitation facilities, and improved hygiene during floods.
- Increasing food security and reducing loss of livelihoods during floods.
- Investing in advocacy to build collaborative linkages between key stakeholders (community, government, partner NGOs) to ensure programme interventions are relevant, representative, and sustainable.

This document is developed to share the learnings from the first phase of a pilot project on community-based early-warning system implemented in three flood-prone river basins, including Subarnarekha in Balasore, Brahmani – Baitarni in Jajpur, and the tail of the Mahanadi in Puri District.

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## RATIONALE

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The occurrence of floods is a regular phenomenon in Odisha. With a flood prone area of 33,400 km, it ranks as the fifth most flood-prone Indian state after Uttar Pradesh, Bihar, Assam, and West Bengal. In terms of the population affected and the duration of displacement, floods create a bigger humanitarian crisis in the coastal districts of the state. The major rivers like Mahanadi and Subarnarekha – along with their numerous tributaries – flowing through the state have the potential to cause major floods. The problem is exacerbated when these floods coincide with the high tide. The river silt deposited in the delta region raises the bed levels, and causes them to overflow their banks or break through new channels – this leads to heavy damages. The entire coastal belt is prone to storm surges, usually accompanied by heavy rainfall, and thus the region is vulnerable to both storm surges and river flooding. In spite of a fairly accurate early-warning and risk management structure, the casualties and loss of assets has remained consistently high. Only a few exceptions, one of them being the cyclone Phailin, come to mind. Massive casualties are consistently reported countrywide despite there being claim of an exceptionally accurate forecasting system. This has been particularly significant in cases of

flooding. Between 1986 and 2008, India relayed 145,349 flood forecasts with 95.35 percent of accuracy. During the same period, at least 34,674 human casualties were reported due to floods. Similar trends were observed in states like Odisha where in 2008, 223 flood forecasts were issued with 90.57 percent of accuracy. The same year, 110 human lives were lost in the state due to floods<sup>1</sup>. More recently, in 2017, widespread floods in different states have cumulatively claimed 943 lives. These high casualty counts are indicative of an ineffective end-to-end early-warning system. The evolution of systems for information dissemination to the local communities has not kept pace with the development of forecast technologies. While sophisticated systems for detection and monitoring of hazards have been installed, the ‘last mile’ connectivity to the community at risk still depends upon manual systems. On the other hand, at the community level, factors like exposure to risks, the community’s risk perception, time of warning dissemination, the community’s trust in the warning messages, and an individual’s last-minute attempt at asset protection together may also result in the procrastination of early and positive action. Reluctance in evacuation may also be a function of policy gaps, which oftentimes exclude vulnerable groups from relief entitlements. Thus, various factors may delay the timely positive action, and increase the possibility of harm or loss.



## STRENGTHENING COMMUNITY-BASED EARLY-WARNING SYSTEMS

The success of any end-to-end early-warning system is ultimately determined only at the last mile. If it is unable to drive positive community action, the system is not efficient enough. The human component – and not the technology – should therefore be the essential foundation of any such system. Oxfam India, along with its partners, Unnayan, Solar, and Pallishree, piloted a project to strengthen community-based early-warning systems in selected regions in the flood-prone basins of Subrnarekha, Brahmani – Baitarni, and the Mahanadi rivers. This initiative focused mainly on the communication, dissemination, and the response capability in the last mile using the four-key element of people-centered early-warning systems. The aim was to bring technical innovation to aid collective and coordinated action from local communities, civic groups, and networks of volunteers.

### RISK KNOWLEDGE

#### SYSTEMATICALLY COLLECT DATA AND UNDERTAKE RISK ASSESSMENTS

- ◆ Are the hazards and the vulnerabilities well known  
What are the patterns and trends in these factors?
- ◆ Are risk maps and data widely available?

### MONITORING & WARNING SERVICE

#### DEVELOP HAZARD MONITORING AND EARLY WARNING SERVICES

- ◆ Are right parameters Being monitored?
- ◆ Is there a sound scientific Basis for making forecasts?
- ◆ Can accurate and timely Warnings be generated?

### DISSEMINATION & COMMUNICATION

#### COMMUNICATE RISK INFORMATION AND EARLY WARNINGS

- ◆ Do warnings reach all of those at risk?
- ◆ Are the risks and warnings information clear and usable?

### RESPONSE CAPABILITY

#### BUILD NATIONAL AND COMMUNITY RESPONSE CAPABILITIES

- ◆ Are response plans up To date and tested?
- ◆ Are local capacities and Knowledge made use of?
- ◆ Are people prepared and Ready to react to warnings?

## FOUR ELEMENTS OF PEOPLE-CENTERED EARLY WARNINGS SYSTEMS

Source: UN/ISIDRO Platform for the Promotion of Early Warning

## THE KEY OBJECTIVES OF THE PROJECT ARE AS FOLLOWS:

**GOAL -** Zero casualty and reduced loss of assets in climate change-induced disasters

### OUTCOME –

- Lead time is improved for evacuation in the selected flood-prone geography in Odisha.
  - Viable dissemination technologies are adopted by the Government to complement the forecasting system, for an efficient end-to-end warning system.
  - Coordination mechanism between the local government, the NGO network, and the Village Volunteer Base is mandated – this is aided by technological innovations
  - Volunteer Network influences the population at risk to take early lifesaving actions in emergencies.
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### OUTPUTS –

- Low-cost technologies are developed and field-tested for real-time warning dissemination to the population at risk
- Technology and learnings are shared with relevant stakeholders for replication and upscaling
- Development and field-testing of technologies designed for effective coordination between last-mile institutions and the local governments
- Training and strengthening of the NGO networks and village-based volunteers to support the government in early-warning dissemination and evacuation support.

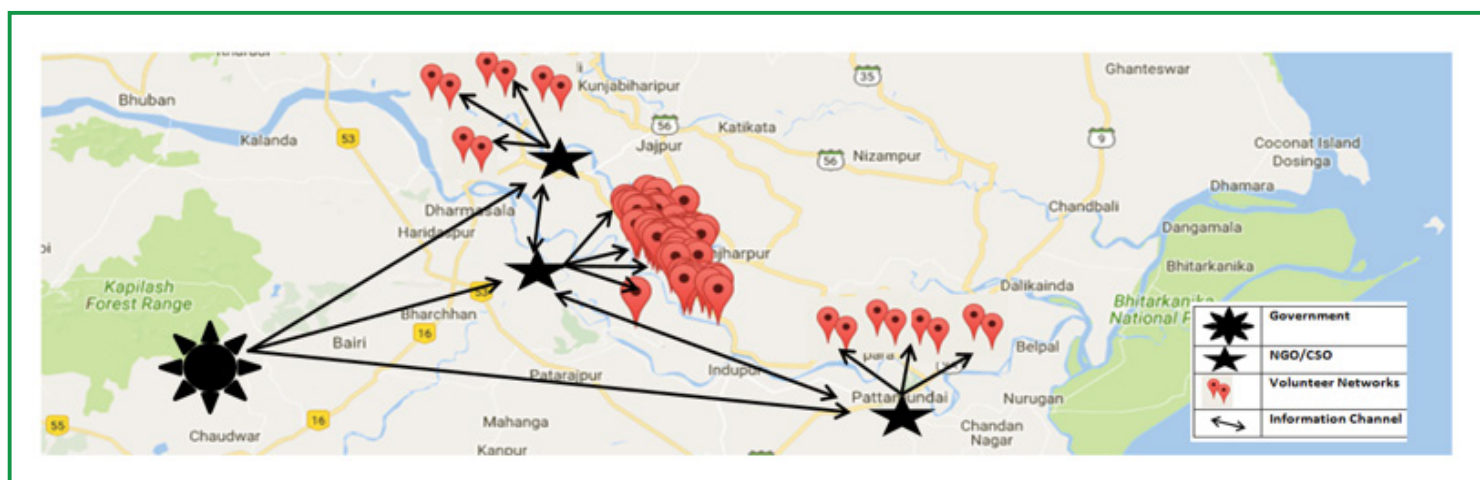
# THEORY OF CHANGE

GOAL	ZERO CASUALTIES AND REDUCED LOSS OF ASSETS IN CLIMATE CHANGE-INDUCED DISASTERS			
PILLARS	Pillar 1 – Improving technologies for real-time communication and dissemination of last-mile warnings		Pillar 2 – Improving coordinated response capabilities in the last mile in the Early Warning phase	
OUTCOMES	Lead time is improved for evacuation in the selected flood-prone geography in Odis-ha.	Viable dissemination technologies are adopted by the Government to complement the forecasting system, for an efficient end-to-end warning system.	Coordination mechanism between the local government, the GONG network, and the Village Volunteer Base is mandated – this is aided by technological innovations	Volunteer Network influences at-risk population to take early lifesaving actions in emergencies.
OUTPUTS	Low-cost technologies are developed and field-tested for real-time warning dissemination to the population at risk	Technology and learnings are shared with relevant stakeholders for replication and upscaling	Development and field-testing of technologies designed for effective coordination between last-mile institutions and the local governments	Training and strengthening of the GONG networks and village-based volunteers to support the government in early -warning dissemination and evacuation support.
DRIVERS OF CHANGE	Scientists and humanitarian practitioners develop and field-test low-cost last-mile dissemination technologies, which are then adopted by the local governments in flood-prone areas		Egos and Obos along with their respective volunteer bases in the selected river basin in Odis-ha collaborate to form a network with the aim to support local governments in early-warning dissemination and early evacuation of vulnerable groups. Relevant technologies will strengthen traditional structures to aid real-time flow of critical information.	
PROGRAMMER STRATEGIES	<ul style="list-style-type: none"><li>Investing for advances in last-mile warning communication and dissemination technologies to ensure that timely warning reaches the entire population at risk including those in remote locations.</li><li>Structures for last-mile dissemination complement its forecasting system to establish an “End-to-End Early Warning System.”</li></ul>		<ul style="list-style-type: none"><li>Investing in the establishment of people-centered early-warning structures with active participation of local communities, civic groups, and traditional structures.</li><li>All people at risk, particularly those from socio-economic disadvantaged groups, have equal access to information in disaster situations, and people take informed and timely actions to minimize the loss of life and property</li></ul>	
BARRIERS	<ul style="list-style-type: none"><li>From the District Control Room to the community, warning communication in the last mile is dependent largely on the manual system. This results in late dissemination, exclusion, and limited outreach.</li><li>Dissemination at odd hours through manual systems is difficult.</li><li>Generic warning messages without specific details on settlements, population at risk, lead time etc., Are not useful in taking informed actions.</li></ul>		<ul style="list-style-type: none"><li>Inadequate structures to ensure collective and coordinated action from local communities, civic groups, and networks of volunteers in early-warning dissemination and response.</li><li>Lack of trust in warning messages</li><li>Absence of risk perceptions and priority in safeguarding assets leads to procrastination of evacuation</li></ul>	
PROBLEM	Floods in India, have consistently claimed many human lives inspire of an exceptionally accurate early-warning system. Between 1986 and 2008, India relayed 145,349 flood forecasts with 95.35 percent accuracy. During the same period, at least 34,674 human casualties were reported due to		floods. Poor structures for last-mile warning dissemination, absence of risk perception, lack of trust in the warning messages, and vaporisation of risks (evacuation vs protection of assets) are some of the critical factors that result in late/negative community actions.	

## THE VOLUNTEER NETWORK MANAGEMENT SYSTEM

The project rests on two pillars. The first emphasizes on improving coordinated response capacities in the last mile, while the second focuses on improving real-time communication and dissemination of warnings in this last mile. Both these pillars are together labeled in the project as the 'Volunteer Network Management System(VNMS).' Egos and Obos work with their Respective volunteer bases in the

selected river basin in Odisha. They then collaborate to form a network that supports the local government in early-warning dissemination, and also aids vulnerable groups in early evacuation. Relevant technologies strengthen traditional structures to aid real-time flow of critical information. The figure below illustrates the VENOMS operating framework.



### VOLUNTEER NETWORK MANAGEMENT SYSTEM:

The efficiency of an early-warning system can also be attributed to how well the social factors are integrated in the system. It must, crucially, provoke a positive community action: not all timely warnings instigate early actions. Factors such as lack of risk perception, lack of trust in the warning messages, concerns related to protection of livelihood and household assets, or issues related to women and child protection during evacuation may play a critical role. They adversely determine the collective behavior of a community during disasters. Our experiences from field have shown that a well-prepared community with assistance from trained village-based

committee members can avert and absorb the shocks of disasters. Village-based institutions developed through intensive community processes act as vanguards in the management and reduction of disaster risk. However, it is a challenge to avoid attrition of many volunteers, as dynamic factors such as occupational and seasonal migration, marriage, and declining interests will always be the ground realities in the last mile. The local NGOs, CBOs, and SHGs are more sustainable structures, whose capacities can be enhanced to manage the volunteer base in the respective regions for effective risk management. Technical innovations that can potentially reduce operational costs in volunteer base management, and are also directly

Beneficial to them will also keep them engaged and associated. The VENOMS is a system developed to improve access to critical information for the network of local Egos and CBOs, and their trained volunteer base may refer to it on issues related to development and disasters. Information dissemination in normal time may include information related to Government subsidies, market rates, public health promotion messages, etc. Messages are disseminated in

vernacular languages through digital displays and SMS. The functionality of the system in normal times keeps the volunteer base interested and engaged so that the system sustains and functions during disasters as well. During floods, the VNMS is tailored to disseminate warning messages to volunteers. These volunteers are trained to persuade and support vulnerable groups to take positive and timely community actions.

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### **DETAILED ACTIVITIES INCLUDE THE FOLLOWING:**

- Volunteer networks are established and trained in the target river basin, prioritising the most vulnerable and inaccessible locations first. This initiative brings all the local actors in a selected flood-prone geography on a common platform to support and contribute during emergencies.

Oxfam's learnings from its DRR programmes have shown that village-based institutions created for risk management are very dynamic and often do not sustain beyond a period once the support from external agencies is withdrawn – unless these committees are well integrated in the Government structures for disaster management. Even if this is somehow managed, other challenges such as seasonal and occupational migration, migration of women members for marriage, loss of interest, etc. result in the weakening of these structures. These 'village-based institutions' need to be revisited and strengthened periodically.

Many grassroots NGOs have also shared that in all practical terms, the 'principle of mutual benefits' keeps the relationship between NGOs and their volunteers alive. The benefit could be beyond monetary terms and may include a sense of satisfaction and pride, or an opportunity to make an impact. But it is acknowledged that such committed volunteers are few in number, and are difficult to maintain when the operational area is quite large. Oxfam took the 'scale-up and scale-down approach' to address this in its DRR programmes. When a level of resilience is achieved in a target village, work is downscaled and is then shifted to a new geography. However, complete operations are not closed, as through its partners it commits to provide handholding support in action areas for residual risks reduction. It must be noted that this is also a very tedious and resource-intensive process, and after a period, a call on complete exit needs to be taken. VNMS organises sustainable grassroots organisations and dynamic village-based institutions on a common platform, and the technology aids the flow of critical information on quotidian development benefits, thus sustaining it for longer.



- The Hazard, Risk and Vulnerability Assessment (HRVA) maps are developed for the selected area in the flood-prone river basin. The HRVA maps are then digitised on simpler platforms such as Google Maps. Local communities living in disaster-prone geographies thus have substantial knowledge of risks, and also develop significant coping capacities which can be seen in the traditional and indigenous practices. This can be seen in their housing structures, crop patterns, and even food habits. Of course, change in weather patterns, intensity of disasters, and deviation from the old and traditional ways of life all have an adverse impact, and render communities even more vulnerable. The communities, however, know the risks well. A little bit of structured consultations, with different villagers young and old, has helped in documenting learnings from previous disasters. The process included hazard, risks, and vulnerability mapping across the river basins under supervision of competent experts.

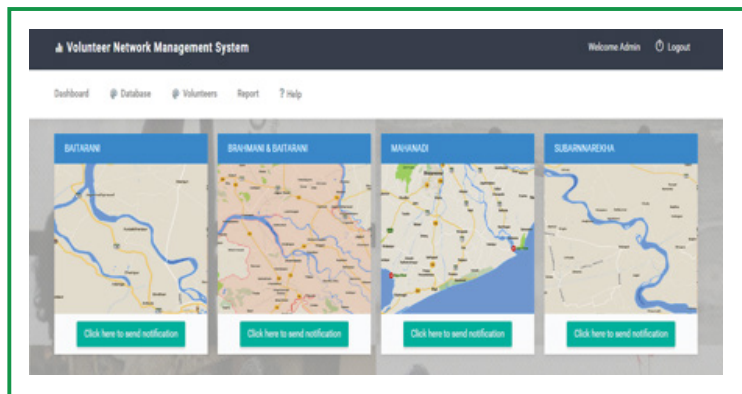
As a result, the community-led processes help draft an HRVA map that carries specifics of the disaster. These include the danger during floods, the most vulnerable hamlets, the inundation and lead time corresponding to the water levels in the river basin. The maps help in identifying the most vulnerable and inaccessible regions, and volunteer networks are then established across all such vulnerable locations. These volunteers are subsequently trained on developing village-based risk-management plans. The NGO networks liaison with local line departments and the Central Water Commission's flood monitoring centres to collect flood data. During flood alerts, the nodal agency monitors water levels and engages with Government line departments to collect warning messages.



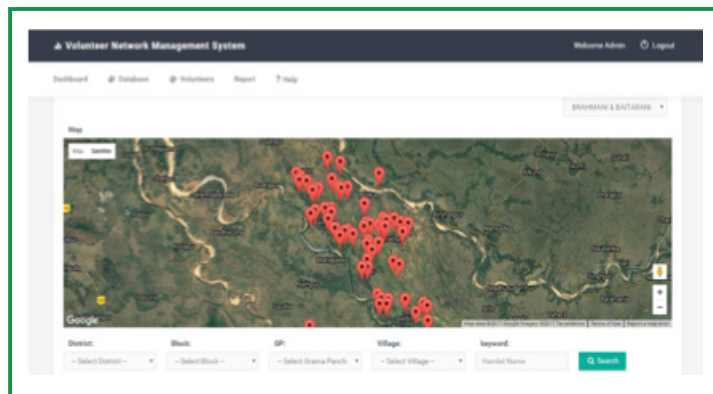
- Software tools will be developed to maintain a volunteer database and reach them through GSM-based audio and text-based media for information. VNMS Decision Support System is a software that helps manage this large volunteer database, and can instantly send real-time messages in vernacular to a wide geography.

# USER INTERFACE - VOLUNTEER NETWORK MANAGEMENT SYSTEM

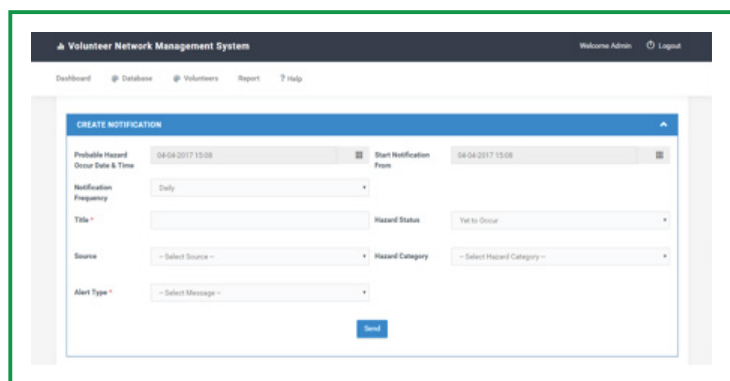
## STEP 1 – SELECT RIVER BASIN



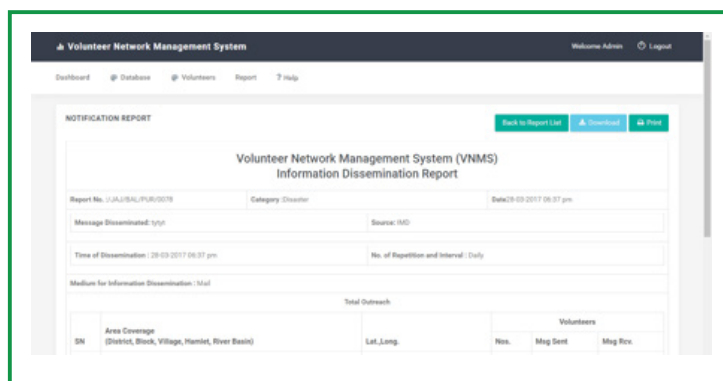
## STEP 2 – DRAG & SELECT REGION AND VOLUNTEERS



## STEP 3 – CREATE & SEND NOTIFICATION



## STEP 4 – GENERATE REPORT INCLUDING REAL-TIME BACKWARD REPORTING

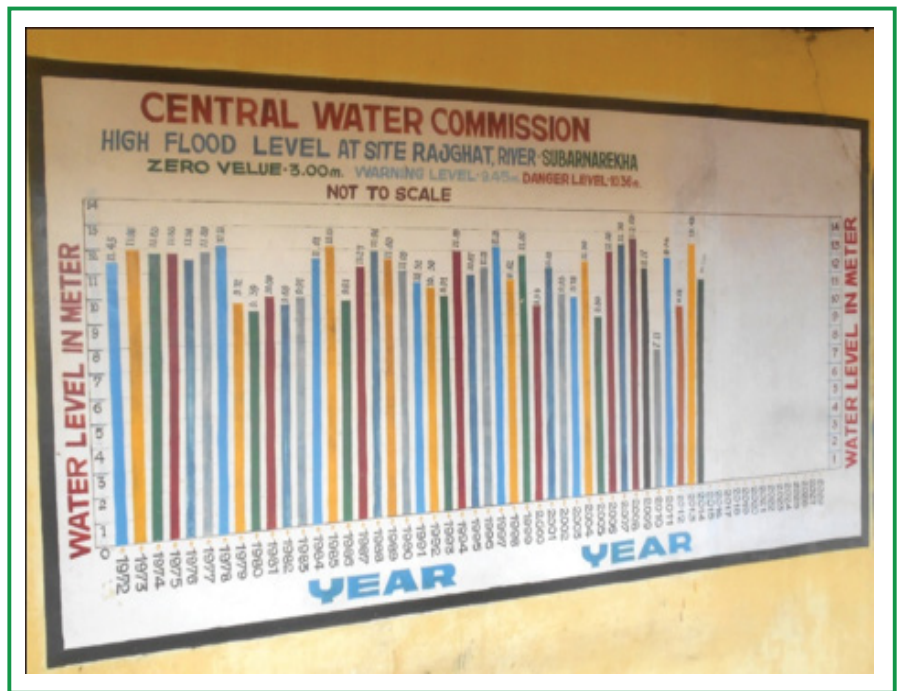


- Digital display boards are installed in the villages considered most vulnerable. While mobile phones remain the most popular medium for sending messages, a few digital display boards have also been installed in the most inaccessible villages. The system is flexible enough to adopt to multiple medium for information dissemination including SMS, audio, digital displays, and siren alerts. The pilot initiative has tested the use of SMS and digital displays only.
- Centralized control rooms are established. The decision support system is managed by a nodal agency which is located closer to the field, and yet at a safe place to manage operations. While the software can be operated from any place with decent Internet connectivity, the major role of the nodal agency is to be kept updated on the flood scenario through the Government's emergency offices. The agency helps these offices in quick dissemination of warning messages with the help of large village-based volunteer networks. The VENOMS enables real-time dissemination to trained volunteers who then play critical role in influencing residents in timely and positive community actions. The HARV mapping, coupled with a thorough understanding of the local risks, also puts the nodal agency better placed in prioritizing areas and groups requiring immediate support.

1

14/10/13	7 AM -	11.650	9/10/2014
	8 AM -	11.750	12-120 19/10
	9 AM -	11.850	
	10 AM -	11.920	
	11 AM -	12.000	
	12 PM -	12.070	
	1 PM -	12.140	
	2 PM -	12.130	
	3 PM -	12.160	
	4 PM -	12.220	
	5 PM -	12.260	
	6 PM -	12.290	
	7 PM -	12.310	
	8 PM -	12.330	
	9 PM -	12.350	
	10 PM -	12.370	
	11 PM -	12.390	
	12 AM -	12.410	
15/10/13	1 AM -	12.430	
	2 AM -	12.450	
	3 AM -	12.470	
	4 AM -	12.490	
	5 AM -	12.510	
	6 AM -	12.530	
	7 AM -	12.550	
	8 AM -	12.570	
	9 AM -	12.590	
	10 AM -	13.010	
	11 AM -	13.030	
	12 PM -	13.050	
	1 PM -	13.070	
	2 PM -	13.090	
	3 PM -	13.110	
	4 PM -	13.130	
	5 PM -	13.150	
	6 PM -	13.170	
	7 PM -	13.190	
	8 PM -	13.210	
16/10/13	9 AM -	13.230	
	10 AM -	13.250	

2



- The system is also tailored to provide critical information targeted towards development of the community. This is to ensure its sustainability during non-disaster periods, where the system is being used to provide quotidian development benefits to the community. VNMS is used in providing critical information related to schemes and subsidies and has ensured better penetration of development schemes in some of the most neglected and inaccessible hamlets. It has been utilised to create awareness on free medicine schemes, the Prime Minister's crop insurance schemes, the Indira Awas Yojna, MGNREGS, and other flagship programmes. The tool can also be effective in local campaigning on issues like public health in emergencies, and can be useful in creating awareness on rights and entitlements. It may also be used for providing critical information on aid, relief camps, and medical and health camps in emergencies. The system is designed to be customised and used for any specific needs and requirements. After all, an effective warning system must work at all times.

- 1 Excerpt from the Flood monitoring register maintained by Unnayan
- 2 Nodal Agencies liaison with flood monitoring centres of CWC and District emergency offices for flood updates



## PROJECT ACTIVITIES ARE IMPLEMENTED IN FOUR STAGES:

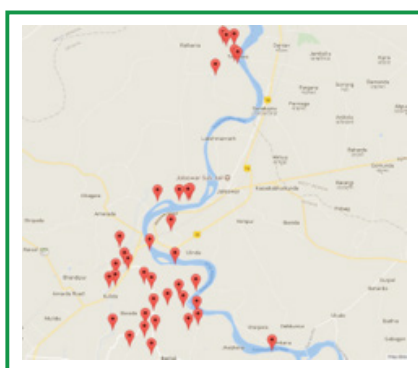
- Developing foundation of the system through strengthening village-level institutions
  - Research and Development: Collaborating with technical agencies to develop the technology to aid real-time information and volunteer management
  - Field Testing: Collaboration with a network of local Egos and Obos for piloting the VENOMS in the selected flood-prone river basin in Odisha.
  - Sharing, integration, replication and scale-up: The scope of VENOMS is gradually expanded by inducting new agencies and volunteers for a comprehensive outreach in all vulnerable locations, from the upstream to downstream river basins. There's also an aim to integrate the systems within government-operated dissemination structures for a more sustainable and widespread impact. The project is currently focusing on this phase.
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## OUTREACH

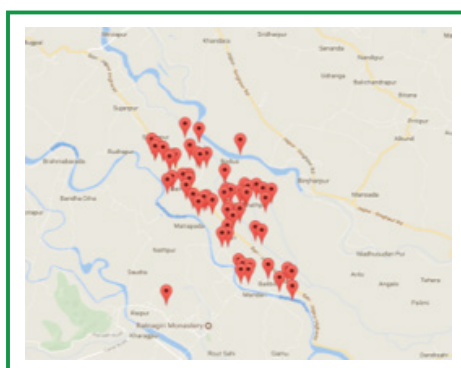
The project is currently being implemented in Odisha in the flood-prone Subarnarekha, Mahanadi, and Brahmani – Baitarni river basins. The current network brings together 03 NGOs and their network of 2112 last-mile volunteers with a direct outreach of nearly 173,399 people from 171 of the most flood-prone villages in Puri, Jajpur, and Balasore districts in Odisha. After the completion of the first phase of the project, initiatives have been taken to induct new actors into the VNMS system. In the second phase, 15 new NGOs are being inducted which will expand the outreach of the system quite significantly in all the three river basins.

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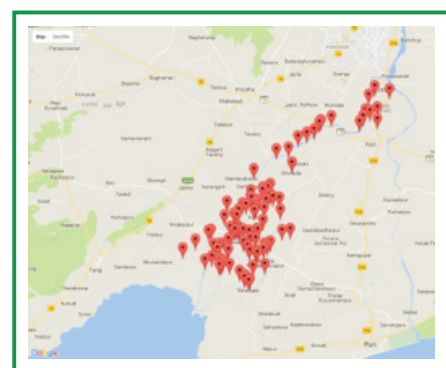
### VNMS OUTREACH



Subarnarekha and  
Gudikhal River in Balasore  
500 Volunteers  
33 villages & 27000 people  
from 6131 households



Brahmani – Baitarni &  
Nuanadi in Jajpur  
792 Volunteers  
35 villages & 60030 people  
from 12200 households



Mahanadi (Daya, Luna &  
Makara) in Puri  
820 Volunteers  
103 villages & 86000 people  
from 16000 families



## CHALLENGES:

The system, although very simple to operate, requires basic trainings and refreshers. As the system evolved to its current structure, it faced some technical challenges, such as integrating the vernacular fonts in the software and SMS fonts not being supported in some of the old models of the mobile phones. In some cases, it was even observed that a few village volunteers used their own discretion on prioritizing which information to further disseminate to villagers. Certain information related to public health and to entitlements on schemes were deemed unimportant by

the volunteers, and thus did not reach all the villagers.

Although nominal, there is a recurring cost involved in maintaining the system. This includes SMS charges, internet connections, server charges, annual maintenance costs, etc. Nodal agencies and network NGOs need a sustainable plan to meet these recurrent expenses on a longer term. Integration with the Government Decision support systems can be a more sustainable solution to address some of these issues.

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## KEY IMPACT

The system has a widespread impact on expanding the outreach of local actors. The technology has aided in reaching out to large number of villages through village-based volunteers. The VNMS has also provided a platform for different local stakeholders to collaborate towards a of reducing casualties and suffering in emergencies.

The utility of the system in normal times keeps it relevant during emergencies as well. Providing day-to-day development assistance has resulted in improved penetration of development schemes in inaccessible and neglected hamlets, and has thus kept the volunteers more engaged and interested.

The ability to provide warnings with specific actionable areas has helped communities take timely actions, which has prevented disaster losses. Use of vernaculars and engagement of local actors in message dissemination has

helped the community demonstrate justifiable confidence in the messages.

The flexibility of the system for multi-purpose solutions, such as providing information on relief entitlements and subsidies, influencing behavioral changes, awareness on public health in emergencies, local campaigns etc. This helps make the system much more relevant in all contexts.

The Indian Meteorological Department (IMD) issued warnings of heavy rainfall due to low pressure in many districts of Odisha from 13th to 18th November 2017. The nodal agencies of Unnayan and Pallishree – in the Subarnarekha and Brahmani – Baitarni river basins – engaged with the Agriculture Department to collect advisories for prevention of crop losses in the impending event. Specific information was relayed on crop protection, including time of harvesting, shifting of harvested crops, and protection of crops that were not ready for harvest. When Kulamani Panda from Bhurunga received messages on his phone with clear instructions on crop protection, he was able to timely harvest his crop. He was one of the farmers who could save most of his cultivated crops in the November rainfall. Another farmer, Bharat Malik, from the same village, however, was not so lucky. His crop was not harvest-ready. He tried saline spray to delay sprouting but the extensive and prolonged waterlogging was too severe for the crop. He says, “I got a timely message and took steps to protect the crop. The rain and the waterlogging were too severe for the crop, and nothing much could have been done in that case. But the messages were useful and we could at least act in time.”



Bharatchandra Malik, Bhurunga Jajpur

Crop loss is heavy on the marginalised farmers. Institutional lending is inaccessible to the marginalised population, and large investments are often made after taking loans from informal groups and individuals, often at exorbitant rates. “Crop loss traps us in a debt cycle, or we may have to sell or mortgage our assets,” says Usha Rani Jena. She was inducted as one of the volunteers from Chautmari in Jajpur. When she received a message on her phone from Pallishree on the Prime Minister’s Crop Insurance Scheme, she was very much interested. She persuaded her husband Kalptaru Jena to enquire Pallishree about the scheme and how they sign up for it. After a bit of facilitation, the family availed the benefits. “This gave us peace of mind. Weather patterns are very abrupt now. There were a few warnings on extreme weathers but we knew that our crops are insured now,” says Kalptaru Jena



Kalptaru Jena from Chatumari ,Jajpur availed benefits from the PM Crop Insurance scheme

“Since our village is isolated and is not very well-connected to the Gram Panchayat, we have always lived in a constant fear that warning of the flood will not reach us in time. In fact, due to a lack of early warning messages, our village was badly affected during the October 2013 floods – more than 35 families were displaced. With the VNMS in place, we have received regular information about the rainfall conditions and flood water levels. This has given us peace of mind that our village will not be left out of receiving early-warning messages.” – Padmavati Behra, a member of the information

**PADMAVATI BEHRA**, a member of the information and communication committee in Chadnamkhana is one of the volunteers under VNMS responsible for dissemination of early-warning messages.



## WAY FORWARD

In an effective end-to-end early warning system, everyone has collective responsibility and a role to play. The pilot initiative was an attempt to organize local actors in the last mile to play a supportive role to the local Government, so that the at-risk population may receive timely warnings, even at the village level. In the initial phase, it was tested in a limited geographical outreach. Strategies were also adopted in the pilot phase to expand the scope of VNMS to a wider geography in the selected river basins. In this regard,

more than 30 Civil Society organisations came together. This lineup included grassroots NGOs with substantial reputations for their work in Disaster Management in the three river basins of Subarnarekha, Brahmani-Baitarni and the tail of the Mahanadi. They brought with them skilled manpower that would operate in various phases on disaster management. The alliance also discussed a roadmap to influence policies in DRR with a bottom-up approach, keeping last-mile issues affecting the most



marginalised groups at the centre of all plans. This paved the way for expanding the scope of VNMS by inducting 15 more NGOs in the second phase. It will now be possible to reach out to more vulnerable communities in a more comprehensive manner.

There is also further scope to strengthen the coordination between the governments and the local actors through this platform. Integrating the system into the government's decision support system will bring strength of local actors and the trained volunteers, and they'll be able to support key functions in the last mile in the early-warning phase. The pilot initiative also attempts to demonstrate a low-cost and multi-purpose warning system. Here, multi-purpose refers to its aim of providing

quotidian development benefits even during non-flood times. It therefore advocates the idea of adopting low-cost alternatives with multi-purpose benefits, and can be the best bet for a 100% outreach to all people at risk, while the government invests in high-end measures.

While availability of resources remains the biggest impediment in ensuring 100% outreach of real-time warnings, such low-cost solutions can still be useful alternatives in reaching out to all at-risk people. The approach also puts community and local actors at the center of the system, which is essential to ensure its effectiveness in the last mile.





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## **PARTNERS**

In Odisha, Oxfam India works with its partners Unnayan in Balasore, Pallishree in Jajpur, and Solar in Puri.

**SOCIETY FOR LEPROSY AMELIORATION AND REHABILITATION (SOLAR)** in Puri, started its work on leprosy eradication in 1985. Gradually, it shifted its focus on community-based disaster-preparedness and mitigation to meet this urgent need in the region, as not many agencies were working on the issue then. SOLAR formed Puri District Disaster Mitigation Forum (PDDM) in 1994 to advocate for disaster mitigation in Puri. Since the 1999 super cyclone, it has taken a lead in the emergency response, recovery, and rehabilitation programmes.

**UNNAYAN** works primarily with tribal communities in Balasore and Mayubhanj with a major focus on livelihood- and disaster- risk reduction. It is known for its capacities in disaster-preparedness, search-and-rescue, and relief management, and has managed major crisis response in the region since the 2007 floods. It has a strong presence in WASH during emergencies. It has advocated for inclusive relief entitlements and rights of shared croppers, has created successful models and approaches for mainstreaming DRR into local development plans.

**PALLISHREE** works on community resilience and reaches out to the most marginalised and vulnerable communities in the Brahmani – Baitarni river basins. It focuses mainly on WASH, sustainable livelihood, and school safety. Pallishree's trained local volunteer base has been spearheading timely flood response in the region since 2001.

## **TECHNICAL PARTNER**

Luminous Infoways is a National e-Governance Award Winner and a CMMI Level 3-certified company. It is engaged in IT consulting and services, including software development, content services, maintenance & support services for complex medium- and large-scale projects. For the last 16 years it has been consistently providing provide the perfect IT solution to its clients. It has built a large database of knowledge that's applied to deliver solutions that meet their customers' needs, expectations, and budgets. Luminous Infoways follows a proven development methodology on every project it undertakes.

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