

## **Community Based Risk Management Institutions and Disaster Preparedness and Response: Evidences from Cyclone Phailin**

**Background:** Disasters crowd out development gains, yet continue to be conceptualized as external shocks to normally functioning societies and economies, and not as manifestations of underlying risk drivers inherent to development policy and practice which generate and accumulate disaster risks. Policy and action need to go beyond the reduction of existing risk and prioritize the prevention of new risk accumulation. Systematic analysis of disaster response can help indicate the extent to which such policy and practice transformation is actually taking place and indeed reflects in the way disaster risk is managed in practice.

Cyclone Phailin, which hit the Mahanadi Delta coastline on October 12, 2013 was the worst ever cyclone to hit Odisha in 14 years since the Super Cyclone Kalinga of 1999. High speed winds, cyclone induced rainfall and the subsequent flooding in major river systems in Odisha left a trail of devastation which severely impacted the lives and livelihoods of tens of thousands. However, in contrast to Kalinga there was an unprecedented level of preparedness for Phailin. The state government of Odisha was able to evacuate nearly 1.2million people within 36 hours to 247 cyclone shelters and thousands of school buildings. Cyclone alerts were issued to the coastal communities which was backed up by efficient media communication to communities. Thus, by the end of the second day, only 22 deaths were reported.



An important aspect of disaster preparedness evident during the event was the proactive role played by an extensive network of community level organizations which transformed early warning into early action by benefitting from the policy and governance 'super structure' and provided a complementary support at the grass root level. This was critical for conducting such a massive evacuation of communities at risk, and their gradual rehabilitation during the last 16 months.

All the studies and reports on Phailin shared so far focus on the technocratic approach and impacts, with limited emphasis on institutional arrangements. However, evacuation of this order is only possible due to an enabling environment that prompts communities to take local action. Therefore, the PfR project undertook an assessment in 59 villages (37 PfR project villages and 22 adjacent villages, of which 3 have community run Cyclone Shelter Management Committees (CSMC)) to understand: 1) the role of community risk management institutions in disaster preparedness, and 2) the enabling conditions which facilitate functioning of community risk management institutions. For the purpose of this study the 3 adjacent villages, which have community run cyclone shelter management committees, have been clubbed with the 37 PfR project villages to account for all the villages that have one or more community risk management institutions (CRMI) functional.

### **Main Findings**

#### **1.CRMIs deliver a specialized function enabling CMDRR**

While reviewing the existing institutional set-up in villages of the Mahanadi Delta and the roles that each institution is expected to play, it was found that CRMIs are the only institutions' that have the specialised skills and capacity to enable CMDRR. Further, investigation revealed that even the role of CSMCs is limited, wherein they are activated only in the 'during' phase of a disaster when communities are required to evacuate their villages and move to cyclone shelters and for the management of these shelters. In contrast to this, VLDRCs (that were formed under the PFR project) have a more comprehensive role to play in CMDRR, as they are active at all times and not only 'during' disasters. In the pre-disaster phase they address the gaps of risk reduction planning, preparedness and capacity building; in the during disaster phase they act as reliable links between the administration and communities, provide appropriate early warning information and support communities during evacuation; and in the post disaster phase they relay accurate information regarding relief, mobilize communities to engage in recovery activities and support communities to seek appropriate compensation for their losses. VLDRCs also have an integrated approach to risk reduction and thereby play a crucial role in integrating DRR aspects into ongoing developmental planning and implementation at the village level.

Institution	Roles and Responsibilities						Effectiveness		
	Livelihood Support	Village Development	Disaster Risk Reduction Planning	Social Development	Natural Resource Conservation and	Presence (% of villages)	% of villages below the 25 <sup>th</sup> quartile	% of villages above the 75 <sup>th</sup> quartile	Mean, Standard Deviation of Institution Effectiveness
VLDRC	x	x	xxx	x	x	66%	15	5	0.76 (0.14)
Panchayat		xxx	x	xxx	xxx	100%	17	15	0.64 (0.20)
Self Help Groups	xxx			xx		86%	14	12	0.63 (0.21)
Youth Club	xx			xx		41%	8	6	0.53 (0.25)
Farmers Club	xxx	x		x	x	12%	1	1	0.43 (0.30)
CSMC			xx			43%	2	1	0.76 (0.08)
PFCs	xxx			x	x	18%	16	4	0.67 (0.19)

## 2. Conventional institutions have a limited role in disaster preparedness and response at community level

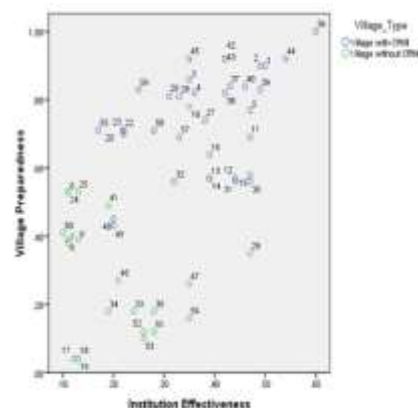
VLDRCs played an active role in all phases of disaster preparedness and response during Cyclone Phailin, as against conventional risk reduction institutions, which were not effective at the community level. Or for that matter community level institutions, who though active at the community level did not have the skills and capacities required for effective disaster preparedness and response.

## 3. Villages with effective CRMIs are better prepared

The effectiveness of all community institutions were calculated on the basis of their 'functionality', 'coverage' and 'operations'. Analysis of the trends revealed that amongst all community institutions, CRMIs were the most effective in the context of Phalin, as they led village preparedness through risk reduction planning, mock drills, information management, evacuation support and shelter management.

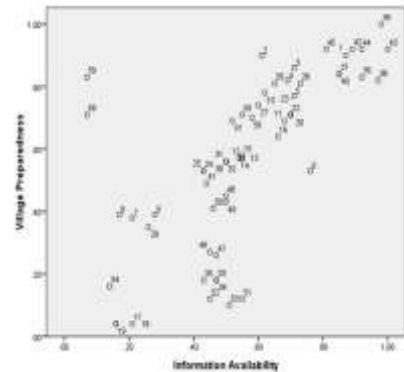
Further analysis also revealed that there is a high likelihood that as the effectiveness of CRMIs increase the village preparedness levels also increase. Village preparedness was calculated on the basis of village risk reduction plans, mock drills, early warning systems, identification of cyclone shelters, identification of high rise locations, evacuation plans, evacuation process and stocking of essentials.

## 4. Villages with better information quality are better prepared



Village wise information scores were calculated as a product of 'multiplicity of information' and 'information quality' (which in turn is a product of 'content clarity' and source quality'). These scores were correlated with village preparedness scores, to reveal that an increase in the availability and quality of information leads to an increase in village preparedness.

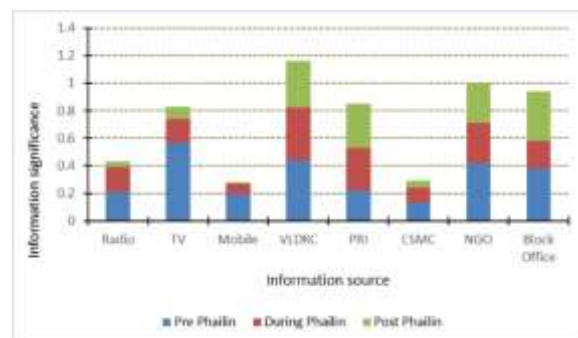
Further, it was witnessed that villages that had past experiences of similar disaster had higher preparedness, even though the availability and quality of information was low. Two villages of Kendrapara district stood out in this aspect, as Kendrapara was one of the worst affected districts during Super Cyclone Kalinga in 1999.



### 5. CRMIs play an important role in information transmission

While assessing the various forms of information transmission across all phases of Phailin, it was found that VLDRCs played an important role in transmitting information to the communities across most phases. VLDRCs were able to contextualise the general information received to the specific conditions and needs of respective communities and thereby relay accurate and appropriate information that the community could use and translate into action.

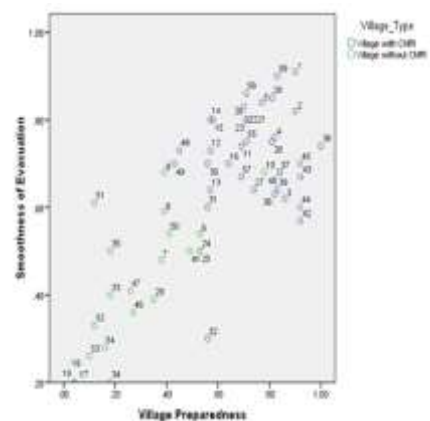
While communities rely strongly on information broadcasted through external sources such as televisions and radios in the pre-disaster phase, their relevance gradually decreases in the during and post disaster phases as communities' access to television and radio broadcasts get limited due to evacuation. Further, information broadcasted over the television and radio are generic in nature and do not address the specific needs of each community which vary as per their circumstances. In the post disaster phase, the Block Office plays a significant role in transmitting information with regard to relief measures and damage assessment.



### 6. Increased preparedness leads to smoother evacuation

On correlating village preparedness with smoothness of evacuation, it was seen that villages that had higher levels of preparedness were able to undertake smoother evacuation. CRMIs facilitated evacuation by undertaking risk reduction planning, mock drills, information management and transfer, and by mobilizing communities to evacuate to the nearest cyclone shelter/high rise locations.

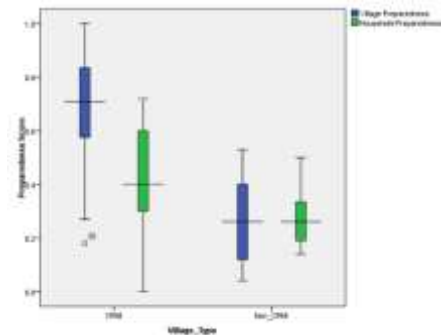
### 7. Relationship between the functioning of CRMIs, village preparedness and household preparedness





The main factors that have a high positive influence on village preparedness are risk reduction plans, early warning and institution effectiveness. Similarly the factors that determine household preparedness are participation of households in disaster preparedness activities, stocking of essentials and access to risk transfer mechanisms i.e. insurance. There is a positive relationship between household preparedness and village preparedness though not statistically significant.

Further, CRMIs have a greater influence on village preparedness as compared to household preparedness, as most CRMI interventions are focused at the village level.



**Discussions:** On the basis of the findings it can be concluded that investment in CRMIs has been a significant contributing factor in making communities disaster resilient. CRMIs function across socio - economic vulnerability profiles such that their effective functioning is able to override the socio-economic vulnerabilities faced by communities, thereby reducing their disaster impact and loss. This they do by proactively undertaking risk reduction planning and effectively delivering relevant and high quality information across the hazard cycle to the communities. At the same time, there remains a scope to improve the functioning of CRMIs wherein they need to increase their engagement at the household level, such that household preparedness keeps pace with village preparedness.