

Development & risk reduction in hazard-prone communities of Andhra Pradesh in India

Location: Khammam district, Andhra Pradesh, India

Date: 2005

Sector focus: flood, drought and cyclones

Spatial focus: disaster risk management

Bibliographical reference

Paul Venton and Courtenay Cabot Venton. *Development & risk reduction in hazard-prone communities of Andhra Pradesh in India*. Tearfund, Middlesex, 2005.

Abstract

The Khammam district of Andhra Pradesh is home to over 2.6 million people. Much of the local economy depends on farming rice, groundnuts, chillies, cotton, and tobacco, as well as harvesting teak, eucalyptus, cashews and bamboo. The fertility of the district relies on the seven rivers that run through it, and is greatly affected by the hot temperatures that can reach over 50 degrees Celsius.

This case study, produced by Tearfund, examines the work of the Evangelical Fellowship of India Commission on Relief (EFICOR), an indigenous Indian NGO that integrates long-term development strategies into a disaster risk reduction project. EFICOR has targeted ten vulnerable villages in Khammam district, with a Disaster Mitigation Programme (DMP). Through a **livelihoods analysis** framework, this case study looks at the natural, physical, human, social, and economic impacts of the DMP on the community.

Activities undertaken over the course of the project include technical support for growing alternative seed varieties, treeplanting, installing raised hand pumps to ensure a constant water supply during flooding, training community members in rescue and evacuation techniques, First Aid, hand pump maintenance, and teaching alternative cropping patterns. Physical infrastructure initiatives introduced diesel powered irrigation pumps and deepened the wells of existing hand pumps.

Although no specific intended end users are mentioned in the publication, this study can be used to influence **local, district and national level government** development planning to demonstrate how disaster risk should be taken into account. **Community development workers**

may find it relevant to understand how development projects need to, and can be successfully integrated into disaster risk reduction activities. Through **Vulnerability and Capacity Assessments, Livelihoods Analyses** and **Cost Benefits Analyses**, EFICOR demonstrates that successful integration of development initiatives with disaster risk reduction is possible.

Technical description

Hazard/risk type: cyclones, droughts and floods

Type of assessment: Vulnerability and Capacity Assessment (VCA)

CRA process

Methods used: Formation of Disaster Management Committees (DMC), training 20 youth to form an emergency response task force, formation of women's Self Help Groups (SHG) and farmers groups, livelihood analysis and cost benefit analysis.

Was livelihood analysis used? Yes. It was defined as the physical, natural, human, social and economic impact of integrating development with disaster risk management.

Was external specialist knowledge introduced? Yes. EFICOR provided capacity building through training, physical infrastructure development, and technical support for growing alternative seed varieties.

Vulnerability analysis

A thorough vulnerability analysis was carried out including examining some of the root causes of vulnerability. Some of the causes of vulnerability to drought and flood in the district were identified as not having access to, or being aware of, government programmes, lack of irrigation facilities and dependence on rain-fed agriculture, mono-cropping, and changing market forces in the face of globalization, making farmers vulnerable to changes in prices for cash crops.

Capacity analysis

A capacity analysis framework was used, and was seen as building upon the knowledge and skills already existing within the communities, increasing levels of community organisation and providing some external physical inputs.

Resources available: *Financial resources:* Tearfund provided funding for this project through EFICOR, an Indian NGO. *Human resources:* EFICOR provided capacity building training on establishing committees, First Aid, hand pump mechanic training, *Physical resources:* EFICOR provided diesel powered irrigation pumps to two villages, an initiative that benefited 35 farmers. They raised hand pumps in seven villages and provided hand pump toolkits. They also tested alternative cropping systems with improved varieties of rice, cotton, chili and okra that would be more resistant to pests and drought.

Limitations to capacity: N/A

Action planning and implementation

What actions were actually planned? There were many activities planned including:

- ♦ Introducing a pilot programme with improved varieties of rice, cotton, chilly and okra considered more suitable to the hazard characteristics of the region.
- ♦ Installing raised hand pumps, with deeper pipes, to ensure a water supply for villages in both flooding and drought conditions.
- ♦ Supplying farmer's groups with diesel powered irrigation pumps to provide agricultural land with river water.
- ♦ Training young people in rescue and evacuation techniques, community members in First Aid, hand pump caretakers in pump maintenance, and farmers in growing alternative crops.

What actions were actually carried out? All of the above activities were carried out in the community.

Have these actions turned out to be sustainable? Based on the success of the Disaster Mitigation Programme, EFICOR is expanding its programme to 20 new villages identified as very vulnerable in two neighbouring mandals (local administrative blocks).

Were there any unanticipated additional benefits of the actions? Because the government hand pumps are shallow, they dry up during the drought, requiring households to walk long distances to collect river water, in turn creating health problems. EFICOR, by taking account of the drought problems, digging deeper wells and installing raised platforms, has been able to provide a consistent year-round water source. A Cost Benefit Analysis (CBA) of the installation of raised hand pumps in Khammam district by EFICOR, demonstrates that for every one Rupee spent, 13 Rupees-worth of quantifiable benefits have been achieved¹.

Were there any unanticipated negative consequences of the actions? N/A

Limitations on action/sustainability of actions: In the short-term deeper wells will provide a source of water locally, but increasing use of ground water and the affects of climate change could further lower the water table causing water scarcity problems over a wider area. Equally the use of pumps for irrigation could lead to detrimental effects if replicated across the river basin.

Indicators

No specific indicators are mentioned, however one could look at the improved food security by moving away from mono-cropping, introducing drought and pest resistant forms of crops, and providing a consistent year-round water source. There is also the increased ability of the community to cope with flooding from the nearby river. More stable household incomes as a function of cash crops could be looked at, as well as health indicators as a result of the First Aid training.

What were the indicators used for calculating the Cost Benefit Analysis?

A CBA was done taking in to account the impact of health benefits and time savings of raised hand pumps during drought, and the blockage of hand pumps during flooding. For further information, refer to *Network Paper 49: Disaster Preparedness Programmes in India: A Cost Benefit Analysis*, (London: ODI, 2004) by Courtenay Cabot-Venton and Paul Venton.

¹ Cabot-Venton, Courtenay. Venton, Paul. *Disaster Preparedness Programmes in India: A Cost Benefit Analysis*, Network Paper 49. ODI: London, 2004. Available at: <http://www.odihpn.org/report.asp?type=Network%20Paper&id=2686&number=49>

Contextual notes

Existence/role of prior or contemporaneous conflict? No significant issues

Role of displacement/relocation. Flooding generally last a couple of days while droughts can last a season. The people of the community recognize the positive benefits that the flooding brings their community including improved nutrients in the soil, and teak.

Role of prior disaster & prior recovery attempts? N/A

Significant historical, geographic, economic, political, or cultural issues that influenced this instance of CRA and its consequences? N/A

Strategic notes

How has this practice of CRA influenced change in policy and practice at the national level?

The publication does not indicate that national level policy and practice were influenced as a result of this project. However, it does suggest that government development planning could be positively influenced by the findings of the project. For example, if future government hand pumps were installed to a deeper depth and on suitable raised platforms, their benefits would be considerably enhanced. Additionally, the undertaking of a CBA could provide additional leverage for support of CDM programs at higher levels.

How has this practice of CRA influenced change in policy and practice at local level? It is not known how this project has impacted policy at the local level. In practice, villagers now mention that flooding has become less of a problem in their community. This is not because the levels or duration of the floods have changed, but because they feel empowered through their training to deal effectively and in an organised fashion with the hazard.

How has this practice of CRA influenced the level of organization and solidarity in the locality where it was carried out? The establishment of committees, including a disaster management committee, farmers' group, youth emergency response task force, and women's Self Help Groups, has allowed for increased exchange of information in the community. There is also an increased ability for organizations to access government services, many of which are designed to benefit tribal communities.

Less divided along class, gender, age, ethnic lines? The extent of reducing divisions in the community is not known, however EFICOR's Community Organisers do seek to overcome the divisions between castes and between tribal and non-tribal communities. This does appear to be having an impact. There is also evidence of women's empowerment.

More divided along these lines? Not known

Are the people living in this area more able to speak out on issues that concern them? Yes, the women feel that they have more empowerment, and through the established committees, the people are better able to have their voices heard.

Have new civil society organizations been created directly or indirectly because of this practice of CRA? There were plans to create government-registered co-operatives that could access additional government services.

Lessons learned

- ◆ Risk reduction activities can successfully be integrated into development projects such as through the construction of raised hand pumps to address the concern of contaminated water sources due to floods or lack of water due to droughts or through alternative cropping strategies to address the hazard conditions in the region.
- ◆ Connection with government planning and international forces such as market prices are critical and affect local level vulnerability
- ◆ Advocacy is a crucial component to ensure that the root causes of vulnerability are addressed.
- ◆ The contingency plans, drawn up in the EFICOR villages, could be linked to existing government emergency procedures at District and Block/Mandal level to improve the effectiveness of disaster response.

Keywords

Floods, drought, cyclones, livelihood analysis, capacity building, root causes of vulnerability, alternative cropping systems, hand pumps, Cost Benefit Analysis (CBA).

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