Changing perceptions and practices in risk management: Climate Field Schools

Enormous recent advances in weather and climate prediction, combined with the shift in disaster management paradigm from crisis management to risk management, have provided developing countries with a unique opportunity to reduce vulnerabilities to extreme weather and climate events. In 2001, with support from the USAID Office of Foreign Disaster Assistance (OFDA) and the US National Oceanic and Atmospheric Administration's Office of Global Programs (NOAA/OGP), the Asian Disaster Preparedness Center (ADPC) began implementing a programme called "Climate Forecast Application (CFA) for Disaster Mitigation" in Indonesia, the Philippines and Viet Nam. In search of a communication tool that would connect intermediary and end users for the introduction of new technology to end users, as well as address their differing perceptions, several methodologies were assessed. The Farmers Field School for Integrated Pest Management (IPM) was found to be most effective, as it provided two-way learning of perceptions and practices.

Farmers in Losarang show a rainfall graph they have created from their own rainfall observations using improvised rain gauges. The farmers are now pilot testing a new planting calendar based on their enhanced understanding of rainfall patterns in their locality.

Taking the IPM Farmers Field School as a model, a Climate Field School (CFS) was developed in 2002 to facilitate the communication of climate information for reducing flood and drought risks in Indramayu District in West Java (Indonesia). The Indramayu Agriculture Office led the development of the CFS, in collaboration with the Directorate for Crop Protection (DITLIN) and the Meteorological and Geophysical Agency of Indonesia (BMG), with technical inputs from Bogor Agricultural University (IPB) and ADPC. Interactive training modules were developed covering the basic concepts of probabilistic forecasting, climate forecast products, methods of observing and recording climate data, use of historical data to assess impacts of climate variability on agriculture, and development of cropping strategies based on climate prediction scenarios.

The training programme was designed with: (1) training of agricultural extension specialists at district level to interpret and translate scientific climate information into potential impacts, and prepare response options; train trainers at sub-district level; and assist in refining CFS modules; (2) training of agriculture extension workers at sub-district level to communicate climate information in farmers' language; (3) disseminate adaptive farming practices, train farmers, facilitate farmers' adoption of the new technology (i.e. application of seasonal climate forecast in farming decisions) and assist in refining CFS modules; and (4) training of farmers. The training of farmers is conducted in two planting seasons (12 meetings in dry season, and another 12 in wet season) with knowledge application to farming operations.

The CFS was pilot tested in 2003 in three sub-districts of Indramayu District: Juntinyuat, Kandanghaur and Losarang. Participating farmers gained a systematic appreciation of climate variability from their assessment of the climate pattern in their localities, utilizing long-term historical climate data. Under the Climate Forecast Application (CFA) Programme, BMG provides to farmers a month ahead of the season for six rainfall regions in Indramayu , through agriculture extension workers, localized seasonal forecast of the onset of the dry or wet season, and the total rainfall within the season and with respect to the normal total rainfall during the season. Farmers use the forecast of the onset of the dry season (normal dry season is from April to September) to guide land preparation activities, and the total rainfall forecast to decide on which crop to plant and when to plant, etc. For example, if the BMG forecast says the dry season would be drier than normal, farmers start procuring water pumps or hand tractors while they can still get better prices. The seasonal forecast is complemented by the issuance of monthly forecasts of the total rainfall, as well as the normal rainfall during the month three months ahead of the forecast month. Farmers verify the forecast and monitor the progress of the dry season by observing the rainfall, utilizing improvised rainfall gauges (made from milk cans).

With the demonstrated success in the pilot sites, the Indramayu Agriculture Office is now replicating CFS in nine more sub-districts, with financial support from the District Government (Office of the Bupati). Replication in subsequent years is planned, with an annual budget of 100 million rupiah (about 11,000 US dollars) earmarked by the District Government to initiate CFS in 4 to 5 sub-districts every year. Efforts to scale up at national level are led by DITLIN, as part of its agricultural development programme. To complement these efforts, BMG has invested some 4 billion rupiah (about 440,000 US dollars) in 2006 for climate forecast downscaling to deliver localized forecasts in the replication sites. BMG plans to increase this budget to 12 billion rupiah (about 1.3 million US dollars) in 2007. All these efforts need to be complemented by farmers' resources (credit, farm inputs) to enable them to respond to the forecasts. The CFS may also be replicated to suit various stakeholders, e.g. plantation holders. However, further capacity building would be required in adapting the CFS curriculum. ●

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