LEISA INDIA

December 2008 Volume 10 no. 4

LEISA India is published quarterly by AME Foundation in collaboration with ILEIA

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DESIGN AND LAYOUT
S Jayaraj, Chennai

PRINTING
Nagaraj & Co. Pvt. Ltd., Chennai

COVER PHOTO
Flood resistant varieties and mixed cropping as a means of coping with climate change.
Photo: GEAG and S Jayaraj for AME Foundation

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Dear Readers

We are overwhelmed with your response to our survey. About 1400 readers have responded so far. A special thanks to all those who responded with valuable insights into how they have been using the magazine. Some of you have even provided further specific details about the usage, which is serving as a useful indicator of the impact. Once again, thank you for sparing your valuable time to give feedback. We are putting an insert in the magazine indicating the names of our LEISA family members who responded to the survey, so far. We have also started despatching CD to those who responded before 15th March deadline.

From our side, we believe, we should share the analysis quickly with you. To enable that, we have created a database where the analysis is being done online. The broad trends of the analysis are presented on page 40. Our editor, Ms. T M Radha has been following up with some of you individually to get more insights. Thanks to your cooperation, we are getting some interesting cases of magazine utility.

Some of you have been suggesting production of local language editions. We have made a beginning. We have brought out special translated editions in Hindi, Tamil and Kannada through the support of our partners. Please look at page 39 for details. Limited copies of these are being sent to farmer associations, village knowledge centers for strengthening the spread of LEISA knowledge at local levels.

In this year, 2009, which happens to be the silver jubilee year of LEISA global edition and 10th year of LEISA India, we look forward to renew our relationship with you. Together with your encouragement and support, in the coming decade, we hope to strengthen this LEISA educational movement manifold for the benefit of small and marginal farming communities.

The Editors

LEISA is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors, to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.

Adaptive agriculture in flood affected areas

Shiraz A. Wajih

Eastern Uttar Pradesh, in the foothills of the Nepal Himalayas, has been prone to floods for centuries. In the last 60 years, however, their frequency has increased dramatically. People living in the region have slowly developed ways to cope with the floods. These adaptive measures had not been documented until now. A booklet has recently been produced detailing adaptive agricultural practices in this specialised region.

The potential of community managed forests for carbon trade 25

Ashish Tewari, Vishal Singh and Pushkin Phartiyal

The "Kyoto: Think Global Act Local" initiative is an international project. It was set up to assess the potential for communities such as those in the state of Uttarakhand, India, to benefit from carbon trading. Members of village forest councils were trained to measure how much carbon their forests store per year. They are now looking for more "buyers" for their carbon, while continuing to manage their forests sustainably.

Making an opportunity in changing climatic scenario 31

Raj Pal Meena and P R Kumar

While rising temperatures and changes in weather conditions is affecting agriculture and is a matter of serious concern, farmers in Himachal Pradesh have converted it into an opportunity. Apple farmers affected by climate change have shifted to crops like kiwi and pomegranate. Farmers who were earlier not able to grow apples are happy growing apples now, in few other districts.

Cultivating resilience: Lessons from the 2004 tsunami in Sri Lanka 33

Melissa Harvey and Sathis Wijewardane p33

Coastal communities are particularly vulnerable to climate change. They are affected by changes in sea-level and wave height, as well as changes in weather patterns. Some families with home gardens were better able to recover from the tsunami in Sri Lanka than others. Such resilience often depended on how well the home gardens were protected by trees. However, strong community networks and related support, was also found to be very important for families recovering from this disaster.

CONTENTS

Vol. 10 no. 4, December 2008

Including Selections from International Edition

Participatory tools for assessing vulnerability

In Nepal, communities are affected by frequent flash floods, induced by changing climatic conditions. Assessing vulnerability of these communities to flash floods through people's participation helped communities better understand the consequences of climate change. Local communities took lead in developing adaptation strategies and mechanisms to mitigate some of the adverse impacts of floods.

Ram Chandra Khanal

Adverse impacts of climate change is becoming an important challenge for poverty reduction and maintaining ecosystems health, in the developing countries. Communities are becoming more vulnerable and their livelihoods are at threat. Climate change and climate variability is very complex, uncertain and a dynamic process. Understanding and assessing the extent, rate and direction of vulnerability is important for responding climate change induced adverse impacts. In this context, it is important to explore the effective and simple methods and tools to assess climate change induced vulnerability at the community level. There is growing recognition that participatory tools, traditionally being used by communities, can be very useful and an effective method to assess the vulnerability.

A study was carried out in Jugedi village of Nepal, to explore the strengths and effectiveness of selected participatory tools for vulnerability assessment in climate change and development projects. This village is 130 km from Kathmandu, the capital city of Nepal. The altitude of this village ranges from 400 to 800 meters above sea level. The village comprises of mixed ethnicity, culture and tradition. Women literacy rate is low (10%) compared to men (45%). The main occupation is agriculture, predominantly at a subsistence level. Farmers cultivate maize, paddy and millet as the main crops along with vegetables. Although the primary occupation of the community is farming, the village was found food 'insecure'. Only about 50% farmers had food sufficiency for 6 months. There were about 25 landless families. Besides crop production, daily labor within the village, seasonal migration for short term employment and marketing vegetables were the other important livelihood options for the communities.

Process

The study was carried out through consultative processes of community groups and natural resource management experts. Experts' input was solicited in designing the study framework in the beginning and then several field level discussions were carried out with a community group by using different participatory tools such as matrix ranking, seasonal calendar, historical trend and social and resource map.

To assess and map out vulnerability at local level, some specific questions were asked to the community like a) which is the climate risk factor for the communities? b) during which period are the communities at risk? c) which is the risk-prone area? d) who are the most affected?

Village community assessing vulnerability to floods

Findings

'Ranking matrix' was used to answer the first question on 'which is the climate risk factor for the communities?' After listing out major problems and ranking them in terms of their severity, community members finally came up with one major problem i.e., flash flood during late monsoon time. Based on the group discussions and exercises the problem of monsoon floods in the month of August and September was prioritized as a biggest problem. Once they identify the main problem, the community group members identified and prioritized the impacts from flash floods and analysed the risks (Fig 1 and 2 on p.19). They included agricultural land cutting, landslides, destruction of irrigation canals, damage to the drinking water supply system, loss of house and other physical infrastructures i.e. small bridges, temples. Agricultural land cutting was identified as the most severe impact.

Seasonal calendar was used to answer the question on 'during which period are the communities at risk?'. The community group was asked to identify the different parameters of risks from floods and to provide the most risky time during floods, month wise. The group easily identified the parameter and specific time of high possibility of flood occurrence. In this case, group identified late August and early September as the most risky period (Fig 2 on p.19).

A social and resource map is a participatory visual diagram which shows location of different kinds of natural resources and other features (infrastructure and social facilities) in the village. Community members were asked to prepare social and resource map in the beginning and then requested them to identify the most risky area with justifications. Once all community members agreed, the places were clearly marked in the map by the community group themselves. 'Social and resource map' was used to identify the most risky place in the community during flash floods. Based on

Fig 1: Ranking Matrix

Risk Parameters	*Agriculture land cutting*	*Land slides*	*Loss of house*	*Irrigation canal damage*	*Drinking water supply system damage*
Scale/Extent/ Severity	*XXXXX*	*XXX*	*XXX*	*XXXX*	*XXX*
Probability/ Frequency of occurrence	*XXXXX*	*XXX*	*XX*	*XXX*	*XX*
No. of persons affected	*XXX*	*XX*	*XX*	*XXX*	*XX*
Sensitivity					
Fragility	*XXXX*	*XXXXX*	*XXX*	*XXX*	*XX*
Slope/ Land cover	*XXX*	*XXXX*	*XX*	*XXX*	*X*
Lack of awareness and early warning systems	*X*	*X*	*X*	*X*	*X*
Severity of risk	*I (21)*	*II (18)*	*IV (13)*	*III (17)*	*V (11)*

X – Indicates severity of problem

all these exercises, community members identified and mapped out the most vulnerable areas in their community. There were also able to visualize the direction and extent of vulnerability over the last 3-4 decades from their own experience.

Focus Group Discussion (FGD) method was used to identify 'who are the most affected by the floods'? The discussion showed that 'women', 'poor' 'elders' and 'children' were more prone to flash floods. The community discussion revealed that most of the landless or very small landholders settling near the river are the most vulnerable communities during the monsoon floods.

Effectiveness and challenges of using participatory tools

Segregating impact of climate change and assessing vulnerability at the community level is a complex task. However, participatory tools were found to be very effective in encapsulating local issues, values and knowledge that were available at the community level. It was also proven to be effective to identify the extent of vulnerability, vulnerable time and the groups who are not vulnerable as well as portraying the most vulnerable area in a visual diagram. Besides these, participatory tools were very efficient to capture qualitative attributes. They need less time and cost and have proven to be very good learning tools for the community themselves.

This exercise assisted the community members to understand about the consequences of climate change and its relation with seasonal floods. The exercise was useful to develop some community based adaptation strategies and mechanisms (changing irrigation canal route, switching crop varieties and sowing time, modifying cropping patterns etc) helped in enhancing the capacity of local communities in mitigating some of the adverse impacts of floods. Communities started working in the community based spur construction programmes to minimize flood impacts. They also integrated these climate change and vulnerability concerns in the existing group work and reached out service providers (both NGOs and government organizations) for seeking additional support from them.

Acknowledgement

This brief article is based on the study 'Vulnerability Assessment in Nepal: Lessons Learnt from Participatory Vulnerability Assessments'. Some of the findings of this study were presented in an international workshop on evaluating climate change and development in Alexandria, Egypt. I would like to extend my sincere thanks to all the community members of Kabilas village and Basanta Ranabhat of Ecological Services Centre for their information, time and logistic support without which the study would not have been possible.

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Fig 2: Seasonal calendar

Particulars	*Apr-May* *Baisakhi*	*May-Jun* *Jyestha*	*June-July* *Aashad*	*July-Aug* *Shraban*	*Aug-Sep* *Bhadra*	*Sep-Oct* *Aaswin*	*Oct-Nov* *Karthik*	*Nov-Dec* *Mansir*	*Dec-Jan* *Poush*	*Jan-Feb* *Magh*	*Feb-Mar* *Falgun*	*Mar-Apr* *Chaitra*
Rainy Season												
Flood Period												
Festivals												
Land cutting												
Food Deficit												
Drought												
High monetary Requirement												
Water borne diseases												
Most vulnerable months				*II*	*I*	*III*						