

# Participatory Climate Risk Vulnerability and Capacity Assessment (PCR-VCA)

## Tools for operationalizing the Adaptive Livelihood Framework

### The Adaptive Livelihood framework

The Adaptive Livelihood Framework (ALF) is an extension of Disaster Resistant Sustainable Livelihood (DRSL) framework adopted by Duryog Nivaran to take a livelihood centred approach to disaster risk reduction. The ALF suggests that increased adaptive capacity cannot be achieved through a single, narrow intervention but a more holistic approach is needed to accurately identify the challenges and bottlenecks. A strong asset base is necessary with sufficient conditions for an adaptive livelihood, since the strongest asset base cannot yield an adaptive livelihood unless an enabling environment also exists. The Adaptive Livelihood framework (ALF) guides our attention to three main areas of consideration to help build adaptive capacities. These are;

- Livelihood assets base
- Enabling environment
- Adaptive livelihood strategies

ALF suggests adding *Knowledge* as the sixth dimension to the five assets model given in the Sustainable Livelihood Framework. The starting point of building adaptive capacity is to have the baseline; assess overall risk of the community and assess existing livelihood asset vulnerability/capacity base of communities and vulnerability/capacity to climate induced risks.

**The Participatory Climate Risk Vulnerability and Capacity Assessment (PCR-VCA)** is a methodology that Practical Action has come out by incorporating the Climate risk into commonly used Vulnerable and Capacity Assessment. Some of the tools have newly been developed and tested to assess the community's perceptions on increased climate risk and its impact on lives and livelihoods of the people. PCR-VCA provides a set of tools to operationalise the ALF and build the adaptive capacity of communities. PCR-VCA set of tools are broadly categorised under three different themes.

- 1) Assessing the community's overall risk context
- 2) Assessing livelihood assets base
- 3) Assessing the enabling environment

## 1) Assess the community's overall risk context

### 1.1 Disaster Prioritization Matrix

The Disaster Prioritization Matrix can be used to stimulate the participatory information generation process and also to understand the community's perceptions of various types of disasters they encounter. The matrix provides the current perception of the community on the severity and the frequency of different disasters. It can be used repeatedly to track the changes in the community's disaster perceptions.

Participants are asked to list all the disasters experienced in their locality. A scale from 1 to 5 is used to mark the severity (S) and the frequency (F) of the different disasters, with 1 as the lowest score and 5 as the highest. Scores for each disaster type are obtained by multiplying the marks given for severity and frequency ( $F \times S$ ). These scores are then used to rank disasters, allowing priorities to be identified and giving focus to DRR and adaptive livelihood generation strategies.

The outcome of this exercise can easily be cross-checked with available disaster data from governments or other institutions.

Men and women perceive disasters differently. Men in a fishery community could identify the tidal waves as the highest priority while women in the same community recognize drought as the major disaster. Disaster prioritisation matrix will help to prioritise disasters taking into consideration different voices of the community.

### **1.2 Hazard Mapping**

Participatory Hazard Mapping is one of the most common tools used to map a specific area, identify general infrastructures, houses and livelihood assets and weigh their exposure to hazards that are changing or introduced with climate change. The same tool has been used in traditional hazard mapping to help decide on DRR approaches. In the recent times we have used this tool to map changing disaster impacts. We found that the participatory nature of the tool makes it an effective tool to tap climate risk information and identify potential risks across locations.

GIS based Land Information systems (LIS) makes participatory or community based hazard mapping more accurate and effective. The participatory maps are useful to plan not only mitigation aspects but also to plan all stages of disaster management including preparedness/EWS, response, recovery etc.

### **1.3 Seasonal Calendar**

The seasonal calendar can be used to identify timing, the period and stresses related to disasters over an annual cycle. This tool is able to capture information about seasonal weather changes and hazards, diseases, community events and other information relevant to livelihoods under each month of a year. Normally 1-10 scale is being used in seasonal calendar to indicate the degree or the severity of change.

Nature dependent livelihood activities rely on timely seasonal or weather changes; timing and amount of rains, dry spells and other environment dynamics. A discussion related to observed seasonal changes in the environment and how the community has changed practices to adapt their livelihoods is helpful in revealing the awareness of the community on the changing environment and the actions they have taken to cope up with changes

Women have specific roles in common livelihoods activities such as agriculture, livestock, fisheries etc. Incorporating gender disaggregated information (e.g. gender based roles and relation analysis) into the seasonal calendar is important. It helps to capture how the gender based roles and responsibilities of the livelihoods get affected due to climate change.

#### **1.4 Disaster Trend Analysis (Historical Timeline analysis)**

This is carried out mostly with a group of senior citizens in the village who have thorough knowledge of the past disasters faced by the village. This information largely depends on the experiences and memories of the local people and the ability of the facilitator to help them to recall their experiences, and thus to increase accuracy, it is recommended to triangulate data findings - example by comparing the information obtained with the official statistics. Even though various matrices are used for disaster trend analysis, more emphasis should be given in discussions to discover the information related to trends and unprecedented events.

#### **1.5 Production trends and coping strategies matrix**

This exercise is carried out with livelihood groups (e.g. paddy, vegetable production etc.) and senior citizens who have considerable experience on particular livelihood practices of the village. Assessing production trend and coping strategies in a matrix will help to capture information about changes to livelihood patterns and climate induced challenges (and opportunities) at village or local level. Information coming out of analysis of matrix is compared with emerging disaster trends of the village. Based on this it is possible to assess existing (and introduced) coping strategies and effectiveness of these strategies in the emerging climate threats.

Women often use different strategies to cope up with changing climate. These coping strategies of women are frequently being un-noticed. Participatory coping strategy matrix provides an opportunity to identify these actions among different communities.

#### **1.6 Gender Role / Responsibility Analysis**

Climate Change affects men and women differently. These impacts are closely associated with roles & responsibilities assigned by the society for men and women. Therefore; the gender analysis is important integral part of the Climate Change Adaptation and Disaster Risk Reduction.

Mapping of Gender roles / responsibilities has a great use to identify the different roles played by men and women in a particular society and how those get affected due to CC. The exercise will provide information on the triple roles (Productive, Reproductive and Social) of the men and women. It is important that the discussion is facilitated to see how different roles and responsibilities changed over time due to male migration, increased responsibilities in farm lands and changes in the livelihood practices.

## **2) Assess the community's asset base: Assessment of Livelihood Assets – Vulnerability and Capacity (including current coping strategies)**

Community in a locality is often not a homogenous group - all communities are not in an equal position to access and have control over livelihood assets. In most communities two broader categories can be identified; communities with adequate assets and communities without adequate asset base to engage in livelihoods of their choice.

The matrix is adapted and extended from the Sustainable Livelihood Framework (SLFW) to help understand and assess community resilience to climate change. The matrix guides and

captures discussions on capacity/vulnerability of livelihood assets with different livelihood groups. It uses a set of indicators (productivity, sustainability, equity and risk) to help community to capture their perceptions about each livelihood assets in changing and unpredictable weather patterns. A scale of 1-5 is used to rank each category.

The exercise provides information for assessment of the asset base and creates a discussion among the community on productivity, sustainability, risks and equity of their livelihood asset base. It has been noted that the exercise is an eye opening for the producer groups for the effective use of livelihood assets.

Final scores of the different assets are reached by summing up the ranks given by communities and divided it by four (all dimensions are given equal weight). Final values are used to develop the asset diagram for different producer groups. Score obtained by the newly added *Knowledge Capital* depicts the size of the middle circle that reflects the knowledge asset of the producer group.

### **3) Assess the community's enabling environment**

#### **Participatory Market mapping**

Participatory Market mapping exercise is part of the Participatory Market System Development approach that Practical Action has been promoting for years. This recognizes that market system of any product is highly complex. The tool suggests splitting the market system into three broad categories for ease of execution. These are:

- Value chain
- Input/service providers
- Business environment

The tool has immense potential to capture the dynamics of the enabling environment proposed in the ALF. Both service providers and the business environment reflect the enabling environment of a particular livelihood sector. It can also be used to identify the climate induced stresses to the value chain of the producer groups and the external environment.

Practical Action recommends that the market map to be used not only as a theoretical framework to design various initiatives; but also to promote dialogue, reflection, awareness, and systemic thinking amongst a wide range of market actors and policy-makers. Our experience shows that this is a valuable tool for discussion and data gathering and planning.