From Vulnerability to Resilience: A handbook for programming design based on field experience in Nepal

PRACTICAL ACTION
Technology challenging poverty

From Vulnerability to Resilience:
A handbook
for programming design
based on field experience in Nepal

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Front Cover: Gam Bahadur making rope from a nylon sack in Nawalparasi District, Nepal (Mainstreaming Livelihood Centred Approaches to Disaster Risk Reduction; DFID, Conflict and Humanitarian Fund) 2010. Practical Action Nepal.

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Thanks in advance to all of those who submit comments on this version of the handbook to improve subsequent versions. Please send comments to: drr2@community.eldis.org with the topic of V2R Guidance Note Feedback.

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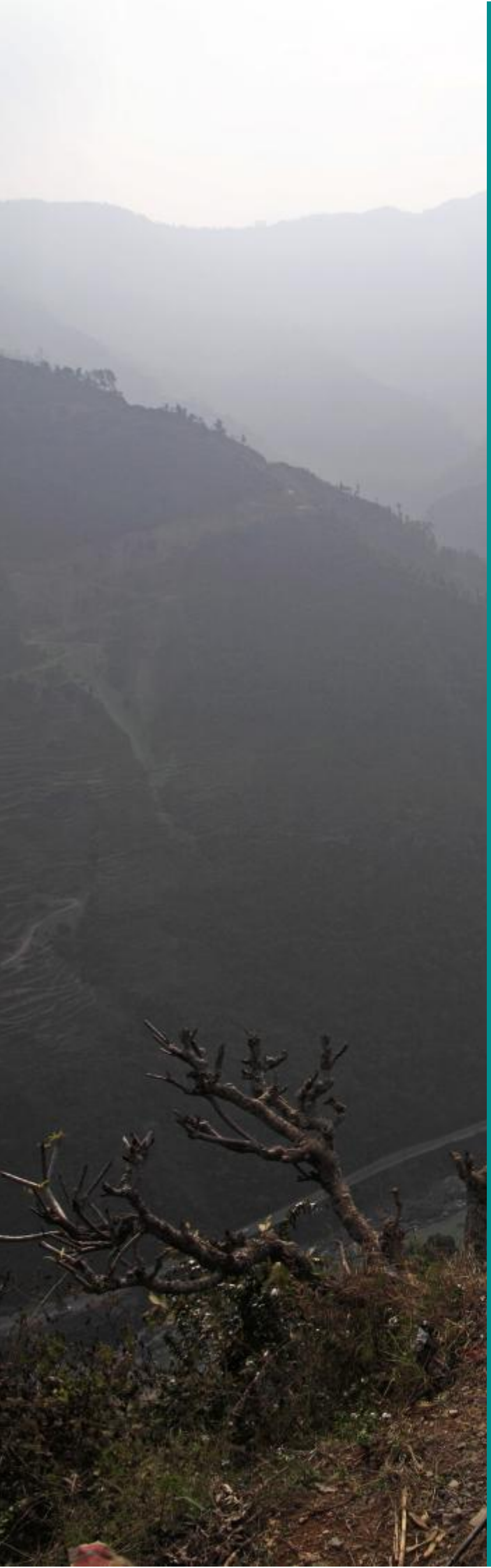

FOREWORD

At the government approvals session of the IPCC Special Report on Managing the Risk of Extreme Events and Disasters, held in Uganda in November 2011, it was striking to see the diversity of the officials involved in the process. There were water planners from Bhutan, meteorologists from the Bahamas, development finance managers from Germany and health ministry experts from Kenya. The Report's authors were similarly diverse, with disciplinary expertise ranging from physical climate scientists, economists, social development specialists and engineers among others. This serves to highlight that building resilience to changing disaster risks requires broad coalitions and knowledge from multiple sources. This is because the changes to weather-related hazards and to people's vulnerability and exposure affect everyone, pervade all sectors and require careful assessment to understand all the dynamic components at play. Without this understanding and appropriate action, we risk spiralling losses.

This handbook is an excellent starting point as it provides a straightforward, step-by-step guide to understanding changing disaster risk and how to translate this into a set of possible actions. The handbook is greatly enriched by the experiences of Practical Action Nepal in leading projects that have truly become beacons for a climate-smart disaster risk management approach. Their approach and the one detailed here underscores the importance of accessing and triangulating all available information about disaster trends, making efforts to draw on both scientific and local knowledge wherever it exists. For an organisation like Practical Action, widely respected for its culturally appropriate and robust solutions, following the steps laid out in this handbook will lead to high confidence that investments genuinely reduce disaster risk over time.

Dr Tom Mitchell, Head of Climate Change, Environment and Forests Programme, Overseas Development Institute

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Key Concepts

Adaptive Capacity

The combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities (IPCC, SREX, 2012)

Climate

Climate defined as the average weather, or as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system. (IPCC, 2007).

Climate Change

Climate change refers to a change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC, 2007).

Climate Hazard

The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC SREX, 2012).

Climate Impacts

Consequences of climate and climate change on natural and human systems such as sea level rise and desertification also referred to as 'sensitivity' in some climate change impacts and vulnerability assessments.

Climate Model

A numerical representation of the climate system based on the physical, chemical, and biological properties of its components, their interactions and feedback processes, and accounting for all, or some if it's known properties. The climate system can be represented by models of varying complexity, i.e. for any one component or combination of components a hierarchy of models can be identified, differing in such aspects as the number of spatial dimensions, the extent to which their physical, chemical or biological processes are explicitly represented, or the level at which empirical parameterisations are involved (IPCC, 2007).

Climate Change Projections

A projection of the response of the climate system to emissions or concentration scenarios of greenhouse gases and aerosols, or radiative forcing scenarios, often based upon simulations by climate models. Climate projections are distinguished from climate predictions in order to emphasize that climate projections depend upon the emission/concentration/radiative forcing scenario used, which are based on assumptions concerning, for example, future socio economic and technological developments that may or may not be realized and are therefore subject to substantial uncertainty (IPCC SREX, 2012)

Climate Scenario

A plausible and often simplified representation of the future climate, based on an internally consistent set of climate logical relationships that has been constructed for explicit use in investigating the potential consequences of anthropogenic climate change, often serving as input to impact models. Climate projections often serve as the raw material for constructing climate scenarios, but climate scenarios usually require additional information such as about the observed current climate (IPCC SREX, 2012).

Climate Trend

Climate trend is the general direction in which climate factors such as average annual temperature and rainfall, tend to move over time.

Climate Variability

Climate variability is variations from the mean state (and other statistics, such as standard deviations, the occurrence of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability). See also Climate change. (IPCC SREX, 2012).

Community

A group of people living in the same place or having a particular characteristic in common; a group of people living together and practising common ownership; a particular area or place considered together with its inhabitants. However, a community is made up of different social and economic groups and have varying access to resources, rights and information. As Twigg (2007) notes communities are complex and are often not united.

Coping

The use of available skills, resources, and opportunities to address, manage, and overcome adverse conditions, with the aim of achieving basic functioning in the short to medium terms (IPCC SREX, 2012)

Coping capacity

The ability of people, organizations, and systems, using available skills, resources, and opportunities, to address, manage, and overcome adverse conditions (IPCC SREX, 2012)

Coping Strategy

Coping strategies and adaptation are often used interchangeably but coping strategies are usually short term and immediate responses. They are often prompted by a crisis situation and are reactive responses which are orientated towards survival. Adaptation strategies on the other hand are orientated towards longer term livelihoods security and involve a continuous process of planning, using resources efficiently and sustainably and finding alternative livelihood options (CARE, 2009).

Downscaled Climate Model

Downscaled climate models are an attempt to produce more useful regional predications. There are two types of downscaled model, the first, a local climate model with a much smaller scale than global models is generated. This model takes the output of the global climate model as its starting point, using the data provided to 'initialise' the local model. The smaller scale model is then run to provide a regional prediction that accounts for features such as mountains, vegetation and land/water boundaries. Known as 'dynamic downscaling', this approach is, however, dependant on the validity of both the global and regional models. 'Statistical downscaling' also makes use of the output of the global climate model. Seasonal forecast data (which takes account of local features in its prediction of rainfall and temperature patterns) are transformed using statistical methods that allow the regional knowledge contained in the seasonal forecast to be combined with the future climate trend offered by the global model (IPCC, 2007)

ENSO – El Niño Southern Oscillation

ENSO is a complex interaction of the tropical Pacific ocean and the global atmosphere that results in irregularly occurring episodes of changed ocean and weather patterns in many months such as altered marine habitats, rainfall changes, floods, droughts and changes in storm patterns (UNISDR 2009). El Niño y La Niña are defined as sustained sea surface temperature anomalies of magnitude greater than 0.5 C across the central tropical Pacific ocean, El Niño being a warming and La Nina a cooling event. El Nino events are associated with wetter weather in Peru/Ecuador and East Africa and drier conditions in South East Asia, northern Australia and Southern Africa. La Niña events generally cause the opposite and are associated with increased Atlantic cyclones. Climate change may increase the strength and the frequency of the oscillation.

Erosive Coping Strategy

Erosive coping strategies are actions that individuals or households take to deal with changing circumstances which may jeopardise their future food and livelihood security. Erosive coping strategies are often non reversible and frequently fail to contribute to a lasting reduction in vulnerability.

Exposure

The presence of people, livelihoods, environmental services and resources, infrastructure, and economic, social, and cultural assets, in places that could be adversely affected (IPCC SREX, 2012).

Resilience

Ability of a community, to resist, absorb, cope with and recover from the effects of hazards and stresses in a timely and efficient way (Pasteur, Practical Action, 2011).

Scenario

In relation to climate change a scenario is a plausible and often simplified description of how the future may develop, based on a coherent and internally consistent set of assumptions about the driving forces and key relationships. Scenarios may be derived from projections, but are often based on additional information from other sources, sometimes combined with a narrative storyline (IPCC, 2007).

Seasonal Forecasting

Seasonal forecasting predicts the climate in between weather and climate model time scales and is based on slowly changing phenomena that have a significant impact on the weather, such as the El Niño Southern Oscillation (ENSO). Monitoring these phenomena allows seasonal trends to be predicted up to around two years in advance but with greater confidence for around three months. Typical seasonal forecasts predict daily rainfall with a level of confidence; generally speaking confidence reduces the further the location is away from the equator and the influence of ENSO (Ensor, 2011)

Sensitivity

Sensitivity is the degree to which a system is affected, either adversely or beneficially by climate variability or change. The effect may be direct (e.g. a change is crop yield in relation to a change in annual mean temperature or variability in the temperature range) or indirect (e.g. damages caused by the increase in coastal flooding due to sea level rise (IPCC, 2007).

Stress

A stress includes low impact events, and seasonal factors, for example employment, prices, health.

Trends

Livelihoods are affected by long-term trends. It is important to differentiate between trends that are likely to change as opposed to those that are likely to continue. Trends include: population growth, violent conflict, national and international economic growth, technology trends. It is also useful to note the difference between local and national and international trends.

Triangulation

Triangulation is the verification of information gained from one source or methodology with that gained from two other sources or methodologies such as meteorological records of past climate with community perception and dendrochronology.

Weather

It is important not to confuse weather and climate, weather is the short term daily and hourly changes in conditions such as temperature, rain, wind and humidity which can most reliably be predicted only up to about fifteen days in advance.

Part One: A Background to the Vulnerability to Resilience (V2R) Guidance Note

Introduction

Promoting resilience in practice is an emerging development goal. How to operationalise concepts of resilience is a challenge for many organisations. Practical Action's framework on resilience, called the Vulnerability to Resilience (V2R) Framework (see Figure 1 below) offers an approach of how to build resilience in a variety of contexts, through numerous entry points. It can be applied for policy, programme and project design as well as monitoring and evaluation.

This V2R Guidance Note offers an example of how it can be used for programme design based on field experience in Nepal. As such, it is aimed at practitioners who seek examples of how a framework for resilience can be used in practice, with an example from Nepal on programme design being offered. It includes guidance on how to include long-term trends in programming with a focus on climate change.

The V2R Guidance Note begins with a background of why it is needed, offers a short overview of the V2R Framework and provides a step-by-step process for holistic programme design. Sample workbooks are included to assist with information gathering and analysis. The appendices offer information on key climate resources as well as participatory tools used to uncover information with community members around livelihoods, hazards, climate perceptions and governance. The participatory tools have been updated to gather key information needed on community perceptions of climate change. The V2R Guidance Note ends with a short review of tools and frameworks for responding to climate change.

Why a V2R Guidance Note?

People face a range of shocks and stresses which is deepening vulnerability. Those who are marginalised are often exposed to changing hazards and risks. This compounds their vulnerability and can result in entrenched poverty. Practical Action recognises that people are living with uncertainty and are experiencing changing risks. We also recognise that the increased frequency and intensity of hazards is reducing development gains (See Box 1 below).

Our challenge is to design holistic programmes that meet the complex and dynamic nature of poverty. This includes the impact on livelihoods that a changing climate brings. Our programmes also need to identify opportunities to build adaptive capacity of community members and government officials in order to promote resilience.

Box 1: The context for a multi-dimensional nature of poverty and uncertainty

Three out of four poor people in developing countries live in rural areas (UNDP, 2007). Of these, most live in fragile environments such as arid or mountainous areas often at long distances from markets and other services. They have few resources at their disposal and have inadequate access to skills and technologies that could help them to make best use of those resources. Therefore their income earning options are limited and their ability to diversify or adapt when circumstances change is constrained. Poor people also often live in risk-prone areas such as on steep slopes, river embankments or floodplains because they cannot afford to live in safer areas. The impacts of drought and floods are often exacerbated by the results of unsustainable development such as deforestation or a combination of increasing population pressure, political tensions and economic changes that lead to practices that cause environmental degradation.

Conflict is fuelled by easy access to weapons and the increasing competition over scarce resources such as pasture and water. Where hazards impact exposed areas, the poor and their livelihoods tend to be the hardest hit. The livelihoods of marginal and small farmers, artisans and fishermen are affected through the loss of assets, loss of food sources (crops or stores) and loss of employment or income earning opportunities. When disaster strikes they may be forced to take desperate measures to survive such as abandoning their homes or selling vital land or tools on which their livelihoods depend because they have no savings or other alternatives. This undermines their future recovery and each shock can drive them deeper into poverty. The poor are often politically marginalized and have little voice in the policy or institutional decisions that affect them. Services, such as schooling, health, extension, transport and markets are often inadequate or unavailable to people living in more remote or challenging areas. They lack the safety nets that are taken for granted in richer countries, such as savings, insurance policies or government services to warn and protect them from disasters.

Growing uncertainty is a further characteristic of the lives of the poorest. As the world becomes more interconnected, the livelihoods of the poor can be affected by events happening in distant parts of the world. Financial markets and impacts of climate change can affect prices for staple crops in developing countries. Policy shifts, for example towards biofuels, can contribute to rising grain prices and food shortages. The impact of climate change is being felt directly by increasing numbers of people as changing seasons and more extreme weather patterns affect the natural environment that people depend on and contribute to crop failures and livestock losses, thus tipping the balance between survival and destitution. Poverty, vulnerability and disasters are closely related and cannot be viewed in isolation from one another. These multiple factors: lack of resources; fragile livelihoods; exposure to hazards; climate change and other trends; and weak institutional support mechanisms must be understood in a more integrated manner in order to seek effective ways to address them.

Source: From Vulnerability to Resilience. Pasteur. 2011

Our programming focused on food security and disaster risk reduction has led to a holistic approach for effective programme design – which we call the Vulnerability to Resilience (V2R) Framework (see Figure 1 below). This approach has been developed through practice from programmes and projects in Bangladesh, Kenya, Nepal, Peru, Sri Lanka, Sudan, and Zimbabwe over the past seven years.

We began to see that interventions which worked with the complex and dynamic nature of poverty were promoting resilience. We observed through our work with communities that interventions which considered the changing climate and identified appropriate innovations and technologies were leading to improved livelihoods. Technologies were identified based on needs and strengths and were adapted to the local context.

Climate considerations meant that, for example, certain crops and breeds were chosen; specific heights of raised tube wells were built to meet increased trends in flooding and early warning systems put in place to protect communities from changing hazards (for example case studies see Resilience in Practice: Briefing Paper, Upton and Ibrahim, Practical Action, 2012).

It also meant that community members and government officials were trained on how to gather information of changing risks and encouraged to build disaster reduction plans based on the realities at the local level. Policy processes, such as District Disaster Management Plans have been influenced as a result of local experience. This was done by building on existing governance systems and working across scales – local, meso and national.

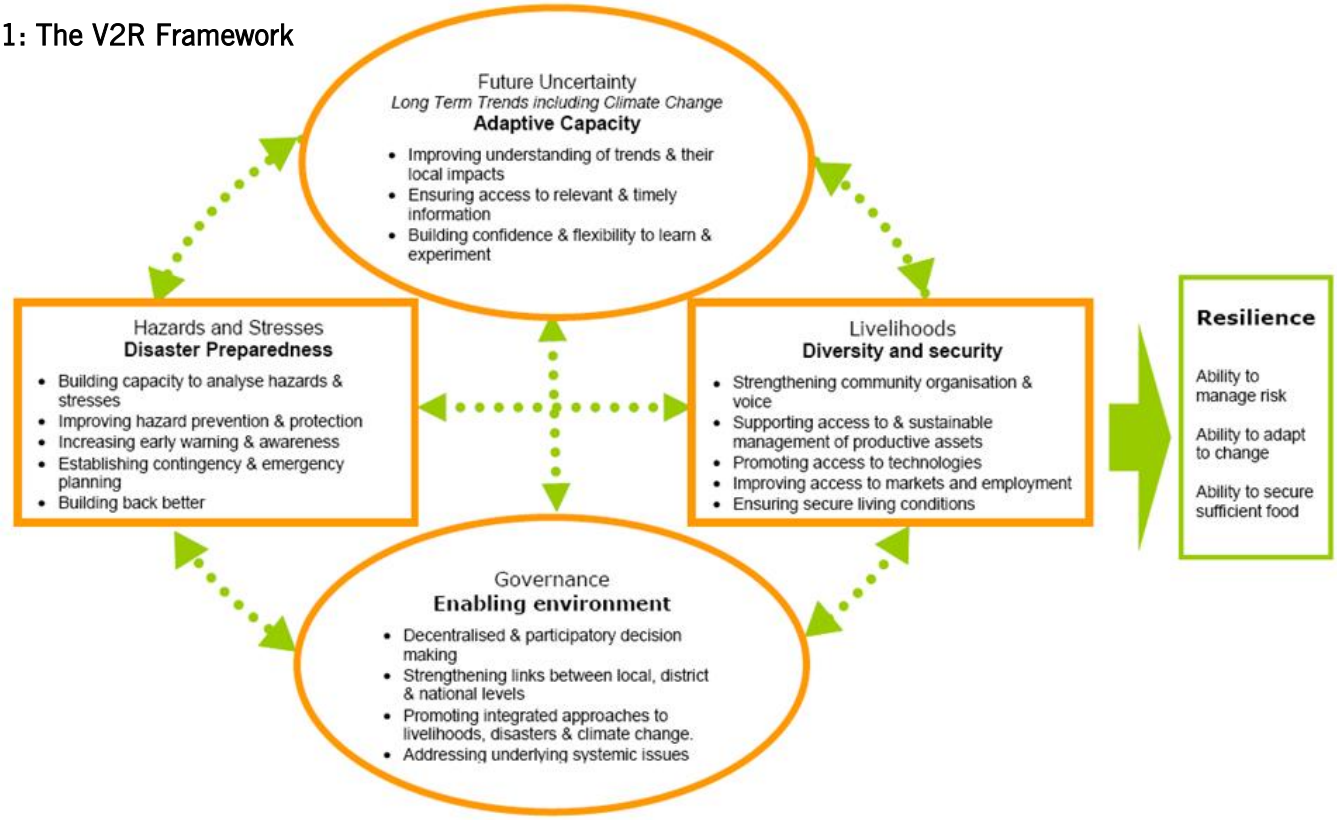
It is clear that in order to scale up our V2R work; we need to demonstrate how to operationalise the V2R Framework for programme design. As a result, we have developed this V2R Guidance Note based on experience from Nepal.

From Vulnerability to Resilience (V2R) Framework

Built on evidence from food security and disaster risk reduction programming, From Vulnerability to Resilience (V2R) is a framework (see Figure 1 below) for analysis and action to reduce vulnerability of individuals, households and communities and to promote resilient outcomes. The V2R Framework combines several key elements which will help to create development programmes to move people out of poverty by: strengthening livelihoods; disaster preparedness; adaptive capacity and by addressing governance issues. It provides explanations of the linkages between these key elements, as well as ideas for action to strengthen resilience.

The V2R Framework helps to understand the multi-dimensional nature of poverty and build programmes that address the dynamic nature of poverty and uncertainty in which people live. It pays special attention to integrating data about climate change and changing risks within its analysis of livelihoods, hazards and governance. It also acknowledges other elements of future uncertainty, such as rising food prices, fluctuations in the financial market, and urbanisation. The V2R framework below empowers community members, government officials, businessmen and development workers to identify pathways and take action to promote resilience.

Figure 1: The V2R Framework



Resilience: an outcome

Practical Action seeks to move people from a vulnerability to a resilient outcome. Through our food security and disaster risk reduction programme, this has mainly been evidenced by outcomes such as increased food security, increased adaptive capacity, increased safety, diversified livelihoods, increased access to information and knowledge, increased access to decision making, flexibility and innovation (see Box 2 below).

Practical Action defines resilience as an:

"*Ability of a community, to resist, absorb, cope with and recover from the effects of hazards and stresses in a timely and efficient way*" (Pasteur 2011).

As seen in Figure 1 above, resilience is the outcome of working in a holistic and integrated way. Resilience highlights a dynamic system and encourages holistic thinking (Aditya et al. 2010). Key characteristics of resilience based on Practical Action's food security and disaster risk reduction programmes include:

- Access to information and knowledge (such as climate data, market prices, seeds, government policies and rights).
- Working with uncertainty – integrating climate change information into programme design and encouraging flexibility through the programme.
- Innovation and technology development - intermediate technologies that work at the local level – such as shallow tube wells, seed selection, crescent irrigation etc.
- Cross-scalar and cross sectoral – working with different sectors and different scales (local, meso, national, regional).
- Power sharing – promoting participatory decision making and rights of community members.

Practical Action is beginning to monitor and evaluate resilience as an outcome through its programming. This is a challenge as resilience understood as an outcome needs to be evaluated over short and medium terms, as well as over the long term. Donor funds are often short term (2-5 year), and evaluating over the long term would require funding streams that consider longer timescales.

Who is this V2R Guidance Note For?

Designing programmes that take into consideration the complex and multi-dimensions of poverty requires a sense of curiosity and discovery by practitioners - curiosity to learn about people's assets and the drivers of vulnerability that they face. The V2R Guidance Note aims to operationalize the V2R Framework in a user-friendly process. The main goal of the V2R Guidance Note is to provide a process to gather information and organise data for analysis for programme design and review. Programme design for a three to five year period requires: identification of a specific site or region; a clear vision; an understanding of the context and the dominant policies and practices; an understanding of challenges faced by different people within a community; and knowledge of existing and potential partners, institutions and processes operating and impacting communities. Developing programming also requires a monitoring and evaluation strategy developed with community members.

This V2R Guidance Note has been designed for programming staff, such as team leaders and project managers who are responsible for updating programmes of work for poverty reduction and who seek to move forward by working with uncertainty and changing risks. It is essential to move beyond business-as-usual and apply new ideas of resilience in practice to secure development outcomes. It is also for local partners – such as community based organisations, local and district authorities who are crucial in programme and project design, review and evaluation.

What is new about the V2R Guidance Note?

A new element of this V2R Guidance Note is how to incorporate climate data to identify possible adaptation options, alongside considering other risks and capacities. Climate change is given a prominence among other uncertain trends and is mainstreamed throughout the V2R Guidance Note. Climate change impacts are not seen as a stand-alone issue to address. As a result, care has been taken for it not to overshadow the importance of understanding livelihoods, hazards, and governance issues which dynamically interconnect and shape people's lives.

The main goal of the V2R Guidance Note is to integrate climate change into considerations of resilience. It is essential that organisations working on poverty reduction take into account the impact of climate change on the communities and sectors where they are working. In so doing, they will be able to support community members and government officials to adapt to the adverse effects and take advantage of any opportunities presented. This requires a detailed analysis of the impacts of climate change at a local level in order to develop targeted responses to build adaptive capacity to withstand both sudden shocks and incremental changes in the climate.

Box 2: Resilience in Practice- Changes in Programming based on the V2R an example from Ancash, Peru

The Development Challenge:

In Ancash, Peru, small land holding farmers who were food insecure are now food secure throughout the year. The communities in Ancash are made up of small land holding farmers with no access to agricultural extension services and little access to government services and decision making processes. Ancash has been experiencing melting glaciers, frosts, droughts, landslides, floods and strong rains. The communities have also seen an increase in extreme temperatures evidenced by ice storms and a colder climate.

The Programme Intervention – V2R Framework:

In addressing these development challenges, we developed a livelihoods centred disaster risk reduction programme for a five year period. The programme was built on a vulnerability and capacity assessment with community members and other stakeholders. It included gathering information from communities on changes in the climate.

The programme organised and trained community civil defence in disaster preparedness and response; developed farmer field schools and an evolving learning system and fund committees. It also promoted seasonal and off season vegetable production and sales. Innovations and technologies included:

* recovery of native varieties of potato (10 varieties), maize (6 varieties), forage, barley and wheat, which are more resistant to plagues, drought and freezing weather;
* breeding of new strains of potatoes, maize and alfalfa;
* Crossbreeding guinea pigs with local breeds, incorporating local and external knowledge on animal sanitation, feeding techniques, and installation of protective infrastructure resulting in bigger guinea pigs.

The Resilient Outcomes:

Working across the four elements of the V2R Framework (livelihoods, hazards, uncertainty and governance) has led to increased food security of farmers as well as increased their access to decision making processes. Local level risks and capacities have been included in the Ancash Food Security Strategy, the Environmental Education Plan and the Climate Change Strategy. In addition, eight community projects which reduce disaster risks have been approved for funding in the past three financial years and community plans have been incorporated into the development plans of three municipalities.

Similarly, joint lobbying with GRIDES (Network for the promotion of disaster risk management and climate change adaptation) has resulted in the Ministry of Economy including a budget for disaster management and emergency response in the Ministries of Agriculture, Education, Health, Housing and Transport. In addition to improvements in governance, the Ministry of Education has endorsed the Farmer Field School qualification and is seeking to replicate the model.

Together, by working through a holistic approach with community members and including information on their changing climate, Practical Action has seen these communities build their adaptive capacity, influence decisions that affect their lives, link to and influence government processes, increase their food security and share learning and lessons with others.

For more details of this project and other cases of promoting resilience see: Resilience in Practice: Briefing Paper. Upton and Ibrahim, Practical Action, 2012.

An updated use of participatory rural appraisal tools is needed to ensure that the information gathered through traditional participatory methods will be useful in describing community perception of changes in weather patterns, intensity, variability as well as trends in the climate (see Section Three).

Although most programme cycles and projects by non-governmental organisations are short term, designing requires a long-term vision to build resilience and not contribute to future climate change through carbon emissions. The design of programmes and projects must be based on past climate data and community perceptions. Climate change projections and weather forecasts are now available over different time scales (days, seasons, years, decades, 50 years and more) however this information is patchy and they each have uncertainties that need to be understood.

Practical Action has decided not to include climate projections (30 years and beyond) into information and gathering assessment methods to date. Furthermore, many communities that Practical Action works with are seeking to build local action plans with a horizon of no more than five years. Ensuring our interventions are climate smart over the short term with a long-term vision is a move in the right direction to promote adaptive capacity of community members and government officials across sectors and scales. As a result, the V2R Guidance Note seeks to provide a clear way of integrating climate change data into an analysis of people livelihoods, the hazards they face and governance context in which they live.

Box 3: Testing the V2R Guidance Note in Nepal – Key Findings and Lessons

This V2R Guidance Note has been developed by building on the V2R Framework, through a desk based review of different vulnerability and capacity assessment tools (Appendix 6), and a review of tools which seek to integrate climate change adaptation. The findings from the desk based review informed the development of a step process.

The draft V2R Guidance Note was field tested in two sites of Nepal, Samjhana Tole and Thulo Balapur in Bardiya District with Practical Action Nepal staff, community based organisation partners, district officials, and a representative of the Department of Meteorology and Hydrology through a week long workshop. The draft was then revised, reviewed by two experts from policy and practice, and internally by staff. It is Practical Action's aim to continue to use the V2R Guidance Note in its programming and project design and to gather evidence from the field to continually improve and learn.

Four teams with two communities applied the V2R Guidance Note process in Bardiya district of Nepal where there is a high level of poverty and changing risks. The teams applied the relevant participatory tools to uncover livelihoods, hazards, governance and uncertainty dimensions which community members face. The purpose of this field work was to demonstrate how to use the handbook to: gather a range of information with different community members; to bring back the data from the field and begin to synthesise and analyse it for programme design. The full report below (Appendix two) is based on one day in the field by two groups and one day of analysis and write-up. Field testing the V2R Guidance Note led to interesting challenges and lessons.

Challenges in using the V2R Guidance Note

Firstly, the guiding questions were nearly forgotten when in the field as they turned to their participatory tools they would normally use but did not consider consulting the guiding questions to ensure they were gathering the needed information. This is a serious omission as it has greater impact when NGOs work in partnership with community based organisations (CBO) for community assessments and mobilisation. Rural development facilitators' traditional use of the participatory tools may leave new dimensions unexplored if they continue to use the tools based on business as usual. For example, through seasonal timelines, historical timelines, trend analysis, hazard mapping and vulnerability ranking, there is a needed new emphasis on the changing hazards and the impacts these changes are having on different members of the community. For example, considering the seasonal timeline tool, it is important to gather not only how the variable, such as rainfall, changes over time between different months, but the intensity of the variable. This means that facilitators need to gather information of shifts as well as intensity which might not be traditionally gathered. For linkages between impacts of changing hazards for livelihoods, it is this type of information that needs to be gathered from the community.

Secondly, when in the field using the participatory tools for livelihoods analysis, there seems to be a focus on assets that were heavily affected by hazards. This could be as a result of having a disaster risk reduction early warning project with this community which biased their answers. It was noted that there is a need to ensure that all assets are considered and their coping strategies. For example, pests were not identified as hazard although they have a significant impact on rural livelihoods. In addition, indigenous coping strategies were not collected in terms of how they deal with a variety of changes and challenges, nor were there discussions

on whether these coping strategies were erosive or not. To do so requires broader discussions, identification of a criteria for evaluation (trade-offs between short-term gains and review of long-term sustainability), review of technical evidence (i.e. the impact of use of genetically modified crops).

Thirdly, not all meteorological trends were mentioned by community members present and there needs to be an understanding by the facilitator on why certain trends have been highlighted and others unmentioned. As highlighted above, this could be a result of responding to the questions based on previous project experience with the NGO or it could be that certain changing meteorological dimensions are not affecting them. Unless the facilitator probes the responses, then they are left to guess during the analysis stage and will need to return to the community to fill in the gaps. This also highlights the importance of capturing the information from a variety of stakeholders in the community. For the final report, narrative around the different changing meteorological dimensions needs to be created out of triangulated information from different community members and climate data.

Fourthly, regarding governance issues, the focus on the location can obscure the importance of doing Venn diagrams with NGO workers to uncover the impacts of various policies on rural livelihoods and the opportunities to influence policy processes (i.e. Agricultural policy strategy, Local Adaptation Plans of Action, Disaster Risk Reduction Policy and institutional arrangements). Venn diagrams conducted with community members focus mainly on the organisations which they encounter yet does not bring out the policies and processes which affect them and are made at district, national or international levels.

Fifthly, during our field testing, not all the facilitators of data collection through participatory tools took part in the analysis of the information. This poses risk of misinterpretation and loss of information. A suggestion from staff was that facilitators should summarize information from different tools and present it to each other, before starting with the analysis. It might be also helpful to make regular breaks when performing the assessments, after finishing certain tools. Reflect, summarize and decide what information should be collected with help of coming tools. In such a way then the information gathering process is flexible and more time may be needed to uncover information, social and power dynamics.

Recommendations from the Field

Together these issues from field testing highlight the need for capacity building of CBO facilitators and mobilisers in order to make best use of the participatory tools to gather the needed information on changing risk and impact on livelihoods and governance systems and make linkages across the four components of the V2R framework. The V2R Guidance Note Version 1 will unlikely be successfully used by CBO facilitators and project staff unless they have been given adequate briefing on the V2R Guidance Note , the aims and what are the new implications for the way they gather and synthesise information to date. Climate change is affecting livelihoods, and unless traditional participatory tools are used to uncover questions around this impact, then they risk being implemented as usual and not uncovering different trends, variability, and changes in weather patterns that are affecting people's livelihoods.

Furthermore, this feedback points to the importance of the collaboration between CBO facilitators and mobilisers with NGO project staff to ensure that information is understood and action plans are developed from a depth of information gathering and analysis. This also highlight the danger of bringing in consultants for baseline designs for projects, as a real process of design, review and evaluation requires iterative learning and building on experience with communities.

Lastly, it is important to highlight that the final sections of the report from the field are not complete as it was not possible to gather all the needed data and highlight gaps and findings in such a short time frame. The field testing concentrated on challenging the process and the workbooks to ensure that they were user friendly and offered a valuable holistic process for vulnerability and capacity assessment which included climate change considerations. As a result, the report below (appendix two) is not a comprehensive information gathering and synthesis but offered the teams a trial run on how they can apply it for their programme design and allowed them to improve the V2R Guidance Note that you see here. However, despite the short timeframe, Step 7 was found challenging in that project managers and community mobilisers do not necessarily synthesise data and come up with headlines to share with stakeholders. Furthermore, the task would have been multiplied had the field testing actually consulted a number of stakeholders and probed gaps. It is clear that the process of using the V2R Guidance Note could vary from weeks to months of investigation and analysis with the communities. It is up to the project team and dependent on the context in which they are operating and their existing relationship with the communities and relevant stakeholders. This is a strength of the V2R Guidance Note as it recognises the different starting points of programme designers and community mobilisers, as well as highlights the active role of the user in making decisions on how to use the V2R Guidance Note to improve their work.

However, this all takes time and is costly. Practical Action has begun to conduct cost benefit analysis of their livelihoods centred disaster risk reduction work in order to uncover whether the investment in the V2R and its participatory methodology demonstrates an efficient investment for donors and governments.

Part Two: Operationalizing the V2R Framework

About the V2R Guidance Note and How to Use It

Through a people centred approach, the V2R Guidance Note aims to help heads of development programmes, team leaders, project managers and their partners develop resilient programming. This is version 1 of the V2R Guidance Note based on field testing in Nepal and seeks to act as a discussion point for improvement for subsequent versions. The main goal of the handbook is to:

- Offer a methodology to discover information about community members in a holistic and participative way
- Bring together information and synthesis data across four components: livelihoods, hazards, governance, and trends - including climate change
- Provide workbooks to help collect and analyse the information across the four components of resilience framework
- Suggest a structure for a narrative report that can be used to guide programming and project design for resilient outcomes.

The V2R Guidance Note is to be used over several weeks or months depending on one's starting point. Development work is an iterative process, and at its best is based on reflective practice with a variety of stakeholders. Recognising however the need for manageable process to guide programming which incorporates climate change, this V2R Guidance Note offers a step process to help guide the design.

The V2R Guidance Note is developed out of Practical Action's programme of work on food security and disaster risk reduction. As such, the V2R Guidance Note recognises that any programme of work is not starting from scratch but building on previous work and partnerships and working under certain thematic boundaries and constraints. The V2R Guidance Note should be considered as a tool to help programme designers improve their information gathering in relation to a changing climate, and update a the challenges that communities face and their capacities.

The V2R Guidance Note offers a methodology to gather and analyse the needed information for holistic programme design. As a process, it offers seven steps to work through. These include:

- Step One: Community Profiling
- Step Two: Livelihoods Analysis
- Step Three: Hazard Analysis
- Step Four: Analysis of policies and institutions
- Step Five: Uncover climate information from historical records and community perceptions
- Step Six: Adaptation to Current Trends, Variability and Shifting Patterns
- Step Seven: Information Synthesis

Depending on one's starting point, users may choose to skip steps as they may have already done the community profiling and have a good idea of the livelihoods of the communities they work with. The importance is to link information from across the different components (livelihoods, hazards, governance and uncertainty) together for holistic programme design.

Each step provides:

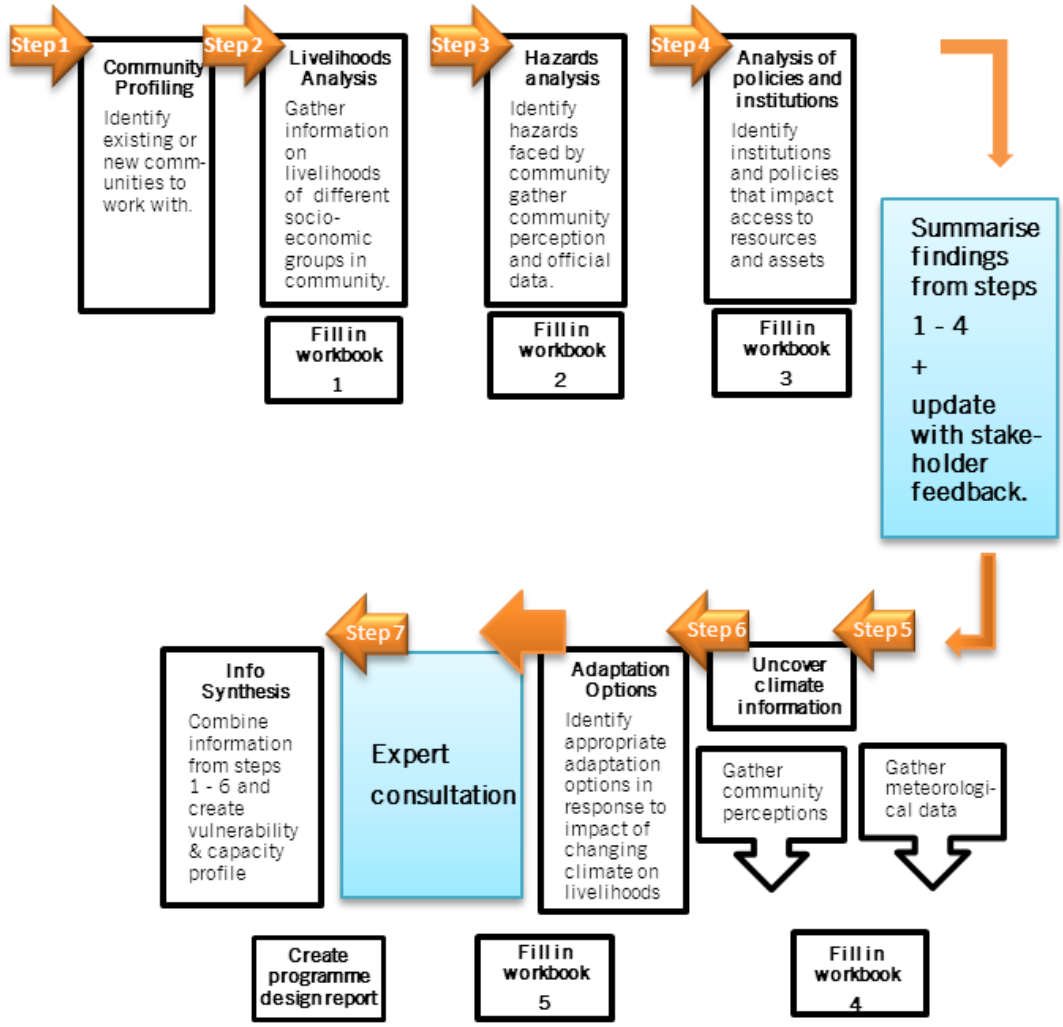
- context as to why the step is important the objective of the step
- guiding questions for key issues to explore with different community members
- a workbook as an example of how to collect the information needed for the step and how to synthesise the information across the four elements of the V2R Framework.
- a signpost to potential tools to help uncover the answers in a participatory way with different communities members, government official and other stakeholders. The tools have been divided in terms of their use for information gathering around: space (or typography and use), time (events in the past and now), relationships (between different community members and processes) and other. These are simply a suggestion of tools to use, rather than a compendium of tools available. For a valuable resource for participatory tools, see Methods for Community Participation: A complete

guide for practitioners by Somesh Kumar. Furthermore, existing use of participatory tools need to be updated to gather sufficient information regarding changing trends and impacts of hazards and livelihoods. As a result, keeping to traditional use of participative tools, such as seasonal timeline, might not bring out the needed information to deal with changing risks. Instead, the facilitator must be aware of the guiding questions he/she hopes to answer and must adapt the use of a seasonal timeline to consider not only the time of the event (i.e. hot days), but how is has changed from the past as well as the intensity or character of the event (i.e. longer period of hot days, hotter than the past and beginning earlier than before).

The V2R Guidance Note can be used by staff through reading the processes and understanding the point of the recommended steps. By identifying which Step they are at, they can then work through the guiding questions and use the highlighted tools to gather the needed information with community members and partners. The V2R Guidance Note provides workbooks in order to gather and organise the information needed from the steps and encourages linkages across the steps. It also offers a way of organising the synthesised information for a final programme report.

The V2R Guidance Note then, can be used to: develop a programme document; inform strategy; develop monitoring and evaluation systems, as well as inform project design. The steps conclude with a template for a programme report. The report suggests headings as well as the inclusion of workbooks and narrative script that respond to the guiding questions. The report also points to the fact that the details must be shared back with different community members and stakeholders in order to move to the next step of programme design and planning project interventions. An example of such as report is included in Step 7 through field testing in Nepal. A workflow chart below (Figure 2)provides an overview of how to use the handbook, referring to the seven steps.

Figure 2: Flowchart for the V2R Guidance Note



The use of the V2R Guidance Note is a tool for designing and updating a programme of work. It helps to guide key areas of work for the next three to five years with a community and partners. It can also lead to action plans by following up with other project design materials (for example Practical Action's Participatory Action Planning).

Preparation

Putting Together a project team:

- The field team should have experience in:
- Understanding of livelihoods and assets
- Participative methodologies to uncover information, most commonly known as Participatory Rural Appraisal
- Understanding of climate change and its current impacts
- Process planning
- Sourcing relevant materials – both primary and secondary information
- Synthesising and analysing skills

Step One: Community Identification and Profiling

Context:

Developing a programme of work does not start from scratch but builds on past experience as well as thematic interests. Identifying participating communities for any programme of work is crucial. This may be based on prior experience with the community, the special conditions that the community faces, strong relationship with government officials or partners in the region.

Purpose of this Step:

Is to decide where to focus your programme interventions, with which communities and why. This will support further information gathering as you will have a rationale for talking with community members and stakeholders.

Guiding Questions:

- Which districts and villages and towns are most vulnerable? (Based on socio-economic data such as human development index, exposure to climate change and hazards).
- Are stakeholder consultation processes encouraged at national and district levels that lead to identification of communities?
- What secondary information is available regarding the community – i.e. district profiles, village profiles, climate data, disaster information?

Tools to consider in this Step (check marked)

See Appendix 3 for details on each tool.

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	Historical Timeline	Focus Group Discussions	Survey
Resource Map	Seasonal Timeline	Hazard Mapping	✓ Secondary Resources
✓ Transect Walk	Trend Analysis	Livelihoods Analysis	
		✓ Key Person Interview	
		Matrix Scoring	
		Pair Wise Ranking	
		Spider Web	
		Venn Diagram	
		Vulnerability Ranking	

Box 4: Principles for information gathering:

- Respecting other people's views and attitudes;
- Approaching information assessment as a process of joint learning with the community;
- Recognizing the dynamic nature of people's lives and that a single information assessment cannot suffice but must facilitate iterative learning processes with community members.
- Use participatory tools to uncover information, but keep in sight that the manner in which you use the tool is more important than the tool itself.
- Avoid raising hopes and expectations of community members through information gathering and be clear of the intentions of the visit,
- Build on existing strengths, capabilities and capacities through the information gathering and analysis.

This process is time intensive, do not rush the process and be prepared to return to fill any gaps and discuss findings with different community members.

(Source: IUCN: Sustainable Livelihoods Enhancement and Diversification (SLED): A Manual for Practitioners, 2009)

Step Two: Livelihoods Analysis

Context:

Livelihoods can be understood in terms of looking at five assets (human, social, financial, physical and natural) needed to maintain economic and social wellbeing (Chambers and Conway, 1999). Livelihood assets are influenced by a range of drivers of risks: policies; laws (i.e. formal and informal); trends (i.e. climate change, urbanisation, increasing food prices); hazards and shocks (i.e. financial crisis, epidemic outbreak, floods). It is important to not only consider the assets on which a community or individuals livelihoods are based, but also the broader institutional and policy environment that supports or constrains livelihood choices and therefore capacity to adapt (Ensor, 2011).

Livelihood assets are likely to be impacted, both negatively and positively by changes in the climate. It is critical that development programmes and projects enable people to build their capacity to take up livelihoods strategies and influence policies for increased resilience in the face of climate change and other drivers of risk.

Purpose of this Step:

The objective of this step is to gather sufficient information on the livelihood assets on which the community depends in order to guide programme design. This step also points to the need to consider how livelihoods are being impacted by climate change now and are likely to be impacted in the next five years. How climate change will impact on livelihoods will be identified in Step 4. These livelihoods assessments will be done with different socio-economic groups in a community in order to recognise the different assets they rely upon and the risk they face.

This step also helps us to recognise the linkages between livelihoods assets and adaptation options as well as the opportunities to influence policies, institutions and key actors which support resilience or close down possible avenues for change.

Guiding Questions:

- What are the different livelihood groups in the community?
- What are the local livelihood assets and resources used by different community members and livelihoods groups? (Use narrative description as well as quantitative where appropriate).
- What are the incomes at the household level and what are the trends?
- How does access to assets differ between ethnic/caste/wealth groups and how does these affect livelihood strategies?
- What are the levels of food security like for different groups within the community?
- Does the community have good access to markets and sources of employment?
- Do mechanisms exist to such as insurance, safety nets, cash for work programmes and can community members access them?
- What type of access do people have to information and knowledge on how to protect their assets and / or diversify and adapt them?
- What skills and technologies exist in the community which could support innovation and adaptation of livelihoods?

Tools to consider in this Step: See Appendix 3

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	Historical Timeline	✓ Focus Group Discussions	✓ Survey
✓ Resource Map	Seasonal Timeline	✓ Hazard Mapping	Secondary Resources
✓ Transect Walk	Trend Analysis	✓ Livelihoods Analysis	
		✓ Key Person Interview	
		Matrix Scoring	
		✓ Market Mapping	
		Pair Wise Ranking	
		✓ Spider Web	
		✓ Venn Diagram	
		Vulnerability Ranking	

Workbook One: Livelihoods Analysis

How to Use:
Identify the different livelihood groups in the community. Once you have conducted the livelihoods analysis with different livelihoods groups, add the data into the workbook. Linkages across hazards, governance and climate information will occur in the next steps. It is important to get a clear idea of livelihoods groups and assets that are available.

Return to these columns after Step 3 and Step 4

Liveli-hood Group	Livelihoods assets and resources	Impact of Hazard*	Impact of governance and policy*	Current strategies*	
				Erosive	Coping
Farmer	Cultivatable land			Refraining from paying school fees and rationing food.	Irrigation – shallow tube wells and irrigation canal improvement. Installing electric fences. Using drought resistant seeds or conversation farming methods.
	Stream				
	Road to market				
	Marketing				
	Irrigation channel				
Wage Labour-er					

Remember:

The importance of using this workbook for each livelihood group[2] is to learn about a person's livelihood assets and how hazards impact their livelihood options. It is also important to recognise the power imbalances between the different livelihoods groups are and how policies and formal/informal rules are also limiting or promoting people's livelihoods strategies. This information will be gathered in Step 3 and Step 4

Livelihoods Workbook: Example from Nepal

Livelihood Group	Livelihoods assets and resources	Impact of Hazard*and trend of hazards	Impact of governance and policy*	Current strategies*	
				Erosive	Coping
Farmers	Cultivable land	There is no erosion of cultivable land because the river changed its course. There was some top-soil erosion in upstream forests. Inundation of cultivable land increases the fertility of land; the increase in frequency of flooding brings fertile top soil from upstream.	Government provided land to the people for cultivation. But the area is limited (3333.33 sq. meter) from where they can only meet their 6 months food supply.		Construction of 150 m Bio-dyke.
	River	Flooding led to widening of river and river bed rising.		Extraction of sand for construction of houses.	
	Forest	Community perceived that siltation and river bed are rising due to deforestation in the upstream.	CFUGs are providing credit to youths (to go abroad for work) Separate forests for men and women (helping to empower women decision making)		Forest managed by community people. Medicinal plants cultivation inside the forest for communal benefit.
	Road	Inundation causes difficulty in transportation.	New settlement – roads are wide and managed. (for immediate, going abroad seems good option. But promoting going abroad for work seems erosive strategy)		Boats were made available for rescue and transportation purpose during flooding.
	House	Destruction of houses completely and partially due to flood, fire and wind storm (The houses	Community people are helping to re-construct houses that get		People build extra floor in their houses both for living and

[2] A livelihood group allows you to explore the different social and economic groups within the community. Often one person might belong to numerous livelihood groups, such as a famer, a vegetable seller and a wage labourer.

		in the community have bamboo wall and thatched roof).	damaged by flood.		storing grains during flood. Raising the plinth level of houses.
	Crops/Fruits	Damage of paddies due to flood. Pests and diseases are decreasing the production of paddy, maize, chickpeas, and peas. Papaya and banana (malbhog) trees are producing less fruit due to increased insect attack.	Diversifying agriculture crops (vegetables) (supports from NGOs and DADO)	Use of hybrid seeds (creating dependency) Use of chemical fertilizers and pesticides (increase of new pests and diseases – not sure whether is the result of climate change?)	Farmers are experimenting with new crops and oil-seeds. Paddy has been introduced only two decades ago. Farmers are cultivating new varieties (local and hybrid) of crops and oil-seeds.
	People	Human deaths and health problems due to epidemic. Displacement of people due to destruction of houses due to floods and fires.	Volunteer groups to support during disasters – NGOs are supporting for the formation and providing trainings		Vaccination for encephalitis Community members support work together and support each other with re-construction of destroyed houses. Volunteers groups formed for search and rescue operation during disaster.
	Irrigation	Irrigation water comes from shallow tube wells (powered by electricity), those are not affected by floods (irrigation channels infrastructure missing)	50% subsidy on electricity charge – many families have own micro irrigation system (assumption)		Removal of shallow tube wells when there is flood.
	Income	Income is affected due to loss of crops, destruction of houses, health problems		Seasonal migration to India for work (abroad). Selling of firewood from forests.	Daily wage labour in the nearby markets (Gulariya and Nepalgunj) Livestock rearing particularly pig (diversifying IGAs)

Livelihood Workbook – analysis process (only partly)

- Listing assets as identified from discussion in the community (no specific tool used).
- Effect of hazards livelihood collected from workbook on hazards and other sources.

Limitations and comments:

- Don't be focused only on assets that heavily affected by the hazards. Write down also assets that people have or developed good coping strategy for. Such as irrigation not affected by flood, as they are irrigating with shallow wells and thread pumps (guess) could be removed in case of flood.
- Information about indigenous coping strategies not collected. Need for more in depth discussion with focus on those.
- Certain hazards such as *insect pests* were not mentioned between the hazards. However, they have effect on the assets.

Step Three: Hazard Analysis

Context:

Hazards have serious impacts on people's livelihoods and well-being. Hazards can include fires, road accidents, floods, wildlife intrusion etc. When we discuss hazards in the context of climate change, we are referring to both shocks (rapid onset) such as floods or tropical storms, and stresses (slow onset) such as changing rainfall patterns resulting in drought. Climate change is likely to alter the severity, and frequency of some hazards.

Purpose of this Step:

The purpose of this step is twofold; firstly to gather sufficient information both from the community and official records of changing hazards (see Appendix 1 for Key Climate Resources to identify the nature of past and present hazards). The second objective is to assess the level of preparedness and planning for hazards in the community and identify current coping strategies.

Guiding Questions

- Which hazards does the community face and who is exposed? What level of importance do different community members place on each hazard?
- Which groups/livelihoods/locations are most exposed to hazards? Both in terms of slow and rapid onset.
- Which strategies is the community using to secure their livelihoods against the impacts of hazards? Are these strategies erosive or coping? How will you decide this as there is numerous criteria– i.e. long-term implication of strategies, impact for next generation, soil fertility, community cohesion? Need for broader discussion, secondary data review and evidence.
- Are local authorities mapping and monitoring changing hazards and if so is the community involved in this?
- Are early warning systems in place at the national, sub national and local level and if so, are they effective?
- Is the government engaged in implementing disaster risk reduction activities/strategies?
- Do people in the community have access to secure living conditions?

Tools to consider in this Step: See Appendix 3

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	✓ Historical Timeline	✓ Focus Group Discussions	✓ Survey
Resource Map	✓ Seasonal Timeline	✓ Hazard Mapping	Secondary Resources
Transect Walk	✓ Trend Analysis	Livelihoods Analysis	
		Key Person Interview	
		Matrix Scoring	
		Market Mapping	
		Pair Wise Ranking	
		Spider Web	
		Venn Diagram	
		✓ Vulnerability Ranking	
		✓	

Workbook Two - Hazard Analysis

How to Use:

Gather the information from the hazard mapping exercises done with the different socio-economic groups (wager labourers, farmers etc.) and a women only group, and add to this workbook. Additional tools such as the Seasonal Calendar and the Historical Timeline will help you to fill in the columns on Perceived Change. **The information from this Perceived Changes column can then feed into Workbook 4 in order to triangulate the communities' perception of changes in the climate with official records.**

Hazard	Details	When	Perceived Change (past 30 years)	Impact of Hazard		Current Strategies	
E.g. Drought	Surface water runs low in dry season (Nov-May) and longer periods between rainfalls during the rainy season	Dry season – Nov to May.	Greater return rate, longer periods in between rainfall	Failed crops	163 HH	Refraining from paying school fees and rationing food.	Irrigation – shallow tube wells and irrigation canal improvement
E.g. Wildlife intrusion	Wild animals intrude into the community habitat to feed and destroy crops, attack livestock and can cause harm to humans.	Throughout the year	n/a	Crops destroyed	1754 HH	Not moving around the village after dark, not diversifying or intensifying crops	Installing electric fences

Hazard Workbook example from Nepal:

Hazard	Details	Why? When?	Observed Change (past 30 years)*	Impact of Hazard**		Current Strategies***	
						Erosive	Coping
Flood	Rainfall in the upstream water level rise in the river. There is an entry point of flood in the community. There are 10 families living in the flood entry point.	2040/03 First week (June, July, August & September are the months for	The frequency of flood has been increasing in recent years. Community has not perceived change in raining season but there is variation in the rainfall (irregular but with high intensity)	Crop destroyed Houses inundation Utensils losses		Seasonal migration to India for work. Firewood selling from forests	Raising the plinth level of houses. Daily wage labour in the nearby markets (Gulariya and Nepalgunj) Livestock rearing particularly pig (diversifying IGAs) Communal work for re-constructing damaged houses. Built extra second floor for storing grains and staying during inundation. Construction of 150 meter Bio-dyke. Early Warning System has been established for the flood (Boat, life jackets, siren, hand mikes and emergency telephone lists are made available in the community)
		2052/04/28		12 Sheep 15 goats 13 cow 5 buffalo >100 pigs Crop damaged	12-13 HHs destroyed		
		2063/05/11		Crop damaged	3 houses destroyed Wall destroyed of almost all houses		
		2064/04/10		Crop damaged			
Epidemic	This is as a result of flood. The dead and decayed livestock caused spreading of diseases like diarrhoea and encephalitis. (increased growth of mosquitoes and flies in the water logged area)	2052/05	Community perceived changes in months for epidemic. The potential months for epidemic have been shifted from (mid of April/mid of September to mid of July/mid of October)		1 died and 1 mental trauma due to encephalitis		Vaccination for encephalitis

	flies in the water logged area)						
Wind Storm	Strong dry wind	2056/02		Roof damaged of school and 15 houses (soil roof)			
Fire	Spreading of fire from cooking stoves to the thatched roof.	2055/09			1 kitchen roof		

Hazard workbook – analysis process

- Listing of hazards identified from community (Timeline)
- Listing of impact of hazards (livelihood damage, HH impacted) according to specific hazard (floods, epidemics, wind storm) from different years (Timeline)
- Noting general season for hazards (floods) (Seasonal calendar - hazards)
- Noting place of entrance of flood into the village (hazard map) into details
- Identifying coping strategies and dividing them into *erosive* and *non-erosive* (timeline, cause and effect analysis)
- Observed changes in last 30 years (Seasonal calendar from different periods) for floods and epidemics.

Limitations and comments:

- Data are relevant only for small part of the community; based on representation of participants from the community.
- Because group was divided in two and did not communicate with each other during the assessment about the results. Details were collected about different hazards in different work-sheets (Floods, epidemics, Wind and fire in one; Floods, cold wave, fog in the other) -> difficulties in compiling information
- Not all facilitators that participated in collection of data with the participatory tools are participating in analysis. Risk for misinterpretation and information loss -> Facilitators should summarize information from different tools and present it to each other, before starting with the analysis. It might be also helpful to make regular breaks when performing the assessment, after finishing certain tools. Reflect, summarized and decide what information should be collected with help of tools.

Step Four: Analysis of Policies and Institutions

Context:

Policies and institutions influence structures which can promote resilience. They can also increase marginalisation and risk through their role in determining access to resources and entitlements deemed necessary for adapting to and withstand the impacts of climate changes. In order to promote resilience it is necessary to carry out an analysis of the policies and institutions which impact on the lives of community members.

Purpose of this Step:

The purpose of this section is to build up an analysis of the policies and institutions which impact on the community's access to resources and assets that define their livelihoods. This will identifying barriers which may be able to be removed as well as strengthening existing support structure. It is important to answer the guiding questions below for the various sectors that you work in and which are critical for poverty reduction in the community (i.e. disaster risk reduction, climate change, agriculture, social welfare etc.).

Guiding Questions:

- What policies exist which promote poverty reduction at national and local levels. Are there policy reforms which take climate change into account in relation existing disaster risk management approaches?
- Is current legislation, institutions and policies thought to be effective? If so, why? If not, what are the blockages?
- What are the dominant values which shape the policies around poverty reduction for your sector or issue (i.e. climate and disaster risk management) in the country?
- Who are the key actors and institutions spearheading or championing policy and policy reform? (There could be a range of actors: NGOs, social movements or mass associations (trade unions, faith groups, education groups, etc. networks or communities of practice, traditional authorities, ministries, state institutions, political parties, donors, private sector).
- Who are the key donors/funders of these initiatives?
- To what extent are poverty reduction and the sector (i.e. climate change adaptation and disaster risk management) institutions and programming integrated? How is this integration happening, through what policy or programme? Who is leading this process and why? How are they received by different stakeholders?
- Who benefits from the sector activities? Are some groups/people isolated or marginalized?
- How do people and institutions become enrolled into the sector related networks?
- Where is the mainstream network strong and weak?
- What new coalitions might form outside the mainstream? And how can spaces be opened up ?

Tools to consider in this Step: See Appendix 3

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	Historical Timeline	✓ Focus Group Discussions	Survey
Resource Map	Seasonal Timeline	Hazard Mapping	✓ Secondary Resources
Transect Walk	Trend Analysis	Livelihoods Analysis	
		Key Person Interview	
		Matrix Scoring	
		Market Mapping	
		Pair Wise Ranking	
		Spider Web	
		✓ Venn Diagram	
		Vulnerability Ranking	

Workbook Three - Policy and Institutional Analysis

Actors	Types of Organisations	Policy Focused Roles& Responsibilities	Impacts on livelihoods	Opportunities
Government	-National Ministries -Local Administrative authorities	DRR National Policy District Level DRR budget and policy architecture	Policies are not enforced resulting in little benefit for safer communities -Limited access to Forests as	Work w Local Dev Authorities to map risks and embed DRR strategies Work w Districts to influence budgetary process for DRR
International Donors				
Academic Research Institutions				
Scientists and Technologists				
District				
Communications and Media Professionals				
Private Sector				
Civil Society Groups				

Policy and Institutional Analysis Workbook: example from Nepal

Rank	Actors	Types of Organisations	Policy Focused Roles& Responsibilities	Impacts on livelihoods	Opportunities
1	Community Forestry User groups	community group	• Sustainable management of forests along with meeting daily need of people related to forest. *(the policy focus to support the community – forest resource mobilization policy)*	• Provide loan for youth who go to aboard. • income of groups utilize in public work • women capacity build up • livestock farming • income sources (green vegetable, herbal, thread) • forest protection (natural)	• It has gained trust of people. • Possesses good amount of fund. • Involvement of women
2	Youth Club	CBO	• response to communities • communication • awareness	• Increased communal work • Aid to increase awareness particularly on WASH • Search and Rescue operation during disaster	• Community facilitation • youth sport's exposure
3	NRCS, district chapter	NGO	• response (collecting information of disaster, response for relief) • temporary shelter • non-food / food items support • capacity building • advocacy for DM • policy follow (DMC)	• Providing relief and response to disaster affected communities. • Promoting institutional arrangements at local level like facilitating formation of community based disaster preparedness (CBDP)	• Good coordination with government agencies and I/NGOs. • Have role in policy influencing at all levels (village, district and national) regarding DM
3	Nepal Army	Government	• Provide security • Support immediate rescue	• safety & security	• their role & responsibilities can be defined on the disaster management plan of district (their participation on disaster management)
3	Nepal Police	Government	• Provide security • Support immediate rescue	• safety & security	
4	Guleriya Municipality	Local government	• making policies (MDP, DMP) • implementation • ward level : DRMC formation	• physical infrastructure developed (Road, electricity) • Human capacity • social security & facilities	• increase in linkage • program development • promotion on social inclusion
5	KARITAS (NGO)	NGO	• group agriculture farming	• income increase	• linkage with district

				• agriculture employment • awareness on farming (*but not covered all HHs of that community*)	agriculture office & other I/NGOs for agriculture development plan
6	School	Social institution	• formal education for children • shelter during flood	•	•
7	District Development Committee	Local government	• making policies (DMP, DDRC) • implementation • Village development committee	• physical infrastructure developed (Road, electricity)	• increase in linkage • program development • development network establish • development information (data, other resources)
8	Tharu Mahile Utthan Kendra (women organization)	NGO (women organization)	• women awareness • women for IG activities (goat support)	• income • food, nutrition • child education (source) • women's property (*pewa*)	• community livestock • training & exposure • women empowerment
9	Flood Gauging Station	Local chapter of DHM	• provide information about water level of river	• lives & assets saving	• wide information system can be established, & linkages developed
10	Agro-vet	Private sector		• agriculture production (Income)	• market
11	District Agriculture office	Government office	• making policies • implementation • mini kit distribution (seed) • technical assistance	• income • different agriculture production •	• off-season vegetable production • vegetable & food market • food & nutrition
12	Private Medical clinic	Private sector			
13	District Hospital	Government office	• making policies • implementation	• health awareness & practices	• healthy community
	District Livestock office	Government office	• making policies • implementation • technical assistance for new breed of pig • meat production • poultry	• income • child education • nutrition • employment • saving	• food & nutrition • meat processing & packaging (market) • community livestock
14	BASE (NGO)	NGO	• women literacy class • awareness on women	• women empowerment	• women's participation on community development

Step Five: Uncover Climate Information from Historical Records and Community Perceptions

Context:

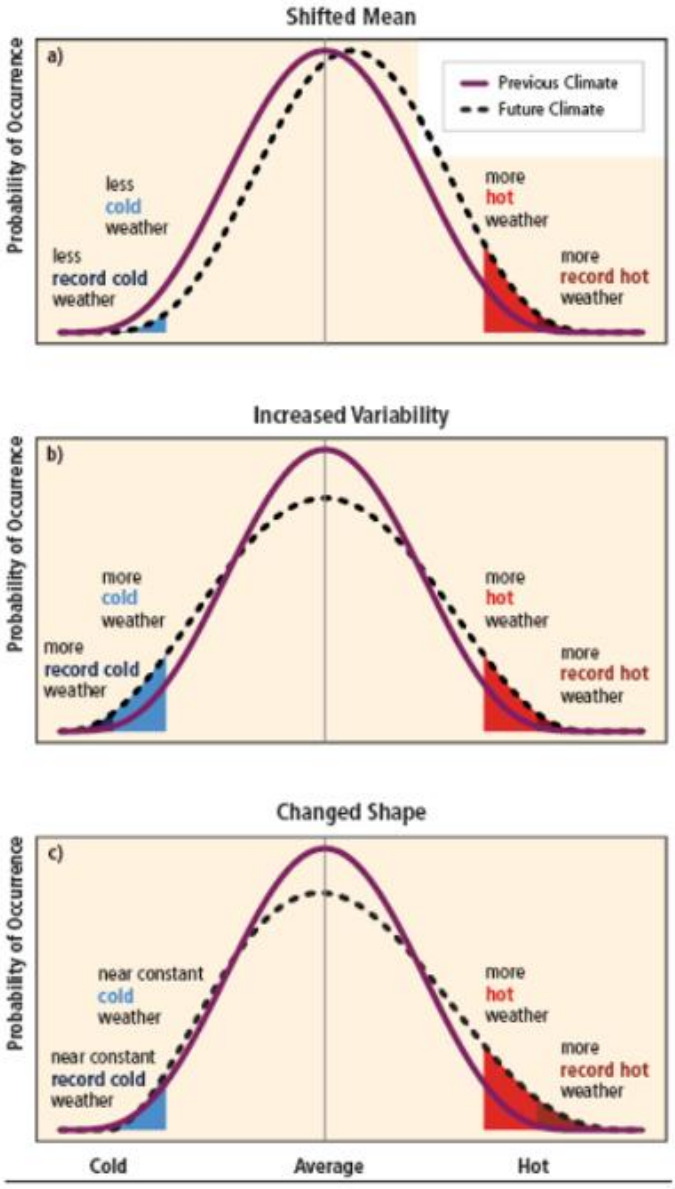
Climate change refers to a "statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use" (IPCC, 2007).

All dimensions of climate, such as annual rainfall, maximum seasonal or daytime temperature, will vary from the mean climate, leading to 'climate variability', which can be visualised as a series of peaks and troughs around the average, as illustrated in Figure 3 below. This reflects experience: we have an expectation of what the 'normal' weather conditions will be, but do not expect every day to be the same.

'Climate change' means that the average is changing. In addition, the variability and timings of weather dimensions, such as rainfall and temperature are changing. We can only identify changes in the average by comparing an extended period to another. For this reason climate projections are normally far in the future – the average weather conditions in 2030 are expected to be different to today, for example. Unfortunately, as well as referring to conditions far in the future, climate models are also very uncertain: they give a range of possible values for future temperature and rainfall. In many cases, there is no agreement between models as to whether the future rainfall in a particular season will be more or less than today. For these reasons, climate change predictions are difficult to incorporate into current programming.

However, we need to identify what the climate changes are and use these changes as a way to inform our current programming. Gathering historical climate data from meteorological weather stations as well as from communities allows us to create a 'best guess' of what the conditions will be like over the period of our programmes.

Figure 3: The effect of changes in temperature distribution on extremes.



Different changes of temperature distributions between present and future climate and their effects on extreme values of the distributions: (a) Effects of a simple shift of the entire distribution towards a

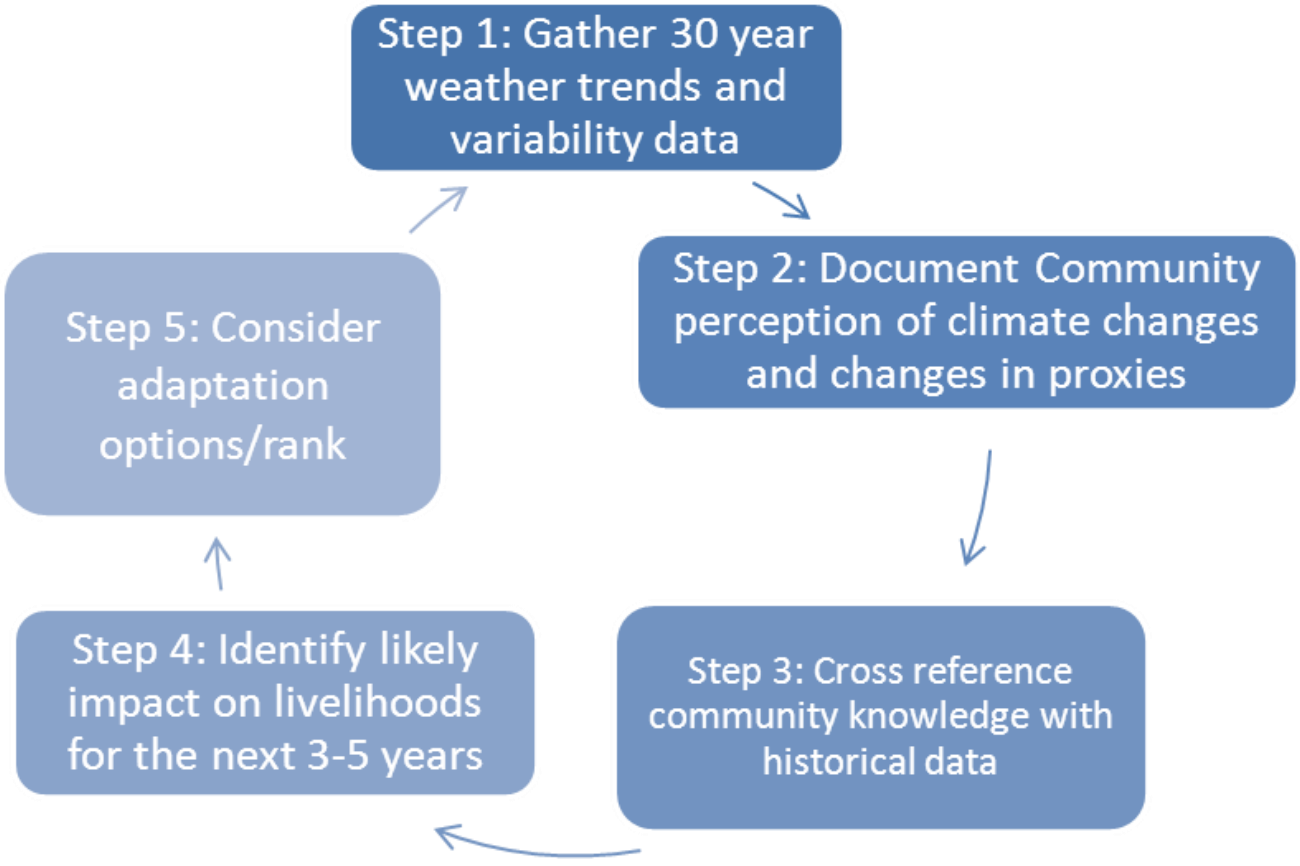
warmer climate; (b) effects of an increase in temperature variability with no shift of the mean; (c) effects of an altered shape of the distribution, in this example a change in asymmetry towards the hotter part of the distribution. (Source: IPCC SREX Summary for Policy Makers, 2011)

What we can do is make use of the current 'best guess' to make sure that livelihoods are able to cope with the most likely conditions over the next few years. If we have an understanding of the historical climate data from an extended period we can understand trends, variability and shifts in weather patterns and use this data to guide programme design with local communities.

Purpose of this Step:

In this step we will access meteorological climate information from the past 30 years and cross reference this with community perceptions of changes in hazards and climate proxies (plants and animals). At times, it may be necessary to triangulate meteorological data, community perceptions with another source. For example, in Nepal where the typography is so varied and there are insufficient meteorological weather stations to cover each village with accuracy, a third source, such as dendrochronology (study of tree rings), can be used to triangulate the data to ensure reliability. This triangulated climate data can be used to enhance the community's confidence in identifying scenarios of future climate and making decisions to secure their livelihoods. The outcome will be climate data which allows people to assess the sensitivity of their livelihoods to potential future weather conditions and create action plans to successfully adapt to changes. It will also inform them of how to collect information on the changing climate and make linkages with meteorologists for climate data and seasonal forecasts. Figure 4 below describes the steps needed to use climate data to inform programme design. It will be important to repeat these steps throughout a programme period as climate data will be improving and community perceptions may improve if they decide to collect weather data locally.

Figure 4: Steps needed to integrate climate data into programme design



Guiding Questions:

- Do you have a relationship with the meteorological station which services the community? Where is the nearest meteorological office to the
  Does the coverage expand to the local area and if so are they monitoring and analysing climate data?
- Do local institutions and the local community have adequate access to current and future weather, seasonal forecast and climate information?
- What is the average, minimum and maximum temperature and rainfall for the region and/or ecological zone as observed by the local community and recorded by meteorological stations?
- What changes in weather patterns have been observed (i.e. shift in timing of rainfall and amount of rainfall, animal and plant proxies):

a) Historically (over the last 30 years if sufficient data is available)

b) Seasonally – dry and rainy, timing (over 3 months to a year)

c) On decadal and multiyear cycles such as El Niño Southern Oscillation (see key concepts above).

d) Intensity of temperature and rainfall

e) Extreme weather events (heat waves, intense rainfall etc.)

- Do community perceptions broadly agree with the scientific data? Do the community perceive climate trends, variability, intensity and shifting weather patterns? Which weather events are remembered by the community as having the most significant impact on their livelihoods? Are new pests and diseases arising from a change in temperatures and rainfall?

Tools to consider in this Step: See Appendix 3

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	✓ Historical Timeline	✓ Focus Group Discussions	Survey
Resource Map	✓ Seasonal Timeline	Hazard Mapping	Secondary Resources
Transect Walk	✓ Trend Analysis	Livelihoods Analysis	
		Key Person Interview	
		Matrix Scoring	
		Pair Wise Ranking	
		Spider Web	
		Venn Diagram	
		Vulnerability Ranking	

Workbook Four: Uncovering Climate Data

How to Use:

Hazard mapping, seasonal and historical timelines were collected during Step 3 and noted in Workbook 2. These indicate the community's perception of changes in hazards and climate, and can be recorded in the first column of Workbook 4 to represent Perceived Climate. In addition to this information, more detailed observations of animal and plant behaviours should be noted.

The Recorded Historical column is used to collect the 30 year historical weather information from the relevant meteorological stations (see Appendix 1 for more details). The meteorological office should also have information on the ENSO or other long term cycle, which should then be recorded in the table (the communities will also have a perception of the natural climate cycles that they live with).

Next, cross reference the community knowledge with the historical trends and add to Workbook 3. This should enable an understanding to be gained of the trend, variability and shift in weather patterns for the next few years, and the significance of a changing climate. Once the climate data is established, it is important to discuss it with the community and establish the impacts on people's livelihoods. Once again we need to recognise that climate change is impacting livelihoods and socio-economic groups in different ways. It is important to note that this climate data is the 'best guess' of the climate as it is changing.

Add to Workbook 5

Meteorological Dimension	Perceptions of Climate and Changes in Weather Patterns	Plant/Animal Proxies	Recorded Historical - trend and variability over 30 years where data is available	Cross Referenced max, min and average values. Shifts in timing and intensity of weather dimensions	Likely Implications of climate trend and variability for communities
Temp					
Rainfall					
Extreme events					
Drought					
Floods					
Cyclone					
Decadal or multi year cycle (e.g. ENSO) – depending on where you are					

Note: You will need to assemble a range of community members to gather information for this workbook (such as elders, agriculturalists, traditional knowledge bearers and different socio-economic groups). This is to ensure that different perspectives of the climate changes are gathered and the impact it is currently having for different members of the community.

Secondary Resources:

Seasonal forecasting is an important tool as climate change means that conditions become less predictable and traditional forecasting techniques are likely to become less reliable. Securing access to seasonal forecasting that is meaningful for a particular community can be a challenge, and require mediation between climate scientists and community members (for example, to ensure the forecast covers a particular locality, is produced at a time that is relevant to local planting decisions, or in the form of a recommended mix of crops for a particular season).

Data for seasonal forecasting usually covers a three month period. It can be obtained from the local meteorological department or from regional Climate Outlook Forums (these are active in several parts of the world and routinely provide real-time regional climate outlook products, such as seasonal forecasts). Forums are active in the different regions, see Key Climate Resources in Appendix One.

Uncovering Climate Data Workbook: example from Nepal

Meteorological Dimension	Observed 30 year Trend & Variability	Plant/Animal Proxies	Recorded Historical - trend and variability over 10 years	What are the likely max, min and average value over the next 3-5 years	Implications of trend and variability for communities
Temp	There is no change in summer months. But the temperature is increasing. Days with hot waves are also increasing. The change in winter months have not observed but the temperature has increased (less cold).	Community has perceived the appearance of new pests in their crops. For example farmers are observing 'Green fly' as a new pest. Farmers have abandoned mustard farming significantly due to increase attack of green fly (not sure – whether the reason is temperature rising)	Not made available – need to access		Hot waves are increasing these days. This negatively affects people to do their daily chores particularly in the agriculture field during day times. Plant wilting due to excess heat is increasing, which is demanding regular irrigation. Winter fog has been decreased nowadays. (earlier it used to go for one month now it remains only for 6-15 days). This is positive implication for winter crops.
Rainfall	Rainy season in summer has decreased by one month (earlier May/June to September/October) (now June/July to September/October). The rain is more irregular and the intensity has increased. Winter rain has decreased significantly; it is more irregular				The frequency of floods is increasing due to variation in rainfall. The unpredictable rainfall is affecting the crop production for those farmers whose land is rain-fed. Decrease in winter rain is damaging winter crops creating more supply of irrigation water from under-ground source (STWs).

	and unpredictable now.				
Drought	Did not feel any change (Irrigation facility is abundant)				
Floods	The frequency of flood is increasing; it is connected with increase in intensity of rainfall.				The losses of crop due to flood is now an annual phenomena.
Hail Stone	Community perceived the hailstone fall has also decreased over the 30 year period.				The crop failure due to hailstone has been decreased these days. The events of roof damage also decreased significantly.

Limitations and comments:

- Not all implications meteorological trends have been mentioned by the community. There is a need to verify assumptions made.
- Need to record narrative on each variable.

Step Six: Adaptation Options to Current Trends, Variability and Changing Patterns

Context: It is critical to work with the uncertainty of our current climate in order for people to make decisions on their livelihood options and to choose a strategy that promotes resilient outcomes. Working with uncertainty by turning to the past 30 years to gain more information of how meteorological dimensions are changing and affecting livelihood assets can help people make decisions on how to adapt to the changes now and into the next five years. The information and adaptation options should be monitored and reviewed along the programme review periods with communities members.

Purpose of this Step:

The objective of this Step is to identify adaptation options in response to the impact that changing meteorological dimensions (rain, temperature, flood etc.) may have on assets of different groups of the community. In this way, community members are able to work with uncertainty over the next 3- 5 year period and make decisions on their livelihood strategies that take into account the changing climate. These adaptation options identified can be used as high level priorities of programme design and project implementation.

Working with the variability, trends and shifting patterns for different meteorological dimensions that are relevant to the community allows us to plan for uncertainty and to guide development interventions, innovate and work with people's assets to maximise their livelihood options for resilient outcomes. It also allows us to consider which governance policies, process and institutions to link with and build upon.

Guiding Questions:

How are meteorological dimensions, such as rainfall and temperature, variability and frequency impacting the community?

Which hazards are of greater concern and have an impact on people's lives? What is the maximum, average and minimum value of the meteorological dimension?

How are these climate trends, variability and shifts in weather patterns impacting on livelihoods now and the likely impact of these assets in short and long-term? How are these differentiated across the community?

Will current livelihoods strategies allow the community to cope with or respond to these trends and changes?

Which adaptive strategies are implemented and contribute to resilience?

In which ways might coping strategies have to be adapted so that they are not erosive and are able to secure livelihoods against changes now and in the medium term?

Do any opportunities exist to take advantage of positive impacts of climate change on livelihoods?

Which adaptation options have been highlighted through the National Adaptation Programme of Action (NAPA) for your country? Do your findings from the community have overlaps and links with the prioritised activities under the NAPA or the Local Adaptation Plans of Action (LAPA)?

Which sector experts can inform you of latest adaptation options to support livelihoods assets in relation to upcoming changes (i.e. agriculture extension, water management experts, government inputs, private sector, research organisations)?

Tools to consider in this Step: See Appendix 3

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	Historical Timeline	✓ Focus Group Discussions	Survey
Resource Map	Seasonal Timeline	Hazard Mapping	Secondary Resources
Transect Walk	Trend Analysis	Livelihoods Analysis	
		Key Person Interview	
		Matrix Scoring	
		Market Mapping	
		Pair Wise Ranking	
		Spider Web	
		Venn Diagram	
		Vulnerability Ranking	

Workbook Five: Developing Adaptation Options for the next 3-5 years

Meteorological Dimension	What are the max, min and average value of dimension? What changes in timing and intensity?	Implication on livelihoods Assets for: max, min and average for livelihood Group A	Potential Adaptation Options for Group A
e.g. Temperature			
e.g. Rainfall			
Extreme events			
e.g. Drought			
e.g. Floods			
e.g. Cyclone			
Decadal or multi year cycle (e.g. ENSO)–depending on where you are			

Note: You will need to create a workbook for each livelihood group in order to identify the different adaptation options for each.

Step Seven: Information Synthesis

Context:

Once you have completed Steps 1 – 6, it is important to bring all the information together so that you can create a vulnerability and capacity profile for the community. This profile highlights areas of concern and potential innovations to build resilience. It is important to share all the information gathered on how climate trends, hazards and weather patterns will change over time and the likely impact on livelihoods. This will build the local community's understanding of climate and impacts which will enable them to take calculated risks and invest in appropriate adaptation activities. Similarly, sharing information from the policy and institutional analysis will help to identify opportunities, linkages and constraints to potential development activities.

Purpose of this Step:

The objective of this Step is to gather all of the data and organise it in a manner which allows for synthesis, pulling out of findings and next steps.

Guiding Questions:

- What does the secondary information tell you about the community and district that you are working with?
- What are the findings from the livelihoods analysis (Step 2) and how does exposure to hazards impact the different livelihoods and socio-economic groups in the community (Step 3)?
- What are the findings from community perceptions of climate change (Step 5)? How does climate change impact their livelihoods? What challenges did you face while gathering this information?
- How are different community members coping and adapting to these climate changes and other risks (Step 5)?
- What does meteorological data tell you about climate change in terms of intensity, frequency and changing weather patterns? Have you been able to access this information, build partnership with the meteorological department and share it back with community members and relevant government officials (Step 5)?
- What adaptation options are possible based on changing climate and livelihood analysis from different members of the community (Step 6)?
- What are the key policies and institutions that can support poverty reduction and development for the community (Step 3)? Is the community linked to existing climate change processes, such as the Local Adaptation Plan of Action (LAPA)? Which key organisations or people do you need to build connections and partnerships with? What opportunities exist to influence decision making of policies (i.e. budget allocation for disaster risk reduction at the District Level)?
- Which policy processes are difficult to have access to decision making and to influence (i.e. land reform)?
- What are the key findings from discussion with community members in terms of potential adaptation options and intervention? What gaps exist? (Step 5 and 6).
- Which specialists do you need to consult to gain further information (i.e. natural resource management specialist etc.) (Step 6)?
- How does this information differ from past vulnerability and capacity assessments? And who should you share the findings with?

How to Write a V2R Report for Programme Design:

Consider the guiding questions in this Step and use the detailed information gathered from the participatory exercises and compiled in workbooks to create a narrative report. Include any quantitative data where appropriate and ensure you cite qualitative data. A synthesis of the information can be gathered in a report with the following headings:

1) Issue/ Challenge – background information and secondary source findings

2) Methods used to gather information and community sites and members

3) Who is affected – Livelihood Groups and Community members

4) Livelihood Assets and Coping/Adaptation Mechanisms

5) Hazard profile, ranking and strategies

6) Policy and Institution mapping for key sectors and opportunities for influence

7) Climate Change Data (trend, variability, intensity and changes in patterns)

8) Climate Data implication for livelihoods

9) Adaptation Options identified with the community

10) Who to work with

11) What information is still needed

12) Key findings of potential key adaptation options and linkages to build

13) Next Steps

With a synthesis of the above data, key headlines for a development programme can be updated or developed. Furthermore, gaps and challenges identified when conducting the holistic vulnerability and capacity assessment can be highlighted and recommendations made on how to improve data collection and analysis. The report will provide key findings and next steps which programme managers and project officers will need to take up.

This process is time intensive, however offers an opportunity to facilitate bottom up development in relation to climate change and seeks to promote resilience. Whether the investment of such an activity is cost effective needs to be measure over the short, medium and long term as resilience outcomes are not just about the wellbeing of a community during the project intervention, but also the community's ability to adapt to changing risk over the long term. Team Leaders, and Head of Programming, government officials need to consider how to fund the measurement of holistic development interventions over the long term.

Programme Design Report: example from Nepal

This report was developed out of analysis of the information collected throughout the various steps. There was no opportunity to gather meteorological data, nor to do a synthesis and report back and fills gaps with stakeholders. As a result, adaptation options could not be identified and there is a need to continue this process in order to have a robust analysis, synthesis and key headlines for programme design. However, the report below provides an indication of what a report for programming design might look like.

Community Site: Samjhana Tole, Bardiya, Nepal
Group I and II Team Members: Mahesh Gautam - Group Leader Lok Narayan Pokharel, Yuwan Malakar, Gehendra Gurung, Dev D. Bhatta, Sujan Kandel, Yakub Kocanda, Balram Luitel, Anil Rana, Rudra Neupane, Suraj Acharya , Bimala Khanal

1) Issue/ Challenge

Hazard: Flooding – Babai River is near of the village, the river belt is rising. Every year, during the rainy season;

Livelihood: Insecure livelihood: sustainable income sources, limited land, land of improved varieties of crops, inputs.

Future uncertainty: temperature is increasing & variation in rain fall. Water stress is rising for irrigation

Governance: the presence of government organization is found little (they are not supporting as comparing to their expectation). Some I/NGO are working there but the coverage is limited HHs, and short period (not covering all the HHs).

2) Methods used to gather information and community sites and members

- Finalized some appropriate participatory tools

- Class room preparation on the proposed tools
- Group divided: 2 small groups, different groups performed different tools separately
- Visit the community
- Gather information by using different tools:

The tools used were:

a) Historical Timeline,

b) Cause and effects,

c) Seasonal calendars (season, hazard, crop and animal/plant),

d) Social and resource map,

e) Venn diagram,

f) Focus Group Discussion,

G) Key Informant Interviews,

h) Direct Observations

The data was analysed with help of V2R Guidance Note Workbooks. See above.

Issue: community people were divided into 2 groups, the information which were found from those 2 groups was not shared with in groups, not verified with others. When compiling the information, we missed some information.

3) Who is affected – Livelihood Groups and community members

- Agriculture is the main occupation from which people make their living. Therefore, farmers group are affected largely in the community.

4) Livelihood Assets and Coping Mechanisms

- Crops, houses, transport
- generating options are the assets that are mainly affected by the prevailing hazards.
- Community is observing temperature rise that is demanding more water for irrigation during summer season.
- Variation in rainfall is creating drought even in monsoon. Use of ground water for irrigation is prevalent, which may have long term impact on ground water source.
- Flood brings top soil from the upstream forest that provides opportunity for increasing production.
- Due to increase in flood events, river bed is rising and is also widening at the same time.
- House are mainly made up of bamboo wall and thatched roof, which are sensitive to flood, fire and windstorm. Increase in frequency of floods Losses of crops are high due to increasing occurrence of hazards particularly
- New pests and diseases have been observed that are harming the harvest.
- Prevailing hazards and uncertainties put pressure on overall income generation.
- Government has provided land to people for cultivation (3333.33 sq. meter for a family). People can only meet 6 months food supply from their land.
- There are few coping strategies seen in the community like construction of bio-dyke alongside the river, medicinal plants cultivation in the community forests, and pre-positioning of rescue equipment. These strategies seem to be non-erosive.
- But there are other erosive strategies as well such as, selling firewood from the forest (could not determine whether from excess wood), going for seasonal work in India and even to abroad.

5) Hazard profile and strategies Hazard Ranking

- Flood, Epidemic, Wind Storm and Fire were the major hazards identified during hazard listing and historical timeline. Though people have mentioned fog, drought and hailstone while doing seasonal calendars.
- Flood is the top prioritized hazard whereas epidemic was identified second. These two hazards are interlinked. The flood was followed by epidemic due to decay of dead livestock.
- Crop damage is the common effect of prevailing hazards.
- There were livestock claimed by flood.

6) Governance mapping for each key sector and opportunities

- There are number of stakeholders identified in the communities.
- Community has identified CFUG as the most helpful and close to the community.
- Civil Society Organizations (CSOs) are comparatively close to the community and are providing support.
- But people are not receiving support from government agencies as per their expectation. Evidently, people ranked government agencies only after CSOs.
- CSOs role particularly NGOs are also limited and focused on few families. They could not reach all the affected communities.
- There are two separate community forests for male and female each. The CFUG also provides credit to the youths who are going abroad for work. This seems immediate relief but could be erosive in the long run.

7) Climate Change Trends (past and projected)

- People have observed changes in the climate that have both positive and negative implications on their livelihood.
- Temperature is rising in the winter that decreasing the occurrence of winter fog. Therefore the damage due to winter fog is also very less in the community.
- Community has perceived the appearance of new pests in their crops. For example farmers are observing 'Green fly' as a new pest. Farmers have
- abandoned mustard farming significantly due to increase attack of green fly (not sure whether a climate change or not).
- There is variation in rainfall. There is not significant shift in raining months but people are facing irregular and high intensity rain. They are not getting rain when they need but it rains when they don't. It was reported that heavy rain damaged their ready-to-harvest paddy.
- Irregular rain is putting pressure on ground water. People are now using shallow tube wells for irrigation purpose (the usage is increasing due to irregularities in the rain)
- Frequency of floods is also increasing due to increase in intensity of rain (short time more rain).

8) Climate data implication for livelihoods

It was difficult to gather information on climate trend. The recorded data were also not available. Climate trend could not be extrapolated based on available data and so the implication for livelihoods needed strengthening.

9) Scenario development and Possible Interventions

- Livelihood diversification (off farm activities- carpentry, wiring, mobile repairing etc., small cottage industries) – skill development (agriculture/ livestock technicians training to youth to discourage out migration)
- Livestock improvement (pig sheds – pigs are roaming)
- Promotion of cooperatives (saving and credit at the local level – to access easy financial support)
- Awareness raising on future implication of climate change in livelihoods
- Strengthening linkage with government agencies (wild and broad).
- Promotion of plantation alongside the river banks.
- Strengthening available institutions (CBDP, CFUG, Youth clubs) and capacity building regarding climate change and future uncertainties.

10) Who to work with

- CSOs seem close to community. But their presence is limited.
- Government role is crucial for uptake the initiatives and mainstreaming into development.

11) What information is still needed

To analyse.

12) Key findings of linkages and potential key adaptation options and strategies

To analyse.

13) Next Step

To analyse and recommend.

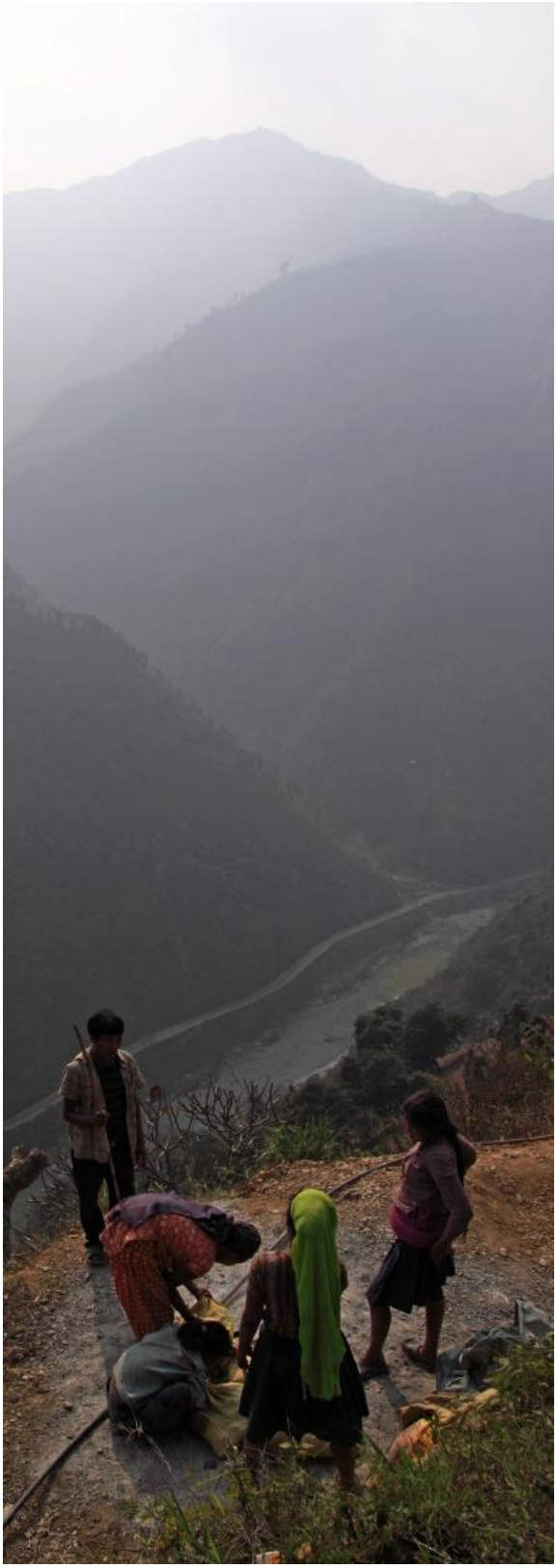
Conclusion

People are facing a range of changing risks. These risks are undermining development gains and increasing the vulnerability of marginalised people across the globe. The complex and dynamic nature of poverty requires a holistic vulnerability and capacity assessment for programme design.

Gathering and analysing information with community members in terms of their livelihoods, hazards they face and the governance context in which they live is critical. Recognising that the climate is changing now, requires an understanding of the change in weather patterns, changes in intensity, frequency and mean of climate dimensions. Updating participatory rural appraisal techniques to gather community perceptions of these changes and the impacts on livelihoods and governance systems can allow for informed decision making. Cross referencing community perceptions of climate change, changing hazards and its impacts on livelihoods with meteorological data can increase confidence in identifying appropriate adaptation interventions (both short and long-term). Adaptation interventions should be based community strengths and work with existing governance institutions to promote resilience.

As seen in the case study above (Box 2), adaptation interventions such as seed selection, new animal breeds, irrigation systems, off seasonal and seasonal food production and more can help communities to diversify their livelihoods in relation to the observed and documented changes and risks. Furthermore, understanding the governance context in which people live (mapping policy processes, formal and informal institutions), is essential to build resilience. Working with local, district and national government officials can build adaptive capacity and scale-up best practice from the community level. Understanding the blockages, such as lack of access to information and services) can help to pinpoint which governance institutions require partnership building to promote resilience.

As seen through Practical Action's programming on food security and disaster risk reduction, working in an integrated way across livelihoods, hazards, governance and uncertainty leads to resilience. This V2R Guidance Note offers a step process on how to gather and analyse information for effective programme design. It challenges our traditional way of working and requires an investment. Though we are only beginning to gather evidence on the cost effectiveness of the Vulnerability to Resilience approach, we have already seen increases in people's food security, disaster management plans at the district level reflecting local level risks, safer and diversified livelihoods and more.



We encourage you to comment on this V2R Guidance Note and hope to continue to learn from your experiences of promoting resilience.

Please send comments to the Eldis Community Site on Disaster Risk Reduction and Building Resilience by emailing drr2@community.eldis.org with the topic of V2R Guidance Note Feedback.

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Part Three – Appendices

APPENDIX ONE: KEY CLIMATE RESOURCES

Resource	Use	Description
UNDP Country Profiles	Step 4	Country level climate data profiles put together by Oxford University showing the observed and multi model projections of climate for that country using the IPCC SERES scenarios [3]. These profiles are accompanied by a guide about how to interpret the data and provide useful summary of information of main climate trends (temperature and precipitation) if this information is not easily accessible via local meteorology services. http://country-profiles.geog.ox.ac.uk/
World Bank climate data portal	Step 4	Website information portal which synthesises the information presented in the global climate models used in the IPCC AR4 by country. Useful for accessing summaries of climate projections, historical trends and impacts. http://sdwebx.worldbank.org/climateportal/
NAPAS	Step 6	National adaptation programmes of action (NAPAs) provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage. NAPA's currently exist for 38 LDC's: http://unfccc.int/national_reports/napa/items/2719.php
IPCC Assessment Report 4	Step 4	The Intergovernmental Panel on Climate Change is the leading international body for the assessment of climate change. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide in relation to climate change and publishes summaries of these findings in assessment reports at regular intervals. The most recent one is the IPCC Forth Assessment Report "Climate Change 2007" which provides useful summaries of the impacts of climate change by region and sector: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm A special IPCC Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation due for publication in November 2011.
UNFCCC National Communications	Step 6 + 7	The UNFCCC website pages on adaptation highlight a range of issues that are being addressed by parties under the various convention bodies including the Cancun Adaptation framework and the Nairobi Work Programme on impacts, vulnerability and adaptation to climate change which was developed to help countries improve their understanding of climate impacts and vulnerability and to increase their ability to make informed decisions on how to adapt successfully. The local coping strategies database facilitates the transfer of strategies and knowledge from community to community. http://unfccc.int/adaptation/items/4159.php

[5] SERES are scenarios of potential future anthropogenic climate change, underlying driving forces and response options used by the IPCC.

PRECIS (Hadley Centre Regional Downscaled Model)	**N/A**	PRECIS is a regional climate modelling system developed by the Hadley Centre at the UK Met Office. It was designed with the intention of being provided free as a resource for scientists in developing countries, and has been used to assist the development of climate change scenarios in regions around the world, whilst utilising existing climate expertise and improving domestic capacity http://www.metoffice.gov.uk/precis/ So far Institutes in 105 countries have been trained in developing PRECIS regional climate models. Regional focal points and data distribution centres have been established in: **Africa:** African Centre for Meteorological Application to Development (Niger) www.acmad.ne/en/homepage.htm Climate Systems Analysis Group University of Cape Town (South Africa) www.csag.uct.ac.za IGAD Climate Prediction and Applications Centre (Kenya) www.icpac.net **Asia:** Indian Institute of Tropical Meteorology www.tropmet.res.in Malaysian Meteorological Department www.met.gov.my/index.php?option=com_content&task=view&id=1315&Itemid=1050 Chinese Academy of Agricultural Sciences www.caas.net.cn/engforcaas/index.htm **Central America and the Caribbean** Caribbean Community Climate Change Centre (Belize) www.caribbeanclimate.bz INSMET Precis Caribe (Cuba)http://precis.insmet.cu/eng/Precis-Caribe.htm **South America** Centro de Previsao de Tempo e Estudos Climaticos (Brazil), www.cptec.inpe.br (site in Portuguese) Comision Interdisciplinaria de Medio Ambiente (Argentina) www.cima.fcen.uba.ar
IRI Map room	**Step 4**	The International Research Institute Map room provides detailed analyses of current global and regional climate including seasonal, precipitation and ENSO forecasts as well as historical data. http://iridl.ldeo.columbia.edu/maproom/
FEWS Net (Famine Early warning systems Network)	**Step 1**	FEWS Net provides timely and rigorous early warning and vulnerability information on emerging and evolving food security issues and the impacts on markets and livelihoods. The website contains information on livelihoods zone profiles, weather hazards, household economic assessments/ livelihoods baseline and the food security outlook: http://www.fews.net/Pages/default.aspx?l=en
Regional Climate Outlook forums	**Step 4**	Regional Climate Outlook Forums are active in several parts of the world and routinely provide real-time regional climate outlook products, such as seasonal forecasts. Forums are active in the following regions; Greater Horn of Africa Climate Outlook Forum (GHACOF), Southern Africa Climate Outlook Forum (SARCOF), Climate Outlook Forum West Africa (PRESAO) http://www.acmad.ne/en/climat/previ_saison.htm Western Coast of South America Climate Outlook Forum (WCSACOF) http://www.ciifen-int.org/index.php Forum on Regional Climate Monitoring, Assessment and Prediction for Regional Association II Asia (FOCRAII) http://www.bcc.cma.gov.cn/Website/index.php?WCHID=6&ChannelID=70 Southeast of South America Climate Outlook Forum (SSACOF) Pacific Islands Online Climate Outlook Forum (PICOF) http://www.bom.gov.au/climate/pi-cpp/clim_forecasts.shtml Climate Outlook Forum for Central America http://www.aguayclima.com/clima/inicio.htm South Asian Climate Outlook Forum (SASCOF) http://www.imdpune.gov.in/

Provention Consortium	**Step 3**	Provention Consortium is an information sharing website by UNISDR providing country information including risk profiles, disaster statistics, and hazard maps. http://www.proventionconsortium.org/
EM-DAT (Emergencies Database)	**Step 3**	EM-DAT is a website containing information database on natural and manmade disaster records as well as disaster profiles by country. http://www.emdat.be/
Local Meteorological Stations	**Step 4**	Local meteorological stations can provide data from day-to-day to long range forecasts including severe weather warnings as well as historical weather information/records. The World Meteorological Organisation has links on its website to all of its country members: http://www.wmo.int/pages/members/members_en.html

Appendix Two: Toolkit

In order to gather information around the four components, livelihoods, hazards, governance and future uncertainty for the various steps in the V2R Handbook, a range of tools can be used. There are numerous tools available for community participation and only eighteen key tools have been highlighted based on field testing. These have been organised according to space related, time related, relation relates and other tools. For each step, tools have been recommended to help gather required information and suggestions have been made on how to adapt these tools to uncover impacts of climate change. The tools below aim to describe the objective and how to facilitate the use of the tool. They have also been updated to ensure that climate change information can be gathered and can be triangulated against meteorological information.

Be creative in your facilitation and remember that the process is as valuable as the product from each tool.

Finally, don't forget to use the guiding questions from the different steps of the V2R Handbook to uncover different information then perhaps you are used to gathering!

Space Related PRA Tools	Time Related PRA Tools	Relation Related PRA Tools	Other Tools
Social Map	Historical Timeline	Focus Group Discussions	Survey
Resource Map	Seasonal Timeline	Hazard Mapping	Secondary Resources
Transect Walk	Trend Analysis	Livelihoods Analysis	
		Key Person Interview	
		Matrix Scoring	
		Pair Wise Ranking	
		Spider Web	
		Venn Diagram	
		Vulnerability Ranking	

Space Related PRA Tools

1) Social Map

Objective: to explore the spatial dimension of people's realities based on their own perceptions. The social map highlights infrastructure (i.e. housing, school, community hall). It helps to uncover social stratification, demographics, settlement patterns,

How to Facilitate:

- The social map is done by locals from the community. Invite them to gather at a time that is best for them.
- Explain why you want to them to conduct the exercise and how it will feed into your programme design.
- Ask them to begin by identifying and drawing important physical features of their community. This can be done using a variety of materials readily available and should be up to the community members to draw/sketch out in the sand/ground.
- Observe who is actively involved in the drawing of the social map, their position in the community, and who may not be participating.
- Ask for clarification when the appropriate moment arises and once the map is complete, ask them to identify their own houses and number them for info gathering later.
- Discuss the household details – composition, ages, and main livelihood strategies.
- Discuss the map as a group, ask questions to members to uncover any gaps.
- Photo the map and copy it down on to a paper.
- Cross –reference information gathered by other mapping exercises (transect walk and resource map).

Adapted from Somesh Kumar, Methods for Community Participation: A complete guide for Practitioners. 2002.

2) Resource Map

Objective: for community to identify the natural resources in and surrounding the community, such as farm land, rivers, lakes, fields etc. If the resource map includes habitation, then the map can easily get blurred with a social map. The map can also provide a baseline for monitoring and evaluation.

How to Facilitate:

- Invite people from the community to participate and identify a suitable place. Ensure that people from different social/economic groups, as well as women participate. Decide if it is necessary to have women's only group.
- Explain the reason for the exercise and how it will be used for programme design.
- Begin by asking community members to start identifying their major resources and use locally available materials to illustrate these as accurately as possible.
- Observe the group and makes notes on the resources as well as any key points which arise. Note who is leading, who is unable to participate.
- Ask for any changes at the end of the mapping.
- Ask them to explain the map and ask any questions for clarification or to fill any gaps.
- Take a picture of the map and draw the map onto paper.
- Cross reference the map with other maps available and discuss with other members of the community who did not participate.

(Adapted from Somesh Kumar, Methods for Community Participation: A complete guide for Practitioners. 2002.)

3) Transect Walk

Objective: the tool provides a spatial overview of a community through a cross-sectional representation of the typography, agro-ecological zones, land type and use, and ownership. The focus of a transect walk is the natural resources available to a community. It also allows for an understanding of how hazards impact on these natural resources. This tool is often used after a social or resource map as it provides an opportunity to clarify issues that emerge from previous maps and to fill in any gaps.

How to Facilitate:

- Invite 2-3 local community members with knowledge of the area who are happy to walk with you to learn more about the community and explain your objective.
- Decide on the dimensions you would like to collect.
- Observe surroundings and discuss with local community member your observations.
- Make notes and quick sketches as you go.
- Cross check your observations against any resource or social maps conducted.
- Take pictures and document any plant life or insects that you are unfamiliar with to discuss with community members.
- Upon return, encourage local community members to draw out a map and cross check with any existing maps.
- You should repeat this exercise with women only to get a different perspective of the natural resources, land use, ownership.

(Adapted: Somesh Kumar, Methods for Community Participation: A complete guide for Practitioners. 2002.)

Time Related PRA Tools

4) Historical Timeline

Objective:
The purpose of this tool is to get an insight into past hazards and the changes in their nature, intensity and behaviour over time so that the community are able to identify trends which might continue to impact on their livelihoods. It is also important to evaluate the level of risk analysis, planning and preparedness for the future within the community.

How to facilitate:

- The facilitator should consult with the group to decide on a table format or graphical line format.
- Ask people if they can recall major events in the community such as:
- Major hazards and their effects
- Changes in land use (crops, forest cover, houses etc.)
- Changes in land tenure
- Changes in food security and nutrition
- Changes in administration and organisation
- Major political events
- The facilitator can write the stories down on a blackboard or large sheets of paper in chronological order
- Periodically run back through the events already reported to prompt recall and help the informant fill in the gaps. Just concentrate on key events.

When the timeline is complete ask the group members the following questions:

- Are there any trends or changes in the frequency of events over time
- What are the current strategies to cope during difficult events? Are they working?
- Have coping strategies changed based on the changing frequency of events?
- What events do you expect will occur in the future? When?
- Does this perception of future events affect your plans for the future?

NOTE: It must be kept in mind that there may be a bias in the timeline as events in recent memory are more likely to be noted. Ideally this should be cross-reference with meteorological data where available.

Historic trend analysis

Year and month of occurrence	Event	Effect / Impact	Response measure of the community
1975 AD	Landslide	Bhagat Bahadur died because of landslide. Two other houses were damaged **(Settlement and Infra-**	The community temporarily shifted to Siureni as the rainfall increased. The community constructed checkdams, planted trees, and improved drainage
1995 AD	Flood	10 households were destroyed, **(Settlement and Infrastructure)** Crops were damaged, 5 bigha of agricultural land turned into riverbed **(Agriculture and food Security)**	The community temporarily shelter in school building during flood time. The community put bamboo poles, stone and sand in sack walls, etc.
Next in next 5 years (within 2015 AD)	More likely landslide		

(Example of a Historic trend analysis compiled by Practical Action Nepal)

Source: adapted from CARE – Community Vulnerability and Capacity Assessment, 2010.

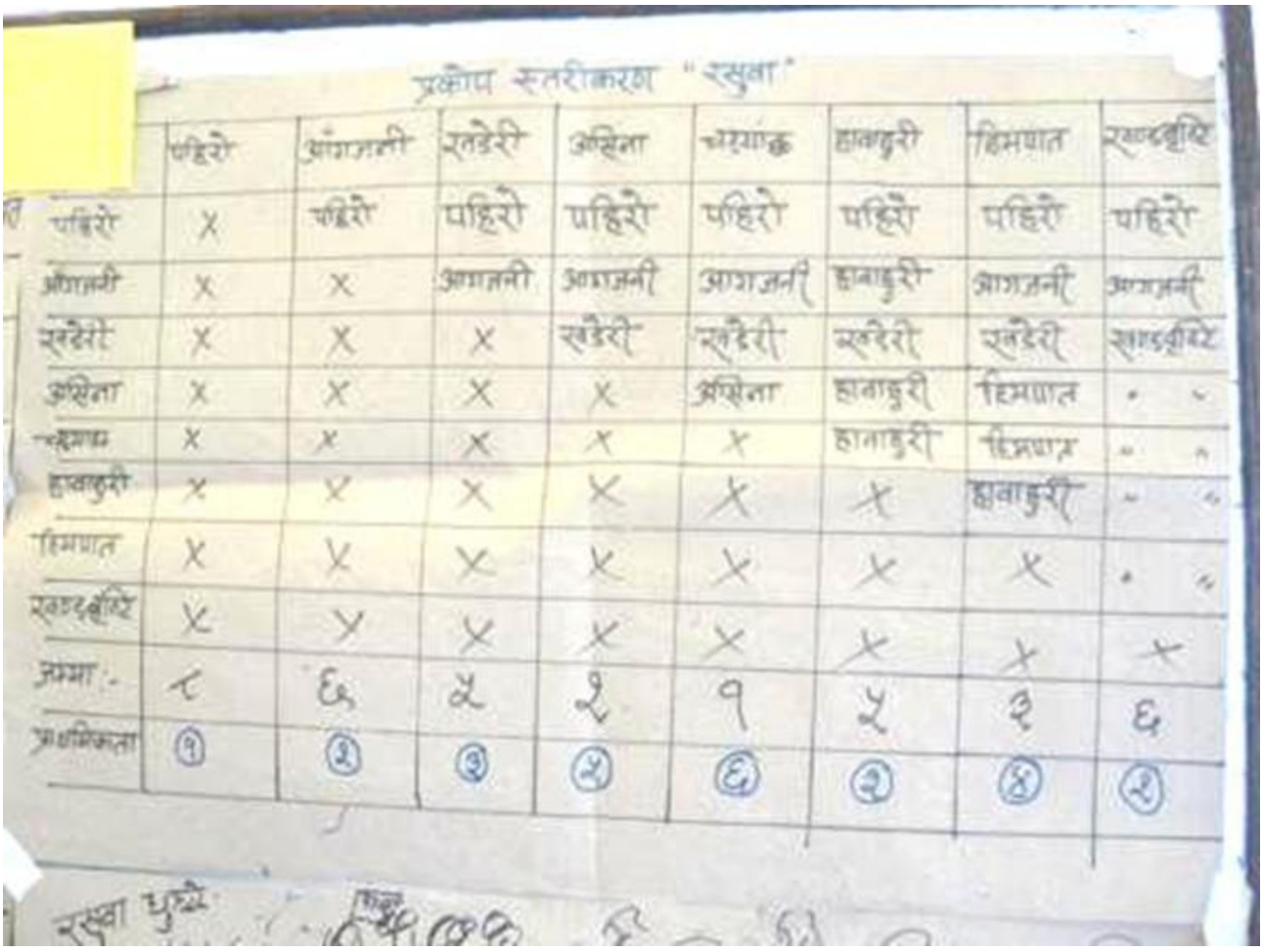
5) Seasonal Timeline

Objective:

The objective of this tool is to gather data from the community on changes in seasonal activities and the changes in plant and animal behaviour as proxies. Also it is to understand how these impact livelihoods, identifying periods of stress, hazards, disease, hunger, debt, vulnerability etc. and analysing what strategies the community employ to cope with these changes. It is also important to evaluate the extent to which the community is using climate information for livelihoods decision making.

How to facilitate:

- Use the ground or large sheet of paper. Make off the months of the year on the horizontal axis.
- Explain to the participants that you would like to develop a calendar to show key events and activities that occur during the year, how these events or variables (hot days, monsoon rainfall) have changed over time, the intensity of change, and period of time.
- Ask people to list seasons, events, conditions etc., and arrange these along the vertical. This list should include:
  - ◊ Climate events and timing of hazards/ disaster such as cyclones, droughts and floods
  - ◊ Seasonal character of plants and animals
  - ◊ Seasonal character of crops
  - ◊ Planting and harvesting seasons
  - ◊ Periods of food scarcity
  - ◊ Times of migration
  - ◊ Holidays and festivals
  - ◊ When common seasonal illnesses occur



Example of tables below to gather more in-depth information on seasonal changes in:

- ◊ Climate events
- ◊ Characteristics of plants and animals
- ◊ Characteristics of crops

Seasonal calendar of different climate events – current (within last 5 years) and past (as long as 30 years back)

Variable	Time	Bai	Jet	Asa	Shr	Bha	Asw	Kar	Man	Pou	Mag	Pha	Cha	Perceived level	Scale value
Hot days/ Summer season	Before														
	Now														
Hot waves period	Before														
	Now														
Cold days/ winter period	Before														
	Now														
Monsoon rainfall (time and nature)	Before														
	Now														
Winter rainfall (time and pattern)	Before														
	Now														
Snowfall	Before														
	Now														
Dew	Before														
	Now														
Frost	Before														
	Now														
Hail	Before														
	Now														
Drought Event	Before														
	Now														
Landslides/ erosion	Before														
	Now														

Seasonal characters of plants and animals as proxi indicators to climate variability or change

Flowering and fruiting of natural plants -1	Before														
	Now														
Plant 2	Before														
	Now														
Behaviour of animals - 1	Before														
	Now														
Animal 2	Before														
	Now														
Etc.	Before														
	Now														

Seasonal character of crops

Paddy	Before														
	Now														
Maize	Before														
	Now														
Millet	Before														
	Now														
Wheat	Before														
	Now														
Flood Event	Before														
	Now														
	Now														

(An example of a seasonal calendar from Practical Action Nepal, 2011).

When the calendar is complete, ask the group members the following questions:

- What are the most important livelihoods strategies employed at different times of the year?
- What are the current strategies to cope during difficult times? Are they working?
- Are there any differences in the timing of seasons and events as compared to 10/20/30 years ago?
- Have livelihoods/coping strategies changed based on the changing seasons or events?
- How are decisions made on the timing of livelihoods strategies?

Communicating climate change:

When discussing coping strategies and changes, there may be opportunities to examine whether existing coping strategies are working in the context of a changing environment and/or to identify innovative strategies that have emerged as a result of the changes. It can provide an opening to discuss a need for new strategies in the context of climate change, and to introduce the concept of adaptation.

6) Trend Analysis

Objective:

Gain insight into past hazards and identify trends in their nature, intensity and impacts. Understand historical community reactions to and coping strategies for hazards. It also provides insight into historical institutional support following hazard events. It highlights different socio-economic and political changes in the past.

The trend analysis can be combined with a seasonal calendar.

How to facilitate:

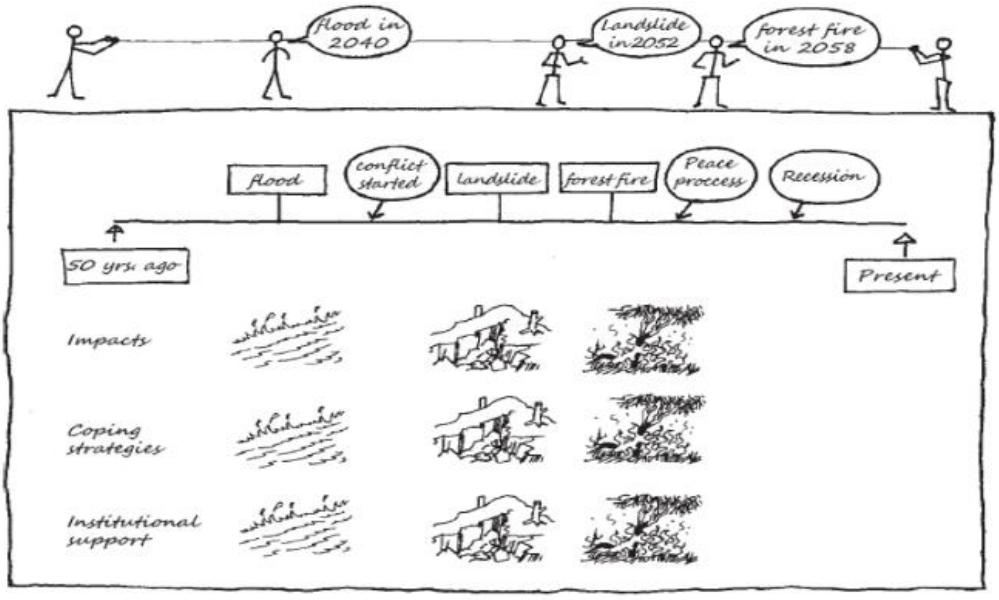
A long piece of string or other material is stretched across the meeting area to represent the passage of time.

Starting with the earliest hazard event anyone can remember, a timeline of the last 30 to 50 years is developed to identify large climatic hazard events.

Participants can stand on the line at the appropriate place and describe the event. The facilitator discusses these in the context of climate change.

Discussion follows around the impacts of the events, community reaction and coping strategies and institutional support. Paper can be put along the length of the line and all the details recorded in different colours.

Other socio-economic and political events are also recorded.



(Source: Participatory Tools and Techniques for Assessing Climate Change Impacts and Exploring Adaptation Options: A Community Based Tool Kit for Practitioners. Livelihoods and Forestry Programme. 2010).

Relation Related PRA Tools

7) Focus Group Discussions

Objective:
Focus group discussions provides an opportunity for an in-depth look at what people think and why they think it on predetermined topics. When properly facilitated, they enable an understanding of what is important to people, their motivations and how they feel about the issues to be discussed.

How to Facilitate:

- Choose a time and location that is convenient for community members
- Consider the range of people you need in the discussion or whether you will have a women only or different socio-economic groups in one group discussion.
- Inform participants of the name of the organisation and the precise nature of the research; the goal and how they will be informed of the findings.
- Prepare objective and topic of discussion, no more than three topics.
- Allow for an unstructured conversation and facilitate by moving the conversation forward, drawing out people who do not speak, and making notes of the conversation.
- Ensure that you thank people for their participation and make it clear what you will do with the findings and how and when you will bring the findings back to them.

8) Hazard Mapping

Objective:

This tool enables the facilitator to become familiar with the community and identify important areas at risk from climate hazards as well as analysing changes in hazards over time and the level of planning for risk reduction which exists in the community. (This can also help with identifying livelihood assets at risk but for a full understanding of people's livelihoods, use the livelihoods analysis tool -9 below).

How to facilitate:

- Explain to the participants that you would like to build a map of their community
- Choose a suitable place (ground, floor, paper) and medium (sticks, stones, seeds, pencils, chalk) for the map. If the map is made on the ground or floor, the note taker will then have to copy the map on a flipchart or in his/ her notebook. A photo can also be helpful
- First, build the community map. Ask the community members to identify a landmark in the community.
- Put a mark or stone to stand for the landmark. NOTE: the facilitator should help the participants get started but let them draw the map by themselves.
- Ask the community members to draw the boundaries of the community.
- Ask the community members to draw the location of settled areas, critical facilities and resources in the community. This should include houses (the map doesn't need to show every house, but the general area where the houses are located), facilities such as churches / mosques, health clinics, schools, and resources such as forested areas and water bodies.
- When the community members have agreed that the map is representative of their community, begin the second step: identifying the hazards.
- Ask the community members to identify the areas at risk from different types of hazards. These should include;

◊ Natural disasters

◊ Health crises such as HIV/AIDS and Malaria

◊ Socio politic issues such as conflict or land redistribution

◊ Hazards that are mentioned that are not location specific should be noted on the report.

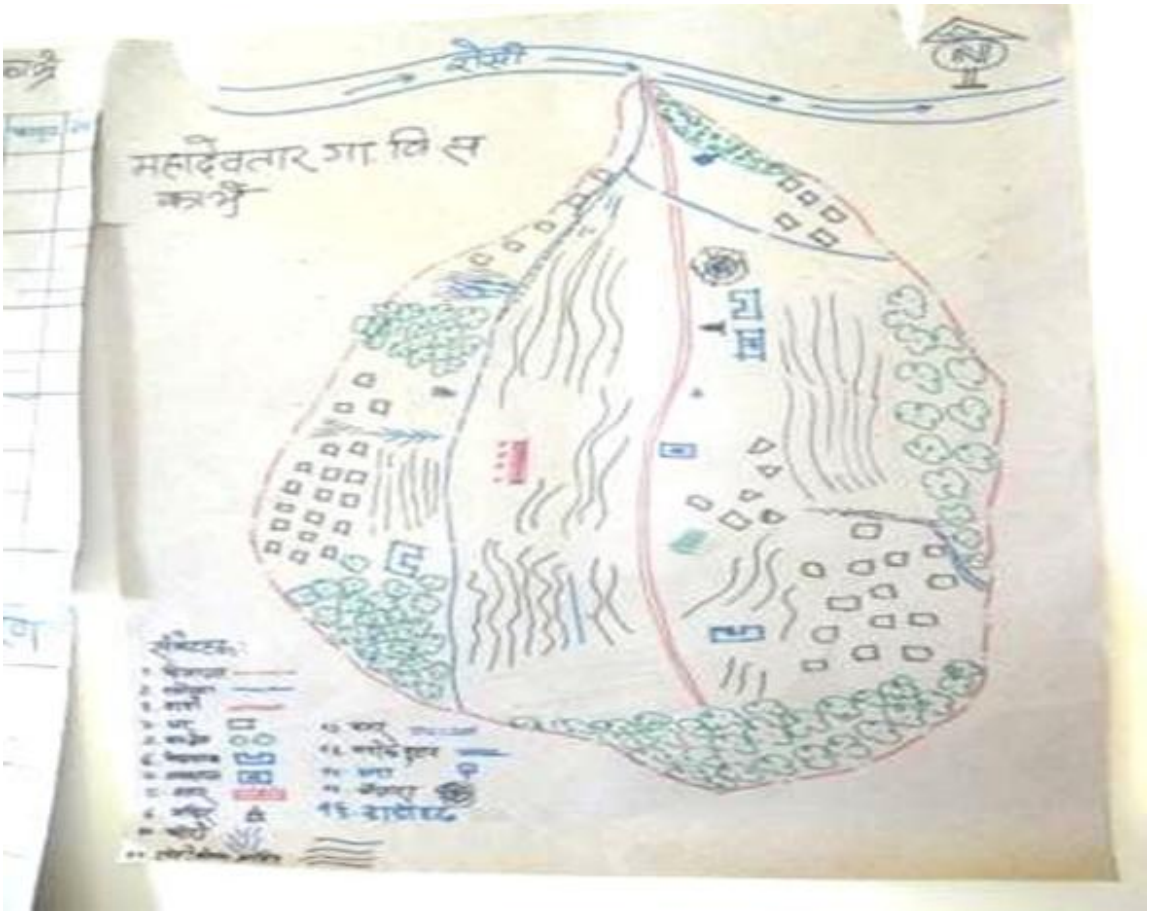
Learning and discussion:

When the map is complete ask the group members the following questions:

- Who has access to the resources shown on the map? Who controls this access?
- What are the impacts of the hazards identified?
- Are the hazards different now than they were 10/20/30 years ago (depending on age of participants)? How?
- Are there places in the community that are safe from hazards?
- Are these safe places used to protect from hazards E.g. to store food and inputs or to shelter livestock)?
- Who are the members of the community who are most at risk from the different hazards? Why?
- How do people in the community currently cope with the impacts of the specific hazards identified? Are the current coping strategies working? Are they sustainable?

Communicating climate change:

During the discussion, note any observations by the community that may be in line with the meteorological data that is available for the region, and communicate this information in order to validate their observations. This can provide an opening to present the predicted future trends for the particular hazards that have been identified.



An example of a hazard map from Practical Action Nepal, 2010

Source: adapted from CARE – Community Vulnerability and Capacity Assessment, 2010.

9) Livelihoods Analysis

Objective: This tool involves a focus group discussion with the community which allows you to identify the key livelihoods groups and the assets and resources needed to sustain local livelihood strategies. This information can then be added into Workbook 1.

How to facilitate:

- Participants call out the different livelihoods groups within the community and they are written up randomly on cards or a sheet of paper. If the discussion is happening in a large group, they can split into groups with common livelihoods strategies to discuss further.
- Participants discuss the resources they use to secure their livelihoods. The facilitator ensures participants consider resources in the widest sense of the five capitals of the sustainable livelihoods framework (see notes below)
- It is useful to ask the participants to distinguish between capital assets and access to capital, a capital asset is an asset over which an individual has some form of ownership, formal or informal, private or communal. However often community members make use of resources which are not strictly their assets, effective access to some kinds of capital can be enough for that capital to play an essential role in livelihoods strategies but it is important to recognise the difference as this may affect their ability to adapt their livelihoods strategies to the impacts of climate change.
- Use the information gathered to fill in the 'livelihood group' and 'resource and assets' section of the livelihood analysis workbook.

Notes:

- It is useful for the facilitator to steer the participants into considering all five types of capital (natural, physical, financial, human and social) but there is no need to mention them as such.

(Adapted from DFID, Livelihoods Forestry Programme, 2010)

10) Key Person Interview

Objective:

Key person interviews allows for more details on an aspect of an issue that is often difficult to discuss in a public setting. A one to one discussion of an issue or topic is a useful way to gather more information and to cross reference information gathered.

How to Facilitate:

- Consider the topic/issue and identify who would be a good resource person for this topic (i.e. community leader, marginalised member of the community, government official, media, main representative for certain livelihoods group etc.).
- Prepare a range of questions to ask and set up a time to meet that is convenient for the interviewee.
- Introduce yourself and aims of the discussion and discuss confidentiality.
- The interview can be structured or semi-structured, allowing the interviewee to guide you in the questions you want to pose and dig deeper on.
- Do not take more time than agreed.
- Take notes during the interview or use a tape recorder.
- Highlight how the discussion will be used and when and how you will share the information back to them.

11) Matrix Scoring

Objective: This tool is used to present and analyse large amounts of data. It allows for comparison between various elements. It encourages a comparative understanding of the elements based on certain characteristics and brings out reasons for ranking and helps with decision making processes.

How to Facilitate:

- Identify the topic on which you want to develop an understanding of the elements based on certain criteria.
- Identify a range of individuals from the community. You may want to repeat this exercise with women only or different livelihoods groups.
- Explain the purpose of the exercise and gather different views from the group.
- List down the various elements in column.
- Arrive at criteria through discussion and add to the columns to the left of the elements.
- Score or rank the elements based on the criteria.
- The discussion is as important as the final result!

(Adapted: Somesh Kumar, Methods for Community Participation: A complete guide for Practitioners. 2002.)

12) Pair Wise Ranking

Objective:

The usefulness of this tool is to arrive at people's preferences and priorities. It also helps to uncover the criteria used by people to arrive at their preferences.

How to Facilitate:

- Identify your topic to study and select a homogeneous group of participants. This can be then done with different groups, women only, different livelihoods and socio-economic groups to highlight different priorities.
- Explain the purpose of the exercise and ask the community members to come up with a list. Add this in the first column.
- Ask participants to draw out the issues that came up on small pieces of card. Ask each member to draw out one issue twice.
- Draw a grid or matrix on the ground with as many rows and columns as there are issues.
- As participants to compare two items at a time. Between A and B, which is more serious, which one do you prefer, which is more important, which is your priority?
- Record preferences in the matrix by putting symbol or abbreviation of the item in the cell.
- Upon completing the exercise, tally how many times each item has been preferred. The higher the frequency, the higher the preference for the issue.
- Discuss the finding and seek any clarifications.
- Triangulate the outputs and compare with finding from other groups which you have done the same exercise with.

(Adapted: Somesh Kumar, Methods for Community Participation: A complete guide for Practitioners. 2002.)

13) Spider Web

Objective: a useful tool in visually depicting the performance of a programme or individual based on a number of indicators. It also allows for comparison over time or compared to different groups.

How to Facilitate:

- Identify the community members you want to uncover their livelihoods assets with. Consider holding multiple meetings to gain an understanding of different socio-economic groups.
- Call a meeting at a convenient time for community members.
- Ask them to identify indicators on which the group can be evaluated. Often livelihood assets are used as indicators: financial, natural, physical, human and social. You can also add in political as a separate asset.
- Spider Web diagrams work best with up to six indicators and can be derived at the most useful through a process of discussion and prioritisation.
- Once the indicators have been identified and agreed, draw a centre point on a paper on the ground. Draw the lines from the centre point to the indicators which you have names or labelled visually.
- Now ask members to score each indicator from 0-5 with 0 being the lowest. Ask them to then link the points on each arm for the indicators using a different colour or pattern.
- Ask members to discuss their diagram and ask any questions for clarification and elaboration.
- Copy the diagram, make a note of the participants, location, the date so that it may be compared in the future if needed.

14) Venn Diagram

Objective:

This tool can be used as an opener to the discussion on policies and institutions with the community by getting them to identify the main actors, organisations and institutions which impact on their livelihoods and analyse in what ways they support or constrain their ability to adapt their livelihood strategies. It is also a useful tool for facilitating discussion on the level of engagement of the community in the local planning process and the access to services which support livelihoods such as social safety nets.

How to facilitate:

- There are a number of different ways to do the Venn diagram. You can draw and write with a stick on soft ground or you can work on paper. If you decide to use paper, people should first use a pencil in order to be able to make changes. Another option is to cut circles of different sizes from coloured paper and let participant decide which size of circle represents the different institutions.
- If people find it difficult to understand this tool, it may be helpful to draw a simple example for them.
- Ask the participants which organisations/institutions/groups are found in the village and which other ones from elsewhere are working with them. Encourage them to also think about informal groups and community based organisations.
- Write down all the institutions that are mentioned and give each organisation a symbol which everyone can understand.
- Ask the participants to draw a big circle in the centre of the paper or on the ground that represents them.
- Ask them to discuss for each organisation how important it is for them. The most important ones are then drawn as a big circle and the less important ones as smaller circles. Ask the participants to compare the sizes of the circles and to adjust them so that the sizes of the circles represent the relative importance of the institution, organisation or group.

Every organisation/group should be marked with name or symbol.

Ask them to discuss in which way they benefit from the different organisations

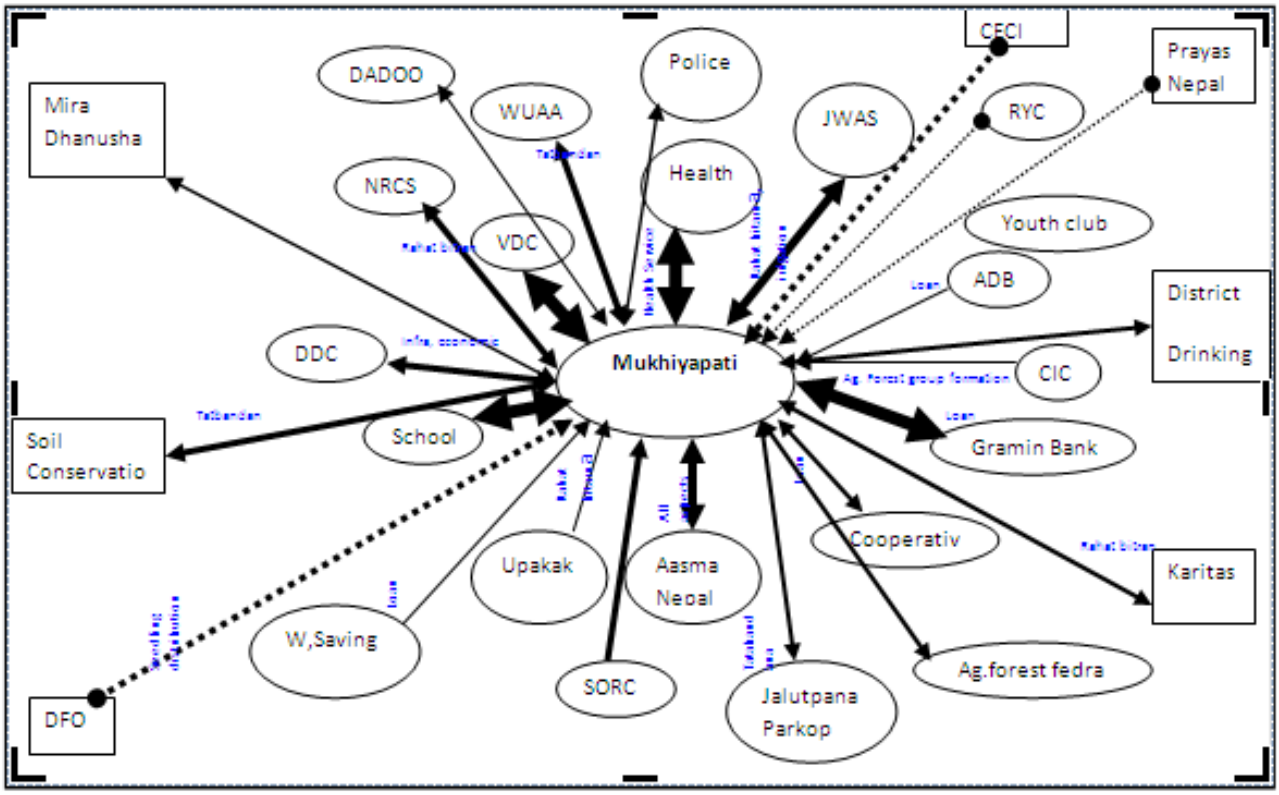
The note taker should transcribe the discussion, noting why the different organisations are considered more or less important.

Ask them to show the degree of contact/co-operation between themselves and those institutions by distance between the circles. Institutions which they do not have much contact with should be far away from their own big circle. Institutions that are in close contact with the participants and with whom they cooperate most should be inside their own circle.

Prepare a Venn Diagram with key institutions based on literature review of different sectors which are crucial for the community, i.e. disaster risk reduction, climate change or other. Overlay this on the community Venn diagram and note organisations which the community did not mention. Consider bringing back the two Venn diagrams to the community for discussion of other institutions and organisations which affect their livelihoods and which ones they might consider linking with.

Discussion questions:

- Are any of the organisations only open to membership by men or women? Do any offer services only to men or women?
- Are there any other groups that are excluded from membership or service for the organisations identified?
- Do any of the organisations offer support in times of crises?
- How do you receive information from the different organisations?



An example of a Venn diagram for Mukhiyapati district carried out by Practical Action Nepal

(Source: CARE – Community Vulnerability and Capacity Assessment, 2010).

Vulnerability Ranking

Objective:

To determine the hazards that have the most serious impacts on important livelihoods resources, to determine which livelihoods resources are most vulnerable and identify coping strategies currently used to address the hazards identified.

How to facilitate:

- Prepare a matrix in advance. This can be done on the ground or on flip chart paper.
- Ask the group to identify their most important livelihood resources. These do not have to be the resources that they currently have, but those that they consider to be most important in achieving well-being. They may create a long list of resources. You may want to organise the list based on different categories or resources – human, social, physical, natural, financial.
- Ask the group to identify the four resources they consider to be MOST important in achieving well-being. List these priority resources down the left hand side of the matrix on the vertical. Use symbols if this will help participants to better understand.
- Then ask the group to identify the greatest hazards to their livelihoods. Hazards may be natural or manmade. Do not limit the discussion to only climate related hazards, but you may want to prompt the group if they are not identifying environmental hazards.

NOTE: It is important to be specific in the hazards, and to ensure that the issues identified are actually hazards. Participants may identify conditions such as 'food insecurity' as hazards. It is up to the facilitator to ask the group to break down these conditions to determine if they are caused by hazards (e.g. food insecurity may be the result of a drought, which is a hazard). Similarly, some groups may identify scarcity of resources, such as lack of money, as a hazard. In this case, it should be determined whether the lack of resources is the result of a hazard, or in some cases, whether the resource should be added to the list of priority resources identified in the previous step.

The four most important hazards should be listed horizontally across the top of the matrix, again using the symbols if necessary.

Ask the community to decide on a scoring system for the hazards against the livelihood resources, identifying significant, medium, low and no hazard. The scoring system should be as follows:

3 = significant impact on resources

2 = medium impact on resources

1 = low impact on resource

0 = no impact on the resource

You can use stones, symbols or different colours of markers (e.g. red = significant risk to resource, orange = medium risk, green = low risk, blue = no risk). Ensure that all members of the group understand the scoring system.

Ask the participants to decide on the degree of impact that each of the hazards has on each of the resources. This will involve coming to a consensus as a group. The note taker should note key points of discussion that lead to the scores assigned and any disagreement on the scores.

Discussion questions:

- When the matrix is complete ask the group members the following questions:
- What coping strategies are currently used to deal with the hazards identified? Are they working?
- Are there different strategies that you would like to adopt that would reduce the impact of hazards on your livelihoods?
- What resources do you have that would help you adopt these new strategies?
- What are the constraints to adopting these new strategies?

(Source: CARE – Community Vulnerability and Capacity Assessment, 2010)

Appendix 3: Other Tools

16) Survey

Objective: to reach a wide range of people with a specific area of investigation. Surveys are useful to gather information on areas that you cannot observe directly. Surveys should be used in conjunction with other forms of in formation gathering. Two ranges of surveys exist, questionnaires and interviews.

How to Facilitate:

Decide what type of survey is needed, questionnaires or interviews. Literacy and language is a key consideration for questionnaires. If questionnaires are decided upon, it is wise to seek help in designing them from professionals. However, most likely interviews will be the survey tool needed. See the Key Person Interview tool for information on how to facilitate.

17) Secondary Resources

Objective: to gain background in formation on the issues and to understand the context.

How to collect:

Collection of secondary information can be done before or after information gathering with community members. If you gather information before, it can help you to understand the issues, if you gather after, it can help to fill gaps left community members.

Local, regional or national information and data sources can complement community level analysis including: government reports and statistics, other non-governmental reports and baselines, meteorological office publications and more.

It is important to gather information across a range of sectors that you will be working on and gather the latest on institutions and processes underway. For example, it is useful to know of Nepal's latest National Adaptation Programme of Action, as well as their Local Adaptation Plans of Action and upcoming Agriculture strategy when working on issues of agriculture, Disaster Risk Reduction and climate change.

It is important to leave ample of time for gathering of secondary resources as they may be difficult to track down and analyse.

Appendix 4: Review of Tools and Frameworks for Responding to Climate Change

Tool	Implementing Organisation	Type of Tool	Purpose	Additional Resources Needed?	Easy to Use?	Details
Integrating Climate Change Adaptation into Secure Livelihoods Toolkits 1-3	Christian Aid	Climate Analysis	To provide guidance on carrying out an analysis of climate change trends and impacts in order to guide adaptation planning for livelihoods	No	Easy	Gives detailed tools and approaches to gathering both scientific and community based information on climate change
Climate Vulnerability and Capacity Analysis (CVCA)	CARE	Climate change VCA	To incorporate climate change into traditional VCA methodology	No	Easy	Comprehensive VCA with strong emphasis on how institutional and governance structures affect adaptive capacity.
How can climate change be considered in vulnerability and capacity assessment	IFRC	Climate change VCA	To incorporate climate change into traditional VCA methodology	No	Easy	This document is supplementary document suggesting how to incorporate climate change into IFRC's existing framework where as other organisations have developed new user friendly frameworks which include climate change
Framework for social adaptation to climate change	IUCN	VCA	To provide a framework for assessing the vulnerability of coastal communities and marine-based industries to climate change.	No	Easy	Despite the fact that this framework is specific to coastal communities, it provides a comprehensive analysis of adaptive capacity on two levels; individual and community which could be applied more generally
Climate Change and Environmental Degradation Risk and Adaptation Assessment (CEDRA)	Tearfund	Climate Screening	To assess to what extent current projects will be affected by climate change and support the development of adaptation options.	No	Easy	Involved less time and resources to use than other climate screening tools such as CRiSTAL.. It would be best used in conjunction with a VCA in order to gather the necessary climate information to effectively screen projects.
Community Risk Based Screening Tool – Adaptation and Livelihoods (CRiSTAL)	IISD with IUCN, SEI and Inter Cooperation	Climate Screening	To assess to what extent projects will be affected by climate change and support development of adaptation options.	Uses CD rom. Training recommender but not mandatory	Moderate	Involves collection of a lot of background information and uses rigid excel spreadsheet format. If time and resources are limited then CEDRA could provide a simplerclimate screening tool.
Community	IIED	Community based	To offer guidance on developing	No	Easy	This is not really a step by step tool, but a guidance manual for

Based Adaptation to Climate Change		adaptation tools	community based adaptation projects			carrying out community based adaption. It gives examples of participatory techniques which can be used to gather and share climate information with the community and develop appropriate responses.
Climate Proofing Tool	HEKS	Climate Screening	To assess to what extent projects will be affected by climate change and support development of adaptation options.	CM Rom	Moderate	This tool is useful as it is based on CRiSTAL but is one of the only tools around which explicitly considers cc mitigation.
Participatory tools and techniques for assessing climate change impacts and exploring adaptation options	DFID/LFP	Climate change VCA	Assess vulnerability to climate change and supports the development of adaptation options.	No	Easy	Has been developed specifically for Nepal but can be applied to other countries. Good tools and techniques for assessing climate impacts on livelihoods
Local Adaptive Capacity Framework	ACCRA	Analysis and decision tool	Provides a framework of questions through which to assess adaptive capacity	No	Easy	Identifies 5 characteristics of adaptive capacity and provides guiding questions through which to assess them, including the barriers and opportunities of each aspect.
CV&A: A Guide to Community vulnerability and adaptation assessment and action.	CIDA	Climate change VCA	Guidelines for facilitating a community based vulnerability and capacity assessment in the Pacific Islands.	No	Easy	Has been developed specifically for the Pacific region but could be used as a general framework through which to assess non-coastal communities.
PRECIS	Hadley Centre	Climate Analysis	To produce downscaled regional climate projections	Needs to be run on a computer on linux software with sufficient memory	Difficult	PRECIS has been developed to be used by trained climate scientists or meteorologists and takes months to projections.
MAGICC		Climate Analysis	To produce downscaled regional climate projections	Needs to be run on a computer with sufficient memory and reliable power	Difficult	Needs experienced technician to run the programme and produce projections. Not simple or quick way of accessing climate analysis
ORCHID	IDS	Climate screening tool	To assess to what extent projects will be affected by climate change and support development of adaptation options.	Computer based tool	Difficult	This tool has been designed to be used by a specialist consultancy team therefore other simpler screening tools such as CEDRA or CRiSTAL may be more appropriate depending on the nature of the assessment and the resources available.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