

# Mainstreaming Climate Change Adaptation Through Community Based Planning



## Concept, Process and Tools

July 2010



# **Mainstreaming Climate Change Adaptation Through Community Based Planning**

## **Concept, Process and Tools**

Livelihoods and Forestry Programme

July 2010

**Prepared by:**

**Bimal Raj Regmi  
Ramu Subedi**



# Contents

Background .....	1
The Key Concepts and Adaptation .....	2
What is Adaptation ? .....	3
Types of Adaptation .....	4
Types of Adaptation Plans .....	5
Guiding Principles of Good Adaptation .....	7
Developing Adaptation Policies and Plans .....	8
Adaptation Planning Process .....	9
Suggested Planning Tools .....	12
Key Learning on Community Based Adaptation .....	14
Annex 1: Some Examples of CBA Interventions .....	16
Annex 2: Prioritisation Criteria .....	17
Annex 3: Example of Community Based Adaptation Plan .....	17
References .....	18

---

## Acronyms

CBA	Community Based Adaptation
CCNN	Climate Change Network Nepal
COP	Conference of Parties
DFID	Department for Internatioanl Development
FAO	Food and Agriculture Organisation (United Nations)
FCPF	Forest Carbon Partnership Facility
GHG	Greenhouse Gas
GLOF	Glacier lake Outburst Flooding
GoN	Government of Nepal
IPCC	Intergovernmental Panel for Climate change
LAPA	Local Adaptation Plan of Actions
LFP	Livelihoods and Forestry Programme
LOCATE	Local Options for Communities to Adapt and Technologies to Enhance Capacity
MoE	Ministry of Environment
MoPE	Ministry of Power and Energy
MFSC	Ministry of Forests and Soil Conservation
NAPA	National Adaptation Programme of Action
NGO	Non Governmental Organisation
NTFP	Non Timber Forest Products
SSNAPP	South South North Adaptation Projects Protocol
REDD	Reduced Emission from Deforestation and Forest Degradation
R-PIN	Readiness Project Idea Note
UNFCCC	United Nation Framework Convention on Climate Change
VDC	Village Development Committee

---

## Background

Helping the millions of poor people at greatest risk from climate change to adapt to its impacts is a daunting task. The Intergovernmental Panel on Climate Change's latest report states clearly that climate change is already having discernable impacts. These are disproportionately affecting poor communities — especially those in poor countries. These impacts are set to intensify, yet the poorest communities are unable to cope with current climatic (and other) shocks, let alone any future risks related to climate change. It is vital that these communities are helped to adapt to climate change. Some international funding is being made available to support such work, but simply providing governments of poor countries with aid does not mean that it will reach the poor and most vulnerable. Such communities are often marginalised, remote and receive limited services or support from their governments. Reaching the hundreds of millions of people in them will be an immense challenge for any international or national funding mechanisms.

The integration of climate change adaptation and adaptive capacity issues within development processes is now a central issue for development policy and practice. Climate Change adaptation is a dynamic field of activity, with lessons emerging all the time. Community based adaptation plan is prepared at local level by involving multi-stakeholder team including the vulnerable communities. It involves decentralized and bottom up planning process.

The proposed planning process would identify adaptation needs at the local level that focuses on reducing local-level climate risk and vulnerabilities and ways of increasing resilience. It would also focus on strengthening mechanisms for ensuring consolidated and coordinated adaptation responses at local levels through the existing planning process. Moreover, mainstreaming climate change adaptation into existing local development planning particularly at the district and village levels is important to ensure a bottom-up perspective to climate resilience development pathways.

## The Key Concepts of Adaptation

Human-induced climate change science has emerged from meteorological and other bio-physical sciences, with the contribution of response concepts and terminology from environmental sciences, and more recently interdisciplinary approaches involving the social sciences. The concepts are rapidly evolving through increasing engagement by diverse stakeholders. Many of the definitions we have used come from the Inter governmental Panel on Climate Change (see appendix 1) as they represent the widest consensus on Climate change terms available, but there are varying interpretations across the literature, causing some mystification in the Climate change debate.

Responses to climate change have been grouped into two main categories: mitigation (addressing causes) and adaptation (addressing effects), with the former receiving most of the attention until recently. As the potential significance of the resulting changes and the links with human causes has become clearer, demands for assistance for the most vulnerable/least resilient have become louder (Nelson et al 2007) leading to adaptation moving up the agenda. The previously overlooked interactions between mitigation and adaptation are also receiving greater attention, because of the potential synergies and trade-offs implied for policy decisions (IPCC, 20074).

Adaptation to climate change can be spontaneous or planned. The latter – whether seen as a normative goal, or as a process of policy changes or practical actions - is rising up the international development agenda. From an initial focus on top-down analyses of Climate change impacts, attention has shifted to vulnerability assessments (again conducted in a top-down manner) and more recently to both top-down and bottom-up adaptation planning (e.g. National Adaptation Programmes of Action or NAPAs).

## What is Adaptation?

Adaptation to climate change is any activity that reduces the negative impacts of climate change and/or takes advantage of new opportunities that may be presented.

Adaptation includes activities that are taken before impacts are observed (anticipatory) and after impacts have been felt (reactive). Both anticipatory and reactive adaptation can be planned (i.e. the result of deliberate policy decisions), and reactive adaptation can also occur spontaneously. In most circumstances, anticipatory planned adaptations will incur lower long-term costs and be more effective than reactive adaptations.

Adaptation will usually not take place in response to climate change alone, but in consideration of a range of factors with the potential for both synergies and conflicts. Successful adaptation does not mean that negative impacts will not occur, only that they will be less severe than would be experienced had no adaptation occurred.

Adaptation is a necessary complement to mitigation in addressing climate change. Adaptation involves making adjustments in our decisions, activities and thinking because of observed or expected changes in climate, with the goals of moderating harm and taking advantage of new opportunities.

### Box 1: Adaptation

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous and planned adaptation. (IPCC AR4 Glossary 2007).

## Types of Adaptation

The IPCC distinguishes several types of adaptation (IPCC TAR, 2001):

**Anticipatory Adaptation** - Adaptation that takes place before impacts of climate change are observed. Also referred to as proactive adaptation.

**Autonomous Adaptation** - Adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems. Also referred to as spontaneous adaptation.

**Planned Adaptation** - Adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.

**Private Adaptation** - Adaptation that is initiated and implemented by individuals, households or private companies. Private adaptation is usually in the actor's rational self-interest.

**Public Adaptation** - Adaptation that is initiated and implemented by governments at all levels. Public adaptation is usually directed at collective needs.

**Reactive Adaptation** - Adaptation that takes place after impacts of climate change have been observed.

## Types of Adaptation Plans

**National Adaptation Programmes of Actions (NAPAs)** are documents currently being prepared by Least Developed Countries like Nepal to communicate priority activities addressing their urgent and immediate needs and concerns relating to adaptation to the adverse effects of climate change. The rationale for developing NAPAs rests on the low adaptive capacity of these countries, which renders them in need of immediate and urgent support to start adapting to current and projected adverse effects of climate change. Activities proposed through NAPAs are those whose further delay could increase vulnerability, or lead to increased costs at a later stage.

**Local Adaptation Plan of Actions (LAPAs)** will enable communities to understand the uncertainty of future climatic conditions and engage effectively in a process of developing adaptation programmes. They will implement climate resilient plans that are flexible enough to respond to changing climate and vulnerability conditions. They will also inform sectoral programmes and catalyse an integrated response to climate change between sectors. Local level adaptation planning begins at community level, contributes to Village Development Committee level plans, which in turn inform district and national level

**Community Based Adaptation Planning (CBAP):** One approach to the problem that deserves greater support is community-based adaptation (CBA), which can be viewed simply as an additional (though fairly new) layer of community based development activities, practices, research and policies. CBA begins by identifying the communities in the developing world that are most vulnerable to climate change. These are generally very poor, depend on natural resources and occupy areas already prone to shocks such as floods or droughts. Once a community's vulnerability has been established, using the best available science on climate change impacts, the process of engagement with the communities can begin.

### **Some points to consider while designing CBA projects**

- It should be locally and community lead, owned and community driver process (should be based on inspiration of poor, vulnerable, marginalized, women, ethnic groups)
- Communities participation is crucial in assessing impact, identifying adaptation needs and mode of their engagement in implementation
- Community adaptation plans and projects are based on existing local resources, knowledge, capacity and builds on local innovations
- It should well recognize existing institutional set up, comparative advantages of key national and local actors, and local context including district and national policies and programmes
- Adaptation plans and project are focused on helping most vulnerable communities to strengthen their strategy to adapt to climate change impacts
- Low cost and feasible interventions, technology, processes and practices should be encouraged
- Communities expectation might be raised so should focus on providing guidance and technical support rather than any financial commitment

## Guiding Principles of Good Adaptation

**Sustainable** – Sustainable development will ensure that we are best placed both to minimise the threats posed by the impacts of climate change and to capitalise on potential opportunities presented by it.

**Proportionate and integrated** - Assessing climate risks should become ‘business as usual’ and part of normal risk management. Action must relate to the level of risks and the desired outcomes, and will need to be taken at the most appropriate level and timescale.

**Collaborative and open** - Adapting to climate change is a challenge for the whole of our economy and society, and will require action from a range of individuals and organisations, within and across sectors working together.

**Flexible and Effective** - Actions should be context specific, implementable, and enforceable. They should incorporate flexibility to adjust to a range of future climate scenarios, as well as socio-economic, technical and other changes.

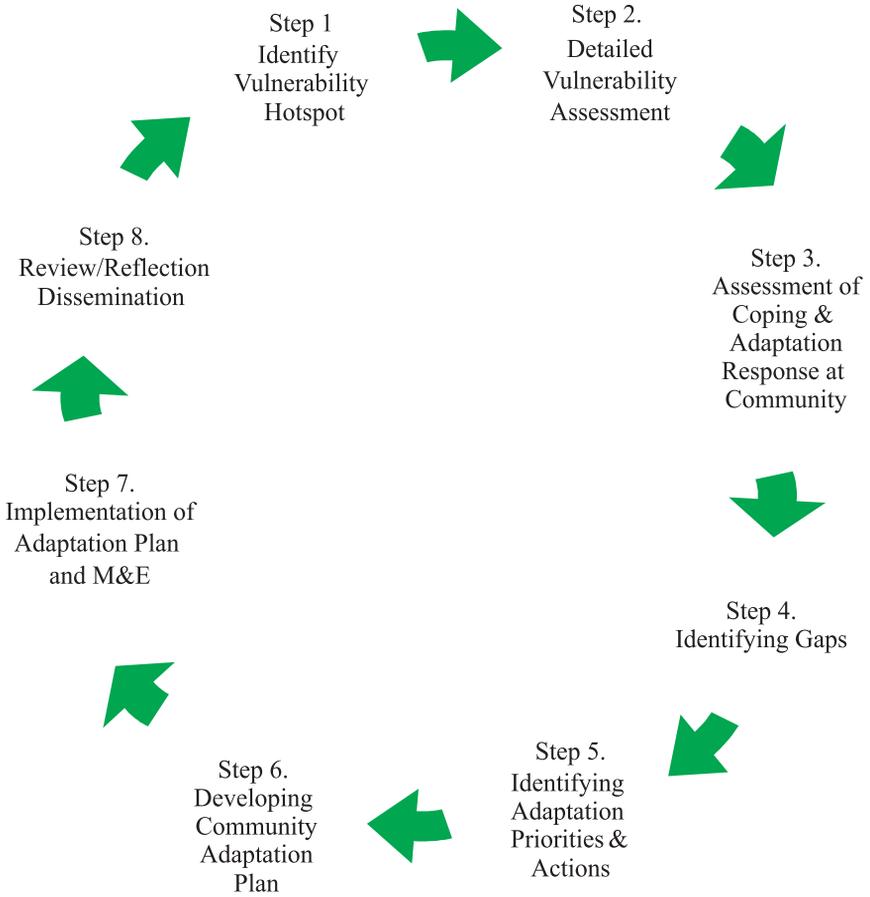
**Efficient** - Actions should weigh costs, benefits and risks involved. Measures should be timed appropriately.

**Equitable** - The distributional consequences of different options should be considered to inform decision makers of the effects of the activity on the natural environment and different social groups, especially vulnerable ones, to ensure that individuals or groups do not bear a disproportionate share of those costs or residual risks.

## Developing Adaptation Policies and Plans

Five key components of adaptation responses (detailed planning steps presented in figure below):

- a) Assess current vulnerability (to climate risks, factors determining vulnerability, effectiveness of current adaptation efforts?)
- b) Assess future climate risks (development of scenarios of future climate, vulnerability, and socio-economic and environmental trends to assess future climate risks);
- c) Assess existing coping and adaptation responses (assessing communities responses in term of local knowledge, practices, institutions and other resources)
- d) Formulate an adaptation strategy (to current vulnerability and future climate risks – identify and select set of adaptation policy options/ measures, and formulate of these into a cohesive integrated strategy);
- e) Continue the adaptation process – implementing, monitoring, evaluating, improving, sustaining the initiatives launched by the adaptation project. Prepare an implementation plan identifying next steps, responsible person and organizations, timeline, and resource needs required to incorporate the climate change adaptations into the action. Give proper attention to consider enabling environment, institutional innovations and financial resources.



## Adaptation Planning Process

Whether working at district, VDC or community level the preparation of adaptation plans is often the most important aspects of adaptation processes. It can lead to an effective participatory planning process as suggested below:

1. Identify the hazards and assess the risk of them happening [can use tools (hazard ranking), (trend analysis), (hazard mapping).]
  - List down the risk and hazard occurring in the area
  - Identify climate related hazards and risk in the areas
2. Assess the impacts of those hazards [can use tools (hazard impact assessment), (livelihoods resource assessment) with (livelihoods vulnerability assessment), (hazard impacts on livelihoods).]
  - Identify the impact of climatic hazards on livelihood resources
  - Assess the degree of impact and its implications
3. Prioritise hazards based on severity of impact and vulnerability of resources and people [can use tools (hazard ranking), (vulnerability assessment), (vulnerability matrix).]
  - Which among the climatic hazards are significant and pose major threat
  - Which groups are more vulnerable in terms of impacts (women, children, old, ethnic, disadvantaged) and in which area/village or which category of users
4. Identify and assess existing capacity/assets to cope with and adapt to existing and future hazards [can use tools (livelihoods resource assessment), (coping and adaptation strategies assessment), (effectiveness of coping and adaptation strategies).]
  - What are the existing local knowledge, practices and mechanism to cope and address climatic risk and hazard
  - How effective are those responses?
5. Identify the critical gaps by analyzing degree of impact and effectiveness of responses.

- Assess the degree of impact and effectiveness of responses
  - Are the responses sufficient to deal with climate change impacts
  - What are the critical gaps?
6. Assess how existing resources can be used to fill the gaps and list actions [can use tool (livelihoods resource assessment).]
- What are the opportunities to fill the gaps (institutional innovations, livelihood resources/assets, existing fund, mechanism, technology, local practices, innovations etc)
7. Assess how remaining gaps can be filled by external partnerships [can use tool (adaptation partnership mapping).]
- List down the existing institutions and their key strength and weaknesses
  - Assess the capacity of institutional responses to deal with climate change impacts (which institution can play what role)
8. Prepare a plan of action based on prioritized risk of hazards, detailing actions that can be taken at community, VDC or district level and the available external support. The plan should be very specific about what will be done, where, when and by whom (Specific details is presented in the following session).
- What are the urgent/immediate, short term and long term actions to deal with climatic hazards and impacts (this should be based on using certain criteria identified by users or farmers on what do they mean by urgent or immediate)
  - How to implement the identified action (resources needed, time, who will be engaged, what kind of institutional collaboration, who implements, who monitors and how)

## Suggested Planning Tools (example)

Alternatively use can be made of the following adaptation planning process which is taken from Local Options for Communities to Adapt and Technologies to Enhance Capacity (LOCATE). It provides a systematic approach to designing community based adaptation based on SSNAPP (South South North Adaptation Projects Protocol). It can be used to identify and prioritize adaptation needs and activities along with potential partners and stakeholders. The entry point of LOCATE is specifically community based adaptation to climate change rather than a review existing projects to make them climate resilient or take benefits for adaptation to climate change. It uses key concepts and elements of the Sustainable Livelihoods Framework. However, it gives emphasis to relationships between different income streams of different communities and impacts of climate change on those streams while assessing vulnerability and adaptation needs. The four phases suggested in the framework support the generic steps suggested in the third assessment report of the IPCC (IPCC, 2001).

### Phase I: Finding Vulnerability “Hot-spots”

Communities and field level practitioners and facilitators jointly identify the risk related to climate change in their daily lives and identify which sectors are vulnerable and who among them is most greatly impacted.

#### Key questions:

- What is the vulnerability context?
- What are the vulnerable sectors?
- Where do the most poor and marginalised communities live?
- Who are the most vulnerable and why?

### Phase II. Development of adaptation plans

Communities and practitioners develop local level solutions to the challenges identified. The plans offer an opportunity to explore the future prospects of climate change mainstreaming.

**Key questions:**

- Which physical vulnerability context will be addressed (e.g. flood, cyclone, salinity, and drought)
- Which vulnerable groups and sector will be addressed (e.g. agriculture, water, fisheries, energy)?
- How to reduce exposure of the sector and communities to the problems?
- How to reduce sensitivity of the sector and communities to the problems?
- How to improve adaptive capacity of communities?
- What are the overall strategies to improve the situation?

**Phase III. Prioritization of adaptation plans**

Communities and practitioners can do this through cost benefit analysis and multi-criteria analysis. The multi-criteria analysis involves several criteria identified by communities (feasibility, cost effectiveness, impact, time etc). See the Annex 2 for some examples in prioritization. Activities can then be ranked and agreement made as to the top priorities.

**Key questions:**

- What is the best way of prioritising adaptation activities?<sup>1</sup>
- How best to prioritize and rank the problems or integrate activities?
- Which activities are urgent and immediate and which are long term?

**Phase IV. Identifying the implementation mechanism**

It is important that communities identify the mechanisms through which the practical action takes place so as to ensure timely intervention and to quickly benefit the most vulnerable and poor groups/communities. Support of all stakeholders is essential if the adaptation plan is to be well implemented.

**Key questions:**

- Who are potential project partners? Who is doing what and who knows what?
- Who is implementing what types of development, livelihood, and disaster management activities on the ground?

---

<sup>1</sup> The prioritization can happen in many ways but what is important is that it should be based on the criteria identified by communities. Communities engagement in the prioritization process is crucial.

- Is there interest in working on climate change adaptation? What are the main roles and responsibilities of key actors and communities?
- How can institutional capacity be improved?
- What are the sources of funding? What can be done at community level and what additional external support is needed?
- What kind of monitoring mechanism is needed?
- How can learning and good practices be institutionalized and scaled up?

## Key Learning on Community Based Adaptation<sup>2</sup>

CBA is a very recent development but a number of early lessons have already been learned from the limited set of CBA activities done around the world so far. They include:

1. To do any good, outsiders must first gain the trust of the communities they want to help. Normally this would mean spending a long time with the community. But if trusted local intermediaries (e.g. NGOs, community groups or government bodies) are available, it is best to start dialogue with them before moving to the communities themselves.
2. Climate change is an esoteric and initially confusing concept to many. Communication about it must use a community's own language and terms they can understand. This means not only translating scientific texts into local languages but also giving up on the written word altogether and using traditional means of communication such as art and theatre, or modern methods such as video.
3. When the cooperation of the local intermediary and the community has been obtained, the process of identifying what adaptations are appropriate can start. This requires initial learning about the community's indigenous capacities, knowledge and practices of how to cope with climate hazards in the past. New activities, technologies or practices can then be introduced.
4. Once set up, an adaptation project looks much like any standard development project (e.g. for water harvesting in drought conditions)

<sup>2</sup> Adapted from [www.iied.org](http://www.iied.org)

rather than a stand-alone response to climate change. The difference lies not in what the intervention is but in the inputs to the intervention. It is not what the community is doing but why and with what knowledge. The adaptation element introduces the community to the notion of climate risk and then factors that into their activities. This makes them more resilient both to immediate climate variability and long-term climate change. It should be noted though that the few existing CBA projects are so new that they have hardly been tested for resilience to climate variability let alone to climate change.

5. One important feature of the lessons from CBA so far is that learning itself requires practice. It is not possible to learn the theory of CBA in a university or training workshop and then apply it in the field — the learning comes from the practice itself. Adaptation is a classic case of learning-by-doing or ‘action-research’.
6. The theory and practice of CBA are in their infancy but both are likely to grow very rapidly. It is important now to allow as many pilot activities to be carried out as possible and to share the experience and knowledge gained from them. This is a major challenge of networking in real time between practitioners, policymakers, researchers and funders — and the communities at risk.

## Annex 1. Some Examples of CBA Interventions<sup>3</sup>

Sector	Climate Change Issues	Adaptation Responses
Water and Energy	Water scarcity due to drying of springs, ponds, rivers and natural springs; Energy crisis <i>Climatic Factor: Rainfall Variability</i>	Water harvesting technology (collection of rain water and water management in the upstream-improve technology by building water-supply systems in rural areas; improve technology by repairing wells), Alternative energy promotion (Improved cook stove, biogas etc)
Agriculture	Outbreak of pest and diseases, Declining yield Land degradation, Changes in cropping pattern  <i>Climatic factors: Rainfall variability and increased temperature</i>	Integrated Pest Management Promotion of environment stress tolerant crop varieties New technologies (System of rice intensification-shifting to grow new varieties and kinds of crops from rice as rice had become inappropriate under the present climate condition, Drip irrigation, diversification of home gardens, saving seeds-seed bank, organic farming, farming in degraded lands e.g. Bagare Kheti); institutional strengthening and raising awareness and capacity of communities, early seasonal forecasting
Forest and Biodiversity	Outbreak of Fire, loss of species, spread of invasive species <i>Climatic factors: Rainfall variability and increased temperature</i>	Community based fire management, Use of various technologies to utilize bi product of invasive species (e.g. bio briquette from Banmara); community based plantation in degraded areas
Land	Soil erosion and land degradation  <i>Climatic factors: Rainfall variability</i>	Integrated Hedgerow technology, Zero tillage practices, sustainable soil management, rehabilitation of degraded land through plantation (broom grass and multipurpose species), land zonation
Cross Cutting	Deal with major Climatic Hazards	Awareness raising (drama, poetry journey, local caravan, school based programme, fair etc) and capacity building (training, re visit etc), Policy engagement (communication material, policy brief, travelling seminar)

<sup>3</sup>These are examples only and it is important to note that adaptation plans are prepared by communities based on their local knowledge, available resources and need and aspiration

## Annex 2. Prioritization Criteria

Action Proposed	Criteria	Rating
	Benefit to the most Vulnerable Communities (Women, disadvantaged, poor, children, tribal and ethnic groups)	
	Cost effectiveness (low cost intervention, can be easily implemented with existing resources + some technical input)	
	Feasibility (is feasible to be implemented within existing resources and institutions), can be picked up by existing mechanism easily	
	Reduce current and future Climatic risks	
	Lead to long term environment sustainability	
	Has greater scope of adaptability and scaling	

Very High: 5, High: 4, Medium: 3, Low: 2 and Very Low 1

## Annex 3: Example of Community Based Adaptation Plan

Prioritized Adaptation action (s)	Key indicators or milestone (what it will achieve- results)	Who will implement	How it will be implemented (methodology)	How much resources is need (financial, human, institutional)	How it will be monitored	How it will be shared with others/scaled up including communication	Risk and mitigation plan
-----------------------------------	---	--------------------	--	--	--------------------------	---	--------------------------

## References

Bimal Regmi, Alex Morcrette, Apar Paudyal, Rishi Bastakoti and Sibongile Pradhan. 2010. Participatory Tools and Techniques for Assessing Climate Change Impacts and Exploring Adaptation options. LFP.

Bimal Regmi and Gyanendra Karki. 2010. Climate change mainstreaming in developing planning in Nepal

IIED, Lessons from Community Based Adaptation, [www.iied.org](http://www.iied.org).

IPCC AR4 Glossary 2007

LFP, 2010: Community adaptation planning in Livelihoods and Forestry Programme: key processes and progresses, LFP



Livelihoods and Forestry Programme (LFP)

c/o: DFID-Nepal

PO Box 106,

Kathmandu, Nepal

Tel: 977-1-4410010

Fax: 977-1-4410469

E-mail: [lfp@lfp.org.np](mailto:lfp@lfp.org.np)

<http://www.lfp.org.np>