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Perceived Climate Change Impacts and Local Adaptation Initiatives – A Case of Kathajor and Ghoksila Catchments of East Nepal

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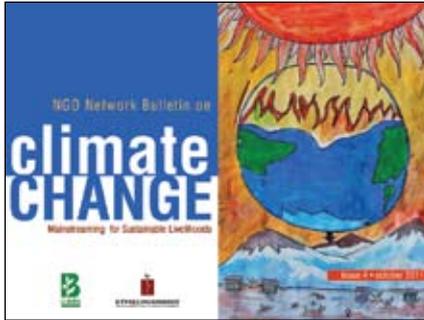
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Mainstreaming for Sustainable Livelihoods



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IN THIS ISSUE



Cover : A poster entitled 'The Impact of Climate Change' prepared by the students from 'Green Art Camp 2011' (See page- 46-48 for more).

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Maplecroft's climate change vulnerability index 2011 has ranked Nepal the fourth most vulnerable country. Nepal submitted its National Adaptation Programme of Action to UNFCCC, which has identified and prioritized the urgent and immediate adaptation options for the country. It has yet to receive 350 million US dollars to initiate implementation of these urgent and immediate adaptation options, despite Nepal having strongly negotiated in the UNFCCC and other international meetings to secure additional funding for adaptation and mitigation initiatives. The combined profile 1 of NAPA is in the implementation with the support of 14.6 million GBP from DFID and EU.

The government has started the preparation of the Second National Communication, identified technology needs to address climate change impacts, and expanded Reducing Emissions from Deforestation and Forest Degradation (REDD) related activities. In order to promote a low carbon development path, several activities are initiated to scale-up of renewable energy as well.

In the context of the principles of NAPA implementation and climate proof development in plans and programs of the government of Nepal, an integrated role of the government and civil society organisations is required for sensitizing common citizens and building their capacity, and to attain adaptation plans guided by the climate change policy 2011.

The government has recently signed to receive 86 million USD for a Piloting Programme on Climate Resilience (PPCR) that consists of 50 million USD in grant money and 36 million USD as a concessional loan. At the same time, the government's

acceptance of the climate loan has been widely criticized and opposed by many Nepalese civil society actors and networks as the acceptance contradicts what Nepal advocated at regional and international negotiations. There seems to be greater concern in developing countries like Nepal for a transparent and a reasonably just climate change financing. Developing countries should not be pushed to accept loans for resilience building. Rather, they should have a strong position as it is not justifiable to accept a climate loan to curb the potential damages of climate change primarily caused by developed countries. If developing countries are pushed, the climate negotiation process can shift its focus from the paradigm of financially supporting developing countries through grants to the paradigm of unjust support through climate loans.

At the grassroots level, vulnerable communities are expecting some concrete initiatives from the government and civil society organisations to adapt to the impacts of climate changes. It is time to identify and promote local and community led adaptation plans.

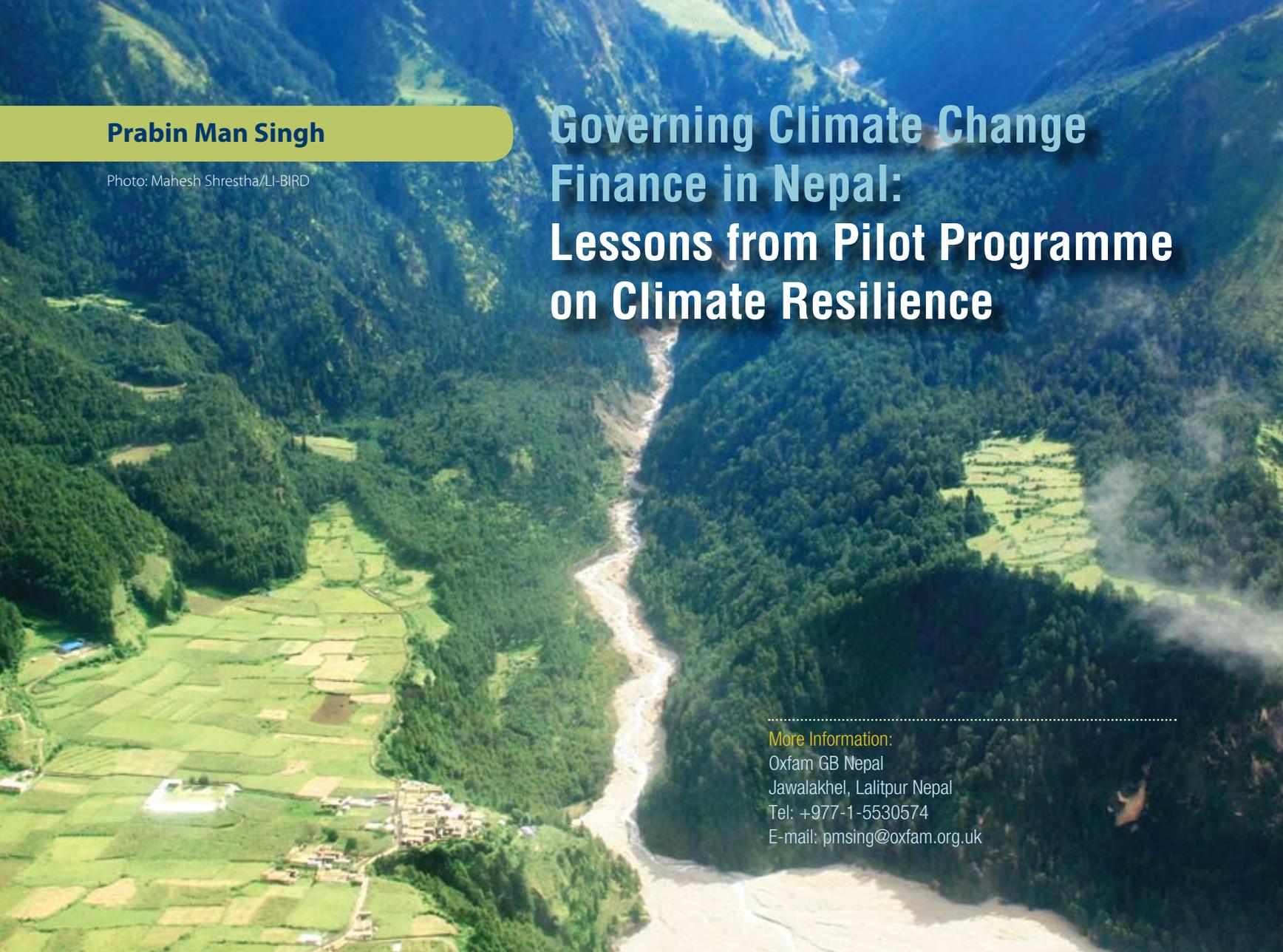
We hope that in Nepal, actions on climate change issues will commence sooner rather than later. There is ample scope for building our knowledge base, promoting adaptation measures and raising awareness on climate change issues.

In this context, we are publishing our 4th issue of the NGO Network on Climate Change Bulletin as a tool for knowledge sharing and information dissemination. This issue focuses on the debate on climate loan issues, community based adaptation cases and perspectives,

integration of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR), economical and political perspectives of climate change in Nepal and outlooks and tools for climate change communication. Controversy on the Pilot Program on Climate Resilience (PPCR), NAPA and challenges for climate finance governance in Nepal are discussed in the first article by Prabin Man Singh from Oxfam GB Nepal. The second article by Bimal Raj Regmi illustrates the emergence of community based adaptation, practices and challenges. The article by Jagadish C. Baral, Shankar Adhikari and Anita Shrestha describes the local initiatives for climate change adaptation in Nepal, based on a case from *Kathajor* and *Ghoksila* catchment of East Nepal. Climate change scenarios for Nepal are discussed in the article by Kanchan Mani Dixit. Issues on CCA and DRR integration are covered in Amrit Sharma's article, followed by an article on challenging Nepal's current activities in climate change, where Suhrid Prasad Chapagain stresses the need of political and economical perspectives. Perspectives on and tools for communicating climate change are included in this issue of the bulletin. Krishna Lamsal writes about the perspectives of climate change communication in Nepal. Sambida Rajbhandari presents art as a tool for climate change communication. A glimpse of activity news related to climate change is also presented as well as a short introduction and update on the NGO Network on Climate Change.

We also provide a foretaste of the upcoming issue. We will be pleased to receive your feedback, which will be useful for enhancing our next issue.

Enjoy reading,
Editorial team

An aerial photograph of a mountain valley. A river flows through the center, surrounded by lush green forests. On the left side, there are terraced agricultural fields and a small village. The mountains are steep and covered in dense vegetation.

Prabin Man Singh

Photo: Mahesh Shrestha/LI-BIRD

Governing Climate Change Finance in Nepal: Lessons from Pilot Programme on Climate Resilience

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Nepal has strongly negotiated within the United Nations Framework Convention on Climate Change (UNFCCC) and other international fora in order to secure additional funding for adaptation and mitigation initiatives.

Introduction

Nepal is the fourth most vulnerable country to the impacts of climate change¹. Glacier retreat, erratic rainfall resulting in decrease in agricultural productivity and drying of water sources are the most potent and immediate impacts of climate change. It is clear that Nepal's domestic resources are not adequate and the country would be highly dependent on international sources of funding to address those impacts. Nepal has strongly negotiated within the United Nations Framework Convention on Climate Change (UNFCCC) and other international fora in order to secure additional funding for adaptation and mitigation initiatives. Recently, Nepal has been receiving funding from various bilateral and multilateral donor agencies for working on climate change issues. The Pilot Programme on Climate Resilience (PPCR) is one major source of funding.

Pilot Programme on Climate Resilience (PPCR)

Nepal is one of the nine recipient countries of the Pilot Programme on Climate Resilience (PPCR). PPCR is a part of the Climate Investment Fund (CIF), a multi-billion dollar fund managed by the World Bank. The USD 6.5 billion fund includes funds for technology,

energy, forestry and climate resilience². PPCR focuses on building climate resilience in development work. 14 governments contributed to the fund, with the United States of America, the United Kingdom and Japan as the largest contributors. PPCR aims to pilot and demonstrate ways of integrating climate risk and resilience in core development planning³.

PPCR and Nepal

On March 11, 2009, the Government of Nepal submitted its interest in participating in PPCR. An agreement was signed between the Government of Nepal and the World Bank for technical assistance (TA) worth USD 225,000 to prepare the PPCR document on March 2010⁴. Several consultation meetings were held to prepare the document. In February 2011, a joint mission of the World Bank (WB), the International Finance Corporation (IFC) and the Asian Development Bank (ADB) approved the PPCR project document consisting of 5 components⁵.

1 <http://www.maplecroft.com/about/news/ccvi.html>

2 Web link : <http://www.climateinvestmentfunds.org/cif/funding-basics>
3 THE PILOT PROGRAM FOR CLIMATE RESILIENCE UNDER THE STRATEGIC CLIMATE FUND, Climate Investment Fund, November 2008. (Abstracted from: http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/SCF_TFC_Decision_PPCCR_Governance_Jan_27_2009.pdf)
4 NEPAL: PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR) WORLD BANK/ADB/IFC JOINT MISSION 15-21 NOVEMBER 2010 Aide Memoire, 10 December 2010.
5 NEPAL: PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR) WORLD BANK/ADB/IFC JOINT MISSION 9-18 FEBRUARY 2011 Aide Memoire.

The components are:

1. Building climate resilience of watersheds in mountain eco-regions
2. Building resilience to respond to climate related hazards
3. Mainstreaming climate risk management in development
4. Building climate resilient communities through private sector participation
5. Building climate resilience of endangered species

In total, USD 110 million was estimated for implementing the five components. This includes USD 41 million each for component 1 and 2, and USD 10 million, 13 million and 5 million for components 3, 4 and 5 respectively.

In a press release published in the CIF's website on July 1st, 2011 it said that the total of USD 110 million was approved under PPCR to Nepal⁶. But the news published in the national daily newspaper, which quoted Joint Secretary, Ministry of Environment, stated that only USD 86 million was approved to Nepal, and that this consists of a grant of USD 50 million and a loan of USD 36 million⁷.

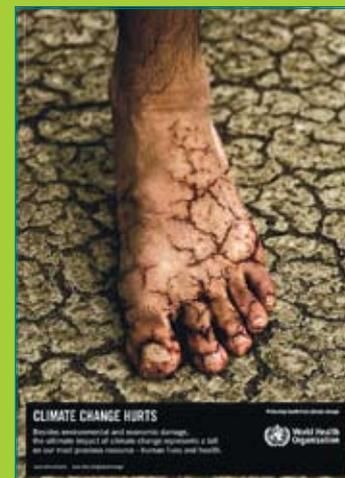
6 Press Release: Seven Low-Income Countries Move to Global Forefront on Climate Resilience and Sustainable Management of Forests (Web link: <http://www.climateinvestmentfunds.org/cif/content/seven-low-income-countries-move-global-forefront-climate-resilience-and-sustainable-manageme>)

7 'Reduce in Nepal's aid money on climate change Commitment of USD 60 million and decision made for USD 36 million' published in Rajdhani daily dated July 5, 2011 (published in Nepali language)

Loan Controversy

After initial public statements by the Ministry of Environment (MoE) refusing to consider taking a loan component under PPCR, the Government of Nepal nevertheless later decided to accept both the loan and the grant. Nepalese civil society groups put strong pressure on the government to refuse the loan for climate change adaptation as Nepal is not responsible for creating the climate change problems and because the country should comply with climate justice and 'the polluter's pay principle' as stated in Nepal's climate change policy. The discussion started with an exchange of e-mails between a few civil society members. Eventually, more civil society organisations joined the web-based discussion, as members started exchanging in-depth information on PPCR, and strengthened their arguments for rejecting the loan. However, the government was not receptive towards the civil society's expressions of concern. Some members called for strong protests as the date of the joint mission of the WB/ADB/ IFC on PPCR to Nepal approached. This led the MoE to start a dialogue with civil society groups organised by Climate Change Network Nepal (CCNN)⁸. During the meeting, the representatives from the Ministry presented their arguments in favour of the loan. They claimed that the money was for resilience and not

8 Dialogue was organised on 2 February 2011 in Kathmandu by Climate Change Network Nepal (CCNN) supported by Oxfam. 52 stakeholders representing various government agencies, national and international non-governmental organisations, media houses, and research institutions participated in the dialogue.



Nepalese civil society groups put strong pressure on the government to refuse the loan for climate change adaptation as Nepal is not responsible for creating the climate change problems and because the country should comply with climate justice and 'the polluter's pay principle' as stated in Nepal's climate change policy.



Not convinced by these arguments, many of the civil society organisations continued to urge the government to reject the loan and stated they would continue their opposition if the government accepted the loans.

for adaptation initiatives, and further that the loan was of a concessional type with a negligible interest rate and no conditions attached. More importantly, they claimed that the money will be spent in the productive sector; however, they provided no details on this. Not convinced by these arguments, many of the civil society organisations continued to urge the government to reject the loan and stated they would continue their opposition if the government accepted the loans.

While civil society organisations may have diverse views on the climate loan issue (some have considered it acceptable), a strong majority of the organisations active in the climate change debate, were clearly opposed to accepting a loan.

On the 13th of February 2011, 12 of these civil society organisations issued a joint statement urging the government not to accept the loan and to stand by its position on global climate negotiations as a Least Developed Countries (LDC) group member⁹. It states “We also oppose the World Bank on the pledging of a loan for adaptation and resilience to the nations that need immediate

⁹ SAY NO TO ‘CLIMATE LOAN’: Statement from Civil Society Organisations of Nepal. The 12 organisations that signed the statement are: NGO Federation of Nepal, Federation of Community Forest Users’ Group Nepal (FECOFUN), Global Alliance for Community Forestry, Irrigation Water Users’ Federation Nepal, Federation of Drinking Water and Sanitation Users Nepal, Jagaran Nepal, Women in Policy Advocacy Alliance, NGO Group on Climate Change, Forest Action Nepal, Campaign for Climate Justice Nepal, National Association of Community Electricity Users Nepal and Rural Enterprise Developers Groups Nepal.

financial support to adapt to the adverse effect of climate change. This is intended to devalue and defame the ongoing climate funding process under the UNFCCC mechanism.”

A recent report of the World Development Movement (WDM)¹⁰ claims that PPCR lacks legitimacy as it was created entirely outside the UN climate process in order to give the World Bank a central role in climate finance. The LDC group is opposing the role of the World Bank as trustee of the climate change fund. It is also advocating for all climate finance to be channelled through the UNFCCC framework. In contrast, the developed nations are willing to invest outside the UNFCCC and are proposing the World Bank as a trustee of a global fund on climate change.

NAPA and PPCR

The National Adaptation Programme of Action (NAPA) document was prepared and endorsed by the Nepalese cabinet and submitted to the UNFCCC in 2010. NAPA has identified nine priority projects on climate change adaptation and estimated a cost of USD 350 million. PPCR was developed based on the same thematic sectors identified by NAPA and it had also mobilised the same thematic working groups

¹⁰ Worthy, M., & Jones, T., (2011) Climate loan sharks: How the UK is making developing countries pay twice for climate change, World Development Movement and Jubilee Debt Campaign, pp: 7.

involved in the NAPA process. A PPCR Aide Memoire (September 3-6, 2009) stated¹¹:

“As the NAPA is under preparation in Nepal there is an opportunity to establish synergy between the PPCR and NAPA in terms of linking analysis, prioritization and future investments. [...] Where the projects identified in the NAPA are consistent with the objectives of PPCR, selected adaptation projects and activities will be financed through PPCR resources.” The document, however, has lately been significantly changed as the subsequent joint missions of the World Bank/ADB/ IFC have suggested priorities different than those of NAPA¹². The government had wanted funding from the PPCR to fund its existing national adaptation plan. Instead, the World Bank decided that in line with its own policies, the PPCR must build on existing national adaptation plans rather than fund them¹³.

PPCR was criticised because it failed to prioritise the agriculture sector as NAPA had done¹⁴. NAPA has prioritised agriculture and food security as one of six sectors that are vulnerable to climate change

and it also recommended immediate and prioritised initiatives in the agriculture sector. PPCR has failed to align with the national priorities as identified in NAPA.

In Nepal, PPCR consultation has been limited between the government officials and the banks' consultants, including only a few selected civil society organisations. Lately, as the loan controversy has earned attention, a few more civil society organisations were consulted. However, major civil society organisations were not consulted. In Nepal it is widely felt that the consultative approach and receptiveness to civil society inputs shown by the Ministry of Environment while formulating the NAPA process was lacking in the PPCR process. More importantly, whereas NAPA had carried out a gender analysis, PPCR failed to address gender issues.

In Tajikistan total Multilateral Development Bank fees for PPCR amounts to USD 2.3 million. In St. Vincent and in the Grenadines it is 4 percent of the total finance package¹⁵. PPCR claims to provide a concessional loan with a low interest rate. However, the high service charges of the banks noted above are a cause for concern. Will Nepal receive a fair deal?

- 11 Draft Aide memoire Multilateral Development Bank (MDB) Programming Mission for the Pilot Program for Climate Resilience (PPCR) ADB/IFC/ World Bank – Government of Nepal (September 3-9, 2009), pp. 2-3 abstracted from weblink <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/AM%20PPCR%20Nepal.pdf>
- 12 Wiseman, K., & Chettri, R. (2011) MINDING THE MONEY: Governance of Climate Change Adaptation Finance in Nepal, Oxfam International.
- 13 Ayers, J., Kaur, N., & Anderson, S. (2010) Negotiating Climate Resilience in Nepal, IDS Bulletin.Vol.42. No. 3. Pp. 70-79.
- 14 Agriculture ministry sows seeds of doubt' news published on The Himalayan Times daily dated 21 February 2011.

15 Op. ct. Worthy, M., & Jones, T., (2011), pp. 8.



The younger generation should be considered when making decisions on climate change issues.

Photo: Mahesh Shrestha/LI-BIRD

The government had wanted funding from the PPCR to fund its existing national adaptation plan. Instead, the World Bank decided that in line with its own policies, the PPCR must build on existing national adaptation plans rather than fund them



Table 1: NAPA and PPCR: overview of key features¹⁶

	NAPA	SPCR/PPCR
TIMING	<ul style="list-style-type: none"> May 2009: started developing plan 	<ul style="list-style-type: none"> March 2010: started developing plan.
FUNDING TO DATE	<ul style="list-style-type: none"> US \$1.325m: 200,000 (from GEF/LDCF); 50,000 UNDP; 875,000 DFID; 200,000 DANIDA supplemented in country. 	<ul style="list-style-type: none"> \$225,000 for technical assistance (from Strategic Climate Fund); \$ 110 million for programme implementation.
GOVERNANCE AND OPERATIONAL MECHANISM	<ul style="list-style-type: none"> Multi-donor trust fund under UNFCCC's Global Environment Facility, LDCF Global – under GEF Assembly, Council, Secretariat. Guidance of the Least Developed Countries Expert Group WB serves as Trustee In country, pooled fund under UNDP Operated under separate Project Implementation Unit under MoE with international and national consultants. 	<ul style="list-style-type: none"> Multi-donor trust fund outside UNFCCC through Climate Investment Fund Global - PPCR Sub-Committee (PPCR-SC) oversees operations and activities of the Pilot Program. Governed by SPCR sub-committee guidelines WB/IBRD serves as Trustee In-country managed jointly by World Bank and ADB. Operated under separate Project Implementation Unit under MoE with international and national consultants.
DESIGN PROCESS	<ul style="list-style-type: none"> Six thematic or sectoral areas, under a thematic working group headed by different ministries. Involved series of consultations around the country, reviews and appraisals. Focus on knowledge management and stakeholder coordination through additional donor funding in-country. Plan approved by the Cabinet. 	<ul style="list-style-type: none"> Used NAPA thematic groups for consultations. Carried out further or new assessments beyond NAPA's. Milestone decisions through WB/ADB missions
CONTENT	<ul style="list-style-type: none"> Identified over 40 projects, prioritised 9, under different themes and sectors Anticipates 80% of funds being spent at the village/municipal level, channelled through a designated implementing line ministry MoE is responsible for overall coordination and reporting and liaising with the Climate Change Council MCCIIC (Multi-Stakeholder Climate Change Initiatives Coordination Committee) established as main coordination forum. 	<ul style="list-style-type: none"> Five inter-related components with some cross-over on NAPA identified priorities. Implemented through designated project management units, with component coordination committees chaired by secretaries of the respective component lead agencies. Climate change program steering committee will monitor results and provide coordination, chaired by Minister of MoE. MoE secretariat.
BUDGET	<ul style="list-style-type: none"> Budgeted US\$ 350 million for 9 prioritised projects 	<ul style="list-style-type: none"> Anticipated budget of \$110m: 50m grants & 60m loans.
CURRENT STATUS AND NEXT STEPS	<ul style="list-style-type: none"> \$10-12 million is likely from LDCF but largely underfinanced. 	<ul style="list-style-type: none"> \$ 86m approved for funding (\$50m as grant and \$ 36m as loan)

16 Op. ct. Wiseman, K., & Chettri, R. (2011), pp: 23 and revised as per the recent updates.

Challenges for Climate Finance Governance in Nepal

As the global climate negotiation reaches Durban, South Africa later this year, there will be much more clarity on the global climate finance architecture. Presently, it is likely that more funds will be available outside the convention unless something dramatic happens in Durban on the issue of the 'Green Climate Fund'.

Whatever happens in Durban, it is likely that LDC countries, like Nepal, will be getting more funds for climate change projects, both within and outside the convention. Nepal must prove itself eligible to receive these funds. Many of these funds will have strict criteria of selection and require strong proposals and other prerequisites. The Ministry of Environment in Nepal must strengthen its capacity to meet those criteria. The ministry is still yet to be approved as the National Implementing Entity (NIE) of the Adaptation Fund.

Nepal must demonstrate its leadership in the planning and usage of climate funds, and must also be cautious in selecting suitable funds in line with its best interests. Nepal's climate change policy endorsed 'climate justice' and the 'polluter's pay principle'. The country is strongly advocating these principles in

global negotiations. All decisions made on climate change finance must respect and be in line with this policy.

Managing funds has always been a problem in development finance. A huge amount of development funding is directly channelled by the bilateral and multilateral development organisations outside the national budget¹⁷. Again, Nepal's climate change policy targets to disburse 80% of the funding on climate change at community and village level. It is likely that climate finance will face similar problems unless strong measures are in place to strengthen systems for accountability and use of funds.

Oxfam's new report on adaptation finance recommends the country government to step up to lead and to create national processes that are responsive to the needs of their most vulnerable communities¹⁸. To encourage progress in this direction the report suggests the following points:

1. Donor communities must put developing countries in the driver seat.
2. Developing countries should exercise leadership
3. Developing countries' plans and funds must be accountable to the most vulnerable communities.

17 OECD (2008), 2008 SURVEY ON MONITORING THE PARIS DECLARATION MAKING AIR MORE EFFECTIVE BY 2010.

18 Owning adaptation: Country-level governance of climate adaptation finance, Oxfam, 2011.



The communities living under such water towers are facing water crisis due to increased melting and erratic snowfall. Photo: Mahesh Shrestha/LI-BIRD

It is likely that climate finance will face similar problems unless strong measures are in place to strengthen systems for accountability and use of funds.



Farmers' needs need to be reflected in the climate change plans and programmes.
Photo: Krishna Lamsal/LI-BIRD

The government must expedite the process to formulate the fund. A big challenge is to earn the trust of donor agencies and to convince them to invest money in the fund.

Climate Change Trust Fund

To avoid the pitfalls and weaknesses mentioned above, the government should manage climate funds through one single window. Nepal's climate change policy envisioned the creation of a climate change fund. It further says that the fund should encompass all money for climate change initiatives received by the government of Nepal from all sources outside and inside the convention¹⁹. The government must expedite the process to formulate the fund. A big challenge is to earn the trust of donor agencies and to convince them to invest money in the fund. The government needs to build on 'The Donor Contract,' signed in 2009, and gain the trust of donor agencies by proactively allocating its own resources for climate change initiatives from the national budget.

A powerful and legal multi-stakeholder board should manage the fund in order to improve accountability and transparency on its use. The board should include representatives from concerned line ministries, departments and government agencies, civil society groups and donor agencies. The board must be democratic and member representatives should be selected through an open and consultative process rather than being appointed. Currently, the Multi-stakeholder Climate Change Implementation Coordination Committee (MCCICC) can be transformed into this board, having a strong legal mandate.

¹⁹ Climate Change Policy 2010, Ministry of Environment, The Government of Nepal.

Conclusion

The Pilot Program on Climate Resilience (PPCR) is a major programme on climate change that is being implemented in Nepal. Recently, the Government of Nepal signed a deal with the World Bank worth USD 86 million, consisting of a grant of USD 50 million and a loan of USD 36 million. The majority of civil society groups in Nepal have criticised the government for taking a loan for climate change adaptation initiatives. In addition, PPCR has failed to address and align with the national priorities identified by NAPA. The climate change trust fund envisioned by the climate change policy must immediately be put in place. The trust fund must be governed by a multi-stakeholder democratic board that is fully empowered through an appropriate legal framework. If Nepal takes appropriate action to address the above mentioned issues it will be able to utilise available resources more effectively to assist those affected by the serious adverse effects of climate change.



Bimal Raj Regmi

Photo: LI-BIRD Photo Bank

Revisiting Community- Based Adaptation

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Lessons from the analysis also reveal that incorporating adaptation in mainstream development is a win-win approach that can bring more synergy and efficient resource mobilisation.

Introduction

Climate change is a reality now and its impacts will be felt by marginalized and resource poor communities through a multitude of impacts in both natural and social systems (Adger 2003, p. 387). Climate change adaptation is discussed within the broader context of sustainable development (Adger, Huq et al. 2003). The work of Traerup (2010) focuses on drawing literatures to support the argument about synergy and linkages. The strong link between climate change adaptation and sustainable development is highlighted by many researchers in their articles and book chapters. The authors argue that collaboration and synergy between both sciences is key to ensure a sustainable future (Munasinghe 2001; Markandya and Halsnæs 2002; Sperling 2003; Swart, Robinson et al. 2003; Agrawala and Ahmed 2005; Munasinghe and Swart 2005; Huq, Reid et al. 2006; McGray 2007; Dowden 2008; Grist 2008; Nolon 2009; Parry 2009; Salih and Opschoor 2009; Cohen 2010; KLEIN 2010; Ayers 2011).

Climate change adaptation has now been used in the majority of the disciplines. The development communities are making the best use of it in order to advocate the similarities of development and adaptation interventions. Tanner and Allouche, (2011) argue that adaptation and development is situated within existing poverty levels and income

inequalities. The disaster risk reduction communities¹ are advocating for commonalities in disaster risk management and adaptation. Similarly, groups working with natural resource management as well as other groups also claim that many of their activities are similar to adaptation activities. This interest of development communities to adopt adaptation pathways is very encouraging. Lessons from the analysis also reveal that incorporating adaptation in mainstream development is a win-win approach that can bring more synergy and efficient resource mobilisation (Huq, Reid et al. 2006; Huq 2008).

Emergence of Community-Based Adaptation

Community-based adaptation (CBA) emerged as a strong approach and theory to facilitate adaptation in developing countries. Community-based adaptation has evolved alongside the UNFCCC negotiations and developed a distinctive set of terminology and community of practice. The rationale for community involvement or community-based activities is now well established. Because community-based activities and organisations are rooted deeply in the society and culture of an area, they enable people to express their real needs and priorities. This allows problems to be defined correctly and responsive measures to be designed and implemented (Uitto and Shaw

¹ communities that are engaged in development or disaster risk reduction projects

2006). Together, development and climate change professionals have increasingly adopted the discourse and practice of community-based adaptation (Dodman and Mitlin 2011).

Ayers and Huq (2009) also argue that community-based adaptation emerged out of a growing recognition in the developing community that those most vulnerable to climate change are the poorest people in the world's poorest regions. Community-based adaptation aspires to build the resilience of communities by enhancing their capacity to cope with and better adapt to both climate variability and changes (Ayers, Alam et al. 2010). The community-based adaptation approach has its conceptual roots in resilience, implying that it recognises that environmental knowledge, vulnerability and resilience to climate impacts are embedded in societies and cultures.

The community-based adaptation to climate change approach, which has developed considerable currency with civil society organisations, is designed to help the poorest and most vulnerable communities adapt to climate change (Huq and Reid 2007). It has often been referred to as a bottom-up adaptation approach, which recognises that the majority of finance for climate change adaptation is currently channelled through national governments, with no assurance that these resources will reach those who need them the most. Consequently, the focus

of community-based adaptation is on empowering communities to take action themselves based on their own decision-making processes, and shaped by their own knowledge as resilient actors (Ayers and Forsyth 2009).

Community-Based Adaptation in Practice

Community-based adaptation has primarily been popular in Least Developed Countries (LDCs) and among many adaptation and development communities. Huq and Reid (2006) perceive that community-based adaptation can be viewed simply as an additional (though fairly new) layer of community-based development activities, practices, research and policies. Community-based adaptation begins by identifying the communities in the developing world that are most vulnerable to climate change. 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.

There is a history of advancement in community-based adaptation due to efforts put forward by some researchers in international conferences on community-based adaptations, which occur every 2 years. In the first community-based adaptation workshop, the participants discussed possible



Integrating scientific knowledge in community-based adaptations is important to respond to extreme climatic condition.

Photo: LI-BIRD Photo Bank

The community-based adaptation approach has its conceptual roots in resilience, implying that it recognises that environmental knowledge, vulnerability and resilience to climate impacts are embedded in societies and cultures.



Wise use of available resources is important for adapting to climate change.
Photo: LI-BIRD Photo-Bank

Community-based adaptation begins by identifying the communities in the developing world that are most vulnerable to climate change.

impacts of climate change on local communities living in vulnerable areas and how to enable them to adapt to climate change in the future. In the second community-based adaptation conference, the Community-Based Adaptation Network was formed to forge a strong alliance among the community-based adaptation practitioners. The third conference agreed to establish the Global Initiative on Community-Based Adaptation (GICBA) to Climate Change, a network seeking to support community-based adaptation-related activities by generating and sharing relevant knowledge. In the fourth conference, participants held rich discussions on different ways of advancing the approach. Recurring issues raised at the first international conference on community-based adaptation held at Dhaka on March 2011 revolved around its theme of scaling up successful projects (IISD 2011). The workshop has been a venue to share learning and find ways of addressing some of the challenges in community-based adaptation. It has also been meaningful to refine the approach and to provide opportunities for increased networking and collaboration among climate and development communities.

There are many advantages of promoting community-based adaptation projects and initiatives in developing countries. It is a promising approach to manage the risks associated with climate change, as it can empower communities and offer synergies with broader poverty and sustainable development

objectives (Heltberg, Siegel et al. 2009). The supporters of community-based adaptation argue that it is advancing well and contributing to building resilience and to addressing social vulnerability in many Least Developed Countries. Donor agencies have also shown great interest in investing in community-based adaptation, recognising that it is a valid approach for building adaptive capacity in vulnerable communities (Ayers and Forsyth 2009). There is fair recognition among development organisations that community-based adaptation can be an effective way to address short term adaptation responses in countries that are in transition, conflict or in the process of rebuilding.

In the last 8 years, there have been many small-scale initiatives that have tested and promoted community-based adaptation practices locally and nationally. A country like Bangladesh is in an advanced stage of innovating initiatives and generating lessons on community-based adaptation. Other countries are also adopting these practices. Huq and Reid (2007) reveal that it is now important to support as many community-based adaptation activities as possible and to share the experience and knowledge gained. One important feature of the lessons from community-based adaptation so far is that learning itself requires practice. It is not possible to learn to implement the theory of merely in a university classroom or training workshop; the majority of the learning takes place in the field and comes from the practice itself. Adaptation is a classic case of

learning-by-doing or ‘action-research’. One of the unique aspects of community-based adaptation is that it involves a huge number of civil society and community-based organisations.

Community-based adaptation has similarities to the development paradigm. It is based on the thought of “adaptation as a development approach”. Ayers and Forsyth (2009) argue that responding to the concept that adaptation is local and place based, and that community-based adaptation addresses the local specific nature of vulnerability. Community-based adaptation rests, in principle, on local participation and ownership in designing and implementing adaptation responses. It considers that adaptation strategies must be generated through participatory processes, involving local stakeholders and development. Community-based adaptation initiatives have been popular in the Least Developed Countries due to local specific successes and impacts. However, some argue that treating adaptation as development is often problematic as it is often difficult to determine the significance and urgency of addressing climate risk (Ayers 2011).

Challenges in Community-Based Adaptation

Despite the rapid progress in the development of and the sharing of knowledge on community-based adaptation, challenges still remain. Whilst the number of community-based adaptation case studies is proliferating, it will be important to find practical ways to ‘scale up’ initiatives and to draw out and communicate lessons from community-based adaptation more widely (Reid 2010). The conference on community-based adaptation concluded that the challenge for community-based adaptation is to scale up the approach’s successful projects (IISD 2011). Institutionalising community-based adaptation within development programmes, particularly government programmes, will be a problem in the days to come. The issues around scaling are also highlighted by Ayers (2011, p. 840) who argues that despite the potential of community-based adaptation in operationalising local inclusiveness, scaling up of initiatives to include climate policy is problematic because little attention is paid to the wider policy-making context of adaptation. Similarly, Ensor and Berger (2009) highlight the challenges around community-based adaptation due to the lack of a conducive policy environment and support from the government.



Nursery for promoting local diversity and community ownership.
Photo: Krishna Lamsal/LI-BIRD

Community-based adaptation rests, in principle, on local participation and ownership in designing and implementing adaptation responses. It considers that adaptation strategies must be generated through participatory processes, involving local stakeholders and development.



Local climate compatible development and planning is vital for sustainable livelihoods.
Photo: LI-BIRD Photo-Bank

Institutionalizing community-based adaptation within development programmes, particularly government programmes, will be a problem in the coming days.

The challenge of community based adaptation is to get out of the confined, project based and NGO branded boundaries and join mainstream development. In relation to community-based adaptation, some critics have pointed out that when community-based adaptation is defined as an approach to adaptation alongside wider scale adaptation planning, the result is a 'one project, one community' approach that actually encourages an 'aggregated community' discourse (Dodman and Mitlin 2011). The project-driven and small-scale intervention approach in community-based adaptation is also a challenge for its wider scaling and mainstreaming. Further, it is taken as a NGO or a community organisation initiative, often lacking support from the government. The challenge of the project initiative regarded its sustainability after the completion, and the incorporation of the community-based adaptation practices in the local development policies and government plan (Shaw 2003).

Community-based adaptation practitioners must aim to be more strategic and address a wide range of climate change policies and measures (Ayers and Hug 2009). It is essential that community-based adaptation practitioners and researchers learn from and are much more closely engaged with development actors, as well as draw on the well-established livelihoods literature and policy approaches (Sabates Wheeler, Mitchell et al. 2008).

Hug and Reid (2007) also believe that 'the theory and practice of community-based adaptation are in their infancy, but both are likely to grow very rapidly. It is important to allow as many pilot activities to be carried out as possible and to share the experience and knowledge gained from them'. Reid et al (2009, p. 27) argue that community-based adaptation has a lot of challenges. According to the authors, power structures are at the heart of climate change vulnerability. It is therefore necessary to encourage the active role of communities to shape the policy as well as influence the negotiation process. To be successful in community-based adaptation, communities need to be the custodians of policy and programme development. Ownership should rest on them.

The literature in community-based adaptation shows that the foremost challenge ahead is to mainstream community-based adaptation within development planning processes. Ian Burton, University of Toronto, speaking at the opening of the fifth international conference on community-based adaptation, emphasized the need to expand community-based adaptation to all communities, to link it to development at national planning levels, to integrate adaptation into new areas, and to make it more strategic (IISD 2011). Furthermore, to maximise community-based adaptation's influence, practical ways of consolidating lessons, sharing knowledge and scaling up the approach are needed. In this way, the approach will become relevant to larger-scale

adaptation policy-making at the same time as its own participatory and community-driven nature remain intact. It is also necessary to find practical ways of making community-based adaptation replicable in a variety of settings, so that it can be scaled up with the least damage to its participatory nature (Reid 2010).

Conclusion and Way Forward

The global and national scenarios clearly anticipate that one of the best ways to ensure effective integration and mainstreaming of climate change adaptation and development is to start intervening in the planning process. Effective adaptation has to be planned and delivered across a range of scales. Recognising this, the Copenhagen adaptation text has included the principle of 'subsidiarity', or making decisions and implementing response measures at the most appropriate level. In theory, subsidiarity should be operationalised through decentralised institutional designs that are responsive to local level vulnerability contexts, but that also accommodate wider adaptation planning scales (Dodman and Mitlin 2011). However, existing institutional designs for adaptation generally focus either on the national level, through National Adaptation Programmes of Action (NAPAs), or comprise of community-based adaptation initiatives that have tended to take a project based approach and that are detached from broader climate and development policy contexts.

It is critical that community-based adaptation should be a means of implementing adaptation priorities identified in NAPA. The nexus of NAPA and community-based adaptation can offer the best modality to effectively promote adaptation responses in developing countries. However, there is lack of discussion around how community-based adaptation can support the NAPA implementation and vice-versa. There is also a significant lack of middle-range proposals for adaptation planning and delivery that can meet the requirements of subsidiarity in practice (Reid 2010). Addressing planning deficits will be crucial to the success of promoting effective adaptation initiatives at national and local levels. Institutionalisation of community-based adaptation demands a mainstreaming approach in order to successfully imbed climate change within development priorities.

The research and development community has important tasks ahead in finding ways to address some of the dilemmas regarding putting community-based adaptation in practice and sustaining it. The lack of clarity on the operationalisation of adaptation planning further outlines the need for studies and research that suggest/devise strategic frameworks of action and modalities in order to address the uncertainty in community-based adaptation and mismatches in planning. If this is done, then it will smoothly and effectively drive forward the adaptation agenda in poor and developing countries like Nepal.



Climate change policies must consider small farmers and community-led innovations.
Photo: Mahesh Shrestha/LI-BIRD

Effective adaptation has to be planned and delivered across a range of scales. Recognising this, the Copenhagen adaptation text has included the principle of 'subsidiarity', or making decisions and implementing response measures at the most appropriate level.

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Communicating Climate Change through Forum Theatre

Mahesh Shrestha/LI-BIRD

Forum theatre known as *Kachahari Natak* in Nepali, is a theatre form created by the innovative and influential practitioner Augusto Boal from Brazil, which form is also known as “Theatre of the Oppressed.”

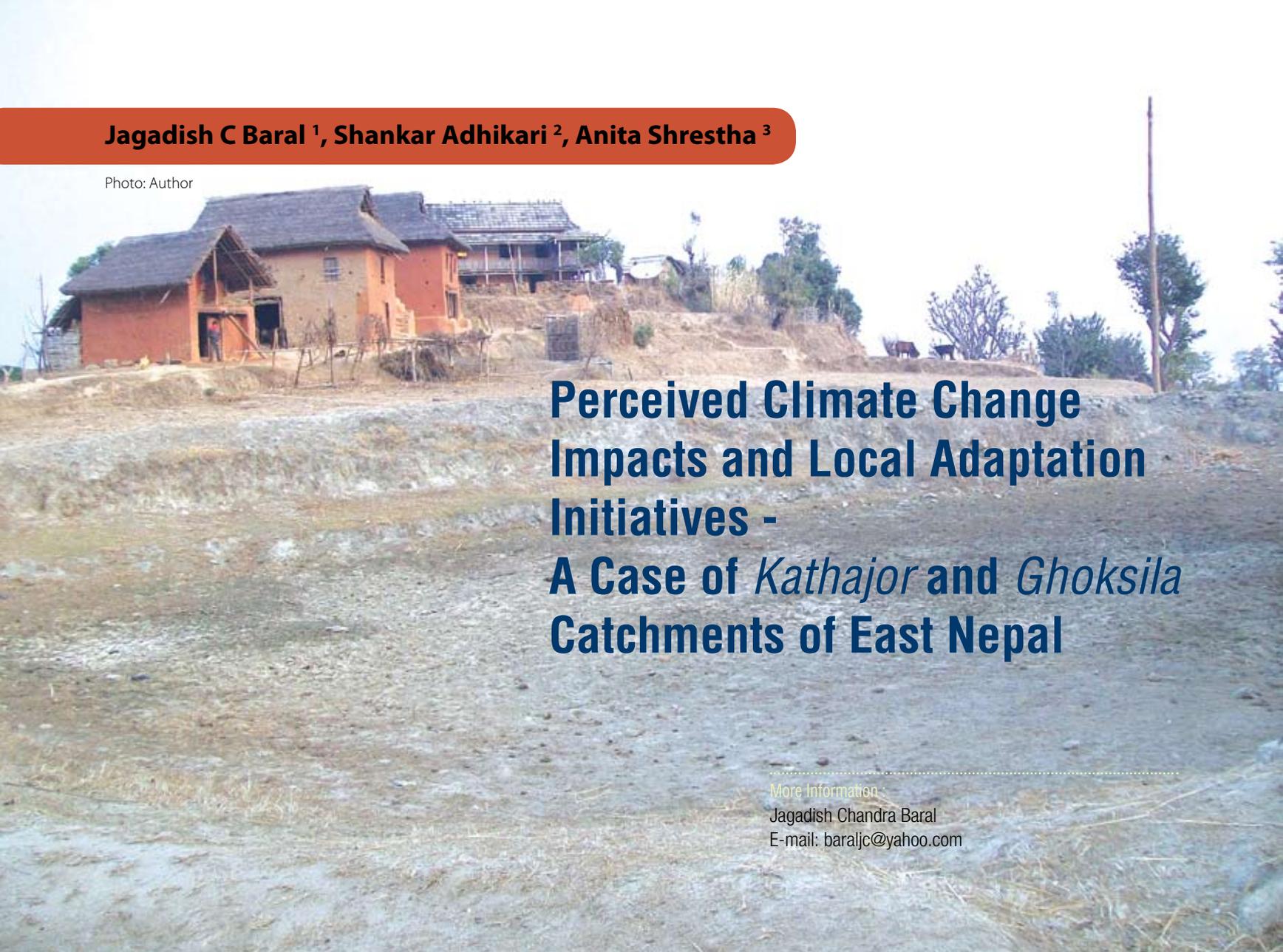
The actors will only present the first part of a play, which somehow embodies a conflict or a theme of relevance to the audience. At any given moment, the play’s master or narrator (*Sutradhar* in Nepali) may intervene, and stop the performance, asking the audience for their opinion on how to continue the play. In which ever way the audience wants the story to proceed, the actors will play it. The suggestions and their consequences are being explored and solutions may be found. In this way, the audience is challenged to reflect on the themes of the play and is turned into active participant. The ultimate aim is to empower the audience to become equally reflective and active actors in their own lives. That is why this theatre form is also known as participatory theatre.

Photo: Sachesh Silwal and Keshab Thapa/LI-BIRD



Jagadish C Baral ¹, Shankar Adhikari ², Anita Shrestha ³

Photo: Author



**Perceived Climate Change
Impacts and Local Adaptation
Initiatives -
A Case of *Kathajor* and *Ghoksila*
Catchments of East Nepal**

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For instance, monsoons have failed since 2006, causing large-scale impacts on drinking water, agriculture productions, biodiversity and ultimately on people's livelihoods.

Introduction

The International Panel for Climate Change (IPCC) has recorded a 0.74 degree Celsius rise in average global temperature over the last century. This is essentially attributable to rapid industrialization, which caused large-scale emissions of Green House Gases (GHG), which trapped solar radiation in the atmosphere, resulting in temperature rise. Temperature rise is the main factor causing global climate change. The impacts are already stark and severe despite the fact that the recorded temperature rise is only a fraction of the future predicted rise. High rates of glacial retreat in the Himalayas, melting of polar ice caps, and rapid conversion of tropical rainforests into savannahs are examples of the most visible physical impacts. These have concomitant impacts on biodiversity loss, desertification and on the overall livelihoods of a large number of people across the globe in general, and in the developing world in particular. The vulnerability of the developing world is attributed to their poor coping ability, which is essentially a factor of poverty, remoteness and a low awareness level.

This article, based on quick observations in Ghoksila of Sindhuli District and its surroundings, intends to provide a glimpse of how rural areas of Nepal might be suffering from the adverse impacts of climate change. The paper concludes by suggesting that action research may be an option to find an appropriate way to reduce climate change impacts. Oral histories of the local residents is the basic source

of information, made from the experience of the first author, who was born and brought up in Ghoksila.

Perceived Climate Change

Local people can clearly remember how the area had witnessed extreme climatic conditions for several years in the past. A situation, characterized by 'either too much water, or no water at all' did persist. The area saw torrential rainfall in 1981, 1984 and 1993. These incidences had devastating effects that swept away over 1000 *ropani*¹ of *Khet land* and also caused widespread landslides around the village. The years in between, however, were characterized by prolonged drought, resulting into conspicuous impacts on local livelihoods. For instance, monsoons have failed since 2006, causing large-scale impacts on drinking water, agriculture productions, biodiversity and ultimately on people's livelihoods.

The people have been unsure whether monsoon rain would come at all this year and, if so, in what form? Will it be able to replenish their already desiccated landscape? The situation as it stands today is pathetic. The previously lush green forests now look sick due to heavy moisture stress. Mature lagerstroemia, guava trees and young pine trees are already dead or dying. Custard Apples (*aanti*), the celebrated poor man's fruit that grew everywhere in the forests, now refuse to fruit or rot before maturing. The forests are infested by an alien species called *Eupatorium Spp.* (*Seto Banmara*), which competes with

1 1 Ha is equivalent to 20 ropani

other friendly vegetation for moisture and nutrients, and also contributes to a high susceptibility to forest fire. Landslide scars are everywhere. The Boksi Bhir, the old landslide, is extending its domain which is feared to engulf a large part of the village. Virtually all water sources in the village have gone dry. Thuli Pokhari, the renowned pond with water all the year round and located in the middle of the village, has not been filled with water in the last decade. It was distressing to note that the waterholes Kolekholsa and Dhayerni, where the first author of this article used to give company to his mother while fetching water. Now, they no longer exist. Desperate villagers found no other option but to bring water in the village from a distance through the use of poly-pipe. However, that resource is also drying very quickly and the villagers must resort to rationing the water so that one household gets just enough water to drink. The severe drought condition has a heavy toll in the rain-fed *bari* production system. The traditional crop varieties, such as millet and horse gram (*gahat*), could hardly be grown. Consequently, the villagers prefer to leave their land vacant, rather than risking crop failure. Maize has been attempted to be grown in some places, but the people complain that it dies before sprouting. Furthermore, traditional varieties of paddy refuse to yield meaningfully.

An Even Scariest Future

Several abnormal incidences that really worry the already desperate villagers are appearing. The

supposedly perennial Ghoksila Khola has become virtually ephemeral. The villagers are already forced to plea to the communities in the upper catchment to refrain from irrigating their *khet* so that some water can be released into the stream for the irrigation of their *khet*. Drying up of the Ghoksila Khola has caused the abandonment of the hydropower in Sungure, which supplied electricity to Ramechhap until recently. Ramechhap now gets electricity from the national main grid instead. The villagers have noticed strange behavior among several birds. *Kafal Pakyo* (a particular type of Cuckoo), a bird of higher altitude, sometimes sings around the village whose altitude is merely 3500 ft. They are baffled to note that common crows and vultures have been out of sight for over a decade, something which they foresee as a harbinger of dangerous future.

Desperate Adaptation Efforts

The people try to adapt to the new adverse situation, but often with desperation. Drinking water is their 'number-one' priority, as no other livelihood opportunities could be expedited unless this basic need is addressed. However, there is no easy answer to this, as the source of water can be found nowhere near and getting it from the distance implies prohibitive costs. The desperate people find no options but to move to the *besi* (lower valleys), in hopes of getting enough water both for themselves and their livestock from the streams nearby. However, not all in the village



Ghoksila khola
Photo: Shankar Adhikari

Drying up of the Ghoksila Khola has caused the abandonment of the hydropower in Sungure, which supplied electricity to Ramechhap until recently.



Water difficulty in Kathjor village
Photo: Shankar Adhikari

Kathajor, Manthali and Pakarbas of Ramechhap district have a hard reality to share regarding the plight of their drinking water.

are fortunate enough to resort to this option. Those, whose *khet* lands have been swept away by the flood (and have not been reclaimed thereafter), cannot choose this option as they need some production base to survive. Likewise, many poor, who do not have *khet* land in *besi*, do abstain from this option. Hence, for these people, the only options left will be either staying back to face a miserable and uncertain life, or to move out of the village for good. Neither of these are comfortable for them, but the hard reality is that the lack of options means that it is a matter of compulsion rather than choice.

Apparently, the story of adjoining localities does not substantially differ. Kathajor, Manthali and Pakarbas of Ramechhap district have a hard reality to share regarding the plight of their drinking water. Drinking water source in all of these areas are dried or are quickly becoming depleted. One of the villages in Kathajor is so crunched with water scarcity that ceremonies such as marriage are virtually impossible without external support. Consequently, the villagers have made a norm of attending the marriage ceremonies with a jar of water as a rescue move to the household concerned. Manthali has also a bitter story to share. The place, which was chosen as the district headquarters two and half decades ago by virtue of its unlimited water availability, has already faced severe water scarcity. It is now forced to pump-lift water from Tamakoshi River when its three water sources dried one after another. The inhabitants of Pakarbas,

a poverty stricken village dominated by ethnic Majhis and other castes in dry hill slopes, is wondering if they too, like in Manthali, can pump water from Tamakoshi for drinking. This expensive project was conceived when the villagers realized that they had no alternative source to avail water in the village. Currently, water from Tamkoshi is transported by tanker and sold in the village at a rate of 1 Rupee per liter, a price that the villagers find hard to afford.

Catastrophe Ahead and Handicapped Villagers

While the above scenario already provides a scary picture, it may be noted that a far worse situation might lie ahead. Just a 0.74 degree rise in the global temperature in over a century was sufficient enough to invite problems of the scale mentioned. It is hard to imagine what will happen if the global temperature rises to 1.5 degrees (plea of the Least Developed Countries), 2 degrees (likely consensus figure in the UNFCCC) or 6 degrees (possible scenario under the current trend). Unless the situation is addressed properly and in time, complete devastated future scenario is inevitable, where the first ones to be killed will be the poor people of the poor nations. This might sound unfair, but it is a hard reality.

There is another dimension of the unfair situation. While the villagers can easily identify that the root

of their plight is linked with climate change, they have virtually no idea that it is something to do with global warming caused by excessive emission of the green house gases on the part of the industrialised world. Though it might sound ridiculous to the outside world, they attribute their problems to an 'act of god'. Villagers have little idea about how the world is trying to negotiate for checking the GHG emission rate through UNFCCC forums such as Copenhagen, Cancun and Durban. Neither have they had the faintest idea about Nepal's own strategically designed and approved documents such as Climate Change Policy, National Adaptation Programme of Action (NAPA) and Readiness to Reduced Emission from Deforestation and Forest Degradation (REDD-Readiness). They are of course excited to learn that the country intends to address their immediate climatic plights through climate change policy and NAPA, but is yet to be seen how the Government of Nepal, with support from international community, can address the problems of rural people of Nepal, whose conditions may not be too different from those in Ghoksila, Kathajor, Pakarbas and Manthali.

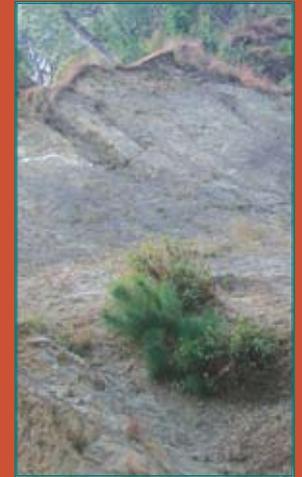
The Best Option is Learning by Doing

The rudimentary knowledge on climate change adaptation implies that we have to come up with a new intervention modality that is owned by the local

community. This obviously calls for action learning/researching as a *modus operandi* where, unlike in the blueprint approach, one would consciously learn from the successes and failures of past interventions (Kolb 1984, Griffin 1897, Kemmis 1988). A cyclic process of '*planning-acting-reflecting-modified planning*' would form the essential basis of the action research. The action made, particularly in the first few loops of the learning cycle, is bound to be tentative rather than accurate. However, the actions tend to move towards better precision in following loops. Empowering local communities and governments (VDCs and DDCs) must be the real motivation behind the overall process.

Two areas seem relevant for planning climate adaptation at local level. Firstly, learning from past adaptation interventions may be an important area of focus. Secondly, and probably more important, is the learning from the hitherto autonomous adaptation practices of local communities. The value of learning from the existing knowledge system is evident from Nepal's community forestry which did not succeed until the indigenous system of forest management (Baral 1999, Fisher 1989) was acknowledged and used both in policy and practice.

We need financial resources in order to support climate change adaptation. Hopefully, Nepal will receive UNFCCC and extra-UNFCCC funding, as long as we can prove our case by demonstrating that both



Landslide at Ghoksila
Photo: Shankar Adhikari

Villagers have little idea about how the world is trying to negotiate for checking the GHG emission rate through UNFCCC forums such as Copenhagen, Cancun and Durban.



Sick forest of Kathjor
Photo: Shankar Adhikari

The problem is significant, and the fact is that the Climate Change Council and the Ministry of Environment may have to act in a totally different and significant manner.

Nepali people and landscapes are suffering from climate change. Nepal seems to have made some important steps to that end by way of deliberations in the UNFCCC processes. However, it is important to note that money alone is unlikely to solve the problem. Accessing foreign funding, without crafting a concomitant structure and process in order to spend it in a wise manner, will not help to solve our current climate change problem. Instead it could exacerbate the changes through resource misuse, thus creating a wider gap between those already capable of coping with climate change and those that are too weak to do so. The problem is significant, and the fact is that the Climate Change Council and the Ministry of Environment may have to act in a totally different and significant manner. Please allow me to finish this paper with a quote from Albert Einstein.

"The significant problems we have cannot be solved at the same level of thinking with which we created them."

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Photo: Mahesh Shrestha

Nepal Climate Change Scenarios

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Background

The global warming caused by increased greenhouse gases in the atmosphere has also increased the earth's average surface temperature. This is negatively affecting the earth's climate. The awareness raised on climate changes initiated by the enhanced greenhouse effect in the atmosphere has increased the importance of climate change scenario models. General Circulation and Regional Circulation Models (GCM and RCM) are the most common and widely accepted methods of scenario generation. Modeling the climate change system, however, is not predicting the exact time and location of a specific small scale event. Rather, it is concerned with understanding and predicting the mean and variance of a system (Kiehl, 2006). Scenarios can be used to identify the sensitivity of the exposure unit to climate change and to help policy makers decide on appropriate policy responses.

The fourth assessment report of Intergovernmental Panel on Climate Change (IPCC) depicts the Hindu Kush-Himalaya including Nepal as a "white spot", a region about which scientific information on climate change is limited or lacking altogether. A proper and reliable hydro-meteorological data and analysis for the future scenario of climate change in Nepal has not yet been constructed properly. Even with proper and reliable hydro-meteorological data, constructing a Nepal scenario in General Circulation Models is difficult. Because they have limited spatial resolution, many of the topographic features important for

Nepal's climate are not properly represented. Studies focus on the ability of GCMs to replicate the all Indian monsoon component, ignoring model performance for Nepal. Since Nepal monsoon rainfall does not correlate with the all Indian monsoon rainfall, it is difficult to replicate key features associated with the Nepal summer monsoon rainfall (Shrestha *et al.*, 2000).

There have been few studies to downscale the scenario of such models with predictions to Nepal. The two most recent ones were performed by the Department of Hydrology and Meteorology (DHM, 2007) and the Nepal Climate Vulnerability Study Group (NCVST, 2009). Both studies have analyzed the General Circulation Models and Regional Circulation Models and provided a scenario on what the future climate looks like in Nepal. They have analyzed Special Report on Emission Scenarios SRES-B1, A1B and A2 scenario. DHM analyzed the datasets including monthly mean surface air temperatures and precipitations beginning in 1960 or 1961 and ending in 1990. Three time slices incorporating 30 years, centering on 2020, 2050 and 2080, were examined. Similarly, NCVST analyzed 15 different models that had provided daily and monthly data from Coupled Model Intercomparison Project Phase 3 CMIP3 archive, for which outputs from three SRES emissions scenarios were available. The study shows the projected changes of temperature and precipitation under different scenarios averaged over the Central Himalaya region that covers Nepal and adjacent areas. The temperature increase in the Himalaya region is slightly higher than that averaged

Scenarios can be used to identify the sensitivity of the exposure unit to climate change and to help policy makers decide on appropriate policy responses.

over South Asia. The scenarios range from 1.1 to 1.3 degrees centigrade by 2020, 1.8-2.5 degrees in 2050 and 2.5-4.2 degree in 2080.

DHM (2007b) validated regional climate change model RegCM3 and projected climate change scenario of Nepal for the 21st century using the ECHAM5 GCM driving dataset. It presents the climate change analysis based on RegCM3 output for A2 scenario for the mid-century period from 2039 to 2069. The change was studied compared to the baseline climate for 1961-1990. NCVST (2009) analyzed data from two RCM simulations. The results from PRECIS were scaled to produce equivalent responses for the period 2040-2070. Results from the simulations were not easily comparable due to the fact that they are at different spatial resolutions, driven by GCMs output and have been run for different periods in the future.

Except in pre-monsoon season, the increase in mean temperature during the mid-century is predicted to be higher in the West compared to the East in all seasons. The precipitation change shows that, except in post- and pre-monsoon season, rain fall will likely decrease in both the West and the East. In addition, the decreasing rate is higher in the East than in the West. In the East, precipitation seems to decrease in all the seasons, while in the West it seems to decrease only in the annual monsoon and winter seasons, and to increase in the post- and pre-monsoon seasons DHM (2007b). The summary of the projections by NCVST are provided below:

Temperature

- Mean annual temperatures across Nepal are projected to increase by 0.5-2.0°C with a multi-model mean of 1.4°C by the 2030s, 1.7-4.1°C with a multi-model mean of 2.8°C by the 2060s and 3.0-6.3°C with a multi-model mean of 4.7°C by the 2090s.
- The increase in temperature is projected to be lower in the monsoon and post-monsoon seasons than in winter and pre-monsoon seasons, with a high of 1.6°C by the 2090s.
- Projected temperatures are lower in the Eastern Nepal than Western and Central Nepal by the 2090s. This difference is about 0.7°C.
- The frequency of hot days in the pre-monsoon period is projected to increase by 15-55% by the 2060s and 26-69% by the 2090s.
- The frequency of hot nights in pre-monsoon period is expected to increase by 15-55% by the 2060s and 26-69% by the 2090s.
- The frequency of hot nights is projected to mostly increase in the monsoon period, 6-77% by the 2060s and 29-93% by the 2090s.

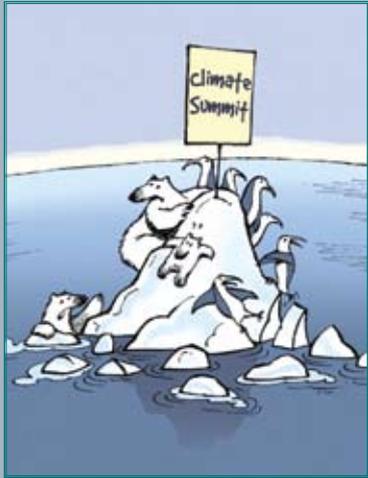
Precipitation

- The mean annual precipitation projection does not show clear trends of either increases or decreases



Wildfires; floods; tornadoes; in a changing climate, what's next?
Source: TreeHugger

The precipitation change shows that, except in post- and pre-monsoon season, rain fall will likely decrease in both the West and East.



Climate Summit by Chappatte
Source: genevalunch.com

Climatic models provide a variety of scenarios. When interpreting them, we should remember that climate scenarios are not predictions, but rather they are a plausible indication of what the future could be, given a set of assumptions.

- -34 to +22% with a multi-model mean of 0% by the 2030s
- -36 to + 67% with a multi-model mean of + 4% by the 2060s
- -43 to + 80% with a multi-model mean of 8% by the 2090s
- Monsoon rainfall projections vary widely, but more models suggest an increase rather than a decrease towards the end of the century.
- Eastern and Central Nepal monsoon rainfall is projected to increase more than in Western Nepal, whose multi-model mean increase by the 2090s is only 6%.
- Heavy rainfall is projected to increase slightly in the monsoon and post-monsoon seasons and to decrease slightly in the winter and pre-monsoon season.

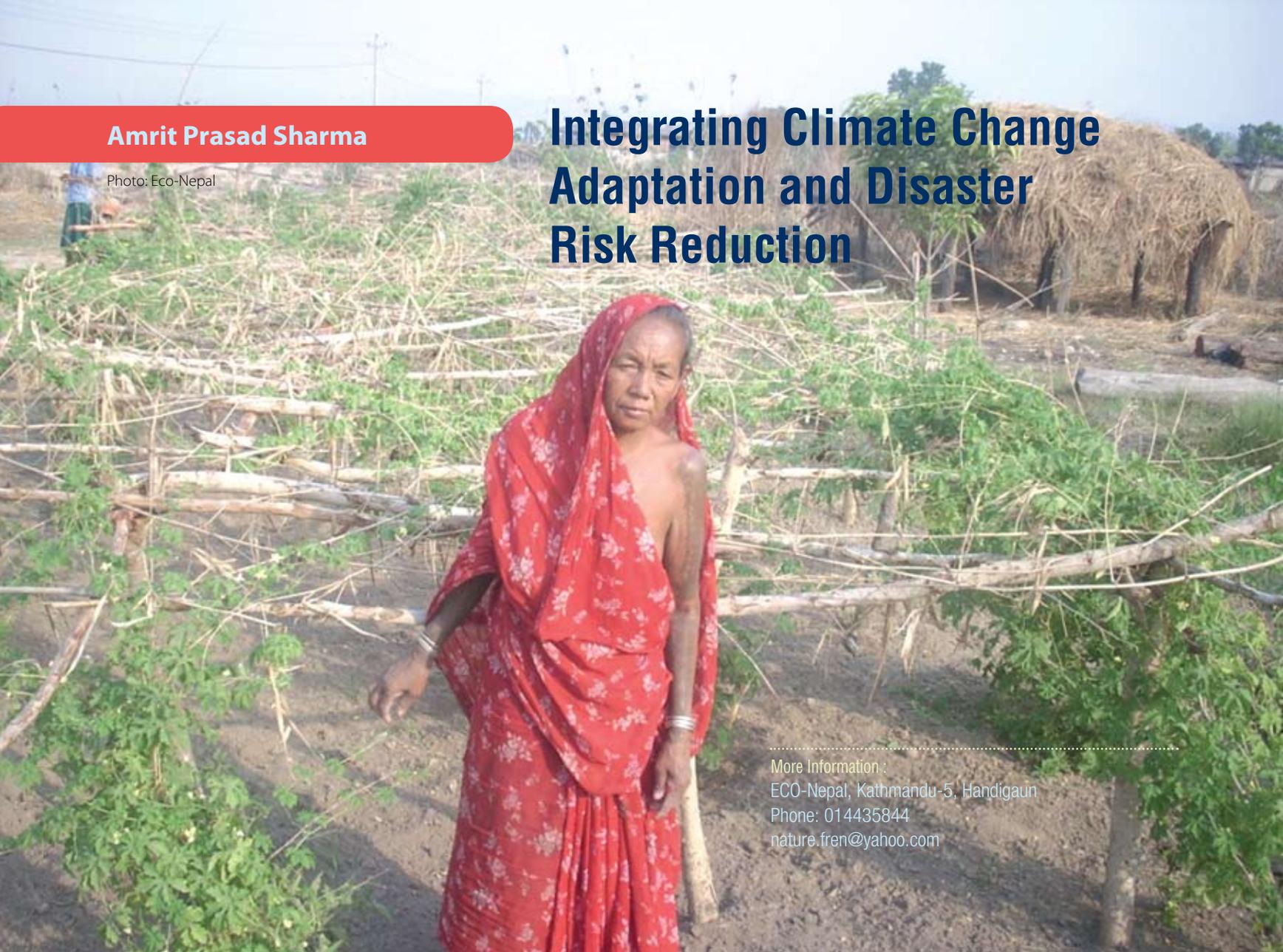
Conclusion

DHM (2007b) and NCVST (2009) both project an increase in temperatures in the near future. The temperatures will increase more in Western Nepal than in Eastern Nepal by the mid-century; however, there are disparate trends in terms of precipitation. According to DHM, precipitation will decrease in both the East and the West, except in post- and pre-monsoon seasons. However, the decreasing rate is higher in the East than in the West. NCVST (2009) pointed out that the mean annual precipitation projected, does not show clear trends of increase and decrease. However, monsoon rainfall will increase towards the end of the century. Similarly, heavy rainfall is projected to increase in the monsoon and post-

monsoon seasons and to decrease in winter and pre-monsoon seasons. NCVST recommends that “[...]making climate change predictions for Nepal will be difficult and any projections must be interpreted and used cautiously, given the limitations of CGMs and observational datasets for this region” and “[...]a far more comprehensive set multi-RCM-GCM simulation is required before a sense can be gained of a range of possible climate conditions that different regions in Nepal might experience”. Climatic models provide a variety of scenarios. When interpreting them, we should remember that climate scenarios are not predictions, but rather they are a plausible indication of what the future could be, given a set of assumptions.

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Photo: Eco-Nepal

Integrating Climate Change Adaptation and Disaster Risk Reduction

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Disaster Risk Reduction (DRR) as defined by UNISDR is 'the systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development (UNISDR, 2004).

Context

The impacts of climate change are already felt—most acutely by millions of the world's poorest people. They are already facing hunger, disease and conflict linked to climate change. Despite notable progress in human development, Nepal remains one of the poorest countries in the world. The majority of the population is engaged in subsistence agriculture, yet land access is extremely unequally distributed and a large part of the country is uncultivable. Poverty and exclusion were significant drivers of the decade-long conflict. The country's diverse topography, fragile ecosystem and the existing poverty makes it extremely vulnerable to the negative impacts of climate change (Oxfam International, 2011). Nepal is ranked, in terms of relative vulnerability in the world, as the 11th most vulnerable to earthquakes, and the 30th with respect to vulnerability to water induced disaster (UNDP/BCPR, 2004). According to the climate change vulnerability index compiled by the British-based global risk advisory firm, Maplecroft, Nepal is in the fourth position, which is considerable in comparison to the above mentioned rankings. There is no doubt that vulnerability to these disasters has been magnified by climate change. The ultimate impact of climate change comes in the form of hazard and further, in the form of disaster. Thus, today's challenge is to manage the climate risk in order to cope with the challenges of disasters. In line with the disaster scenario, community-based adaptation approaches should be designed and implemented.

CCA and DRR

IPCC (Intergovernmental Panel on Climate Change) defines Climate Change Adaptation (CCA) as an adjustment in the natural or the human systems that occurs in response to actual or expected climatic changes or their effects. In human systems, adaptation can reduce hazards or exploit opportunities. Disaster Risk Reduction (DRR) as defined by UNISDR is "the systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development (UNISDR, 2004). There is insufficient knowledge on DRR and CCA among development workers. Furthermore, communities fail to appreciate the strong correlation between hazards and vulnerabilities. For instance, a minor event or hazard can become a recurring disaster. These factors erode hard-earned development gains and undermine the economic viability of communities and the affected regions. DRR is an essential part of adaptation work— it is the first line of defence against climate change impacts, such as increased flooding or regular droughts.

The focus of DRR is most often based upon experience at the community level, for which a full range of tools and methodologies have been developed (Maceda et al., 2009). Meanwhile, CCA experience generally stems from global policy agendas, rather than practical implementation (Tearfund, 2008).

Table 1. Summary of differences between DRR and CCA (Tearfund, 2008)

DIFFERENCES		SIGNS OF CONVERGENCE
DRR	CCA	
Relevant to all hazard types.	Relevant to climate-related hazards.	N/A
Origin and culture in humanitarian assistance following a disaster event.	Origin and culture in scientific theory.	CCA specialists are now being recruited from the fields of engineering, water and sanitation, agriculture, health and DRR sectors
Most concerned with the present – i.e. addressing existing risks.	Most concerned with the future – i.e. addressing uncertainty/new risks.	DRR increasingly forward-looking. Existing climate variability is an entry point for CCA
Historical perspective	Future perspective	As above
Traditional/indigenous knowledge at the community level is the basis for resilience.	Traditional/indigenous knowledge at the community level may be insufficient for creating resilience against all types of future risks.	There are examples where integration of scientific knowledge and traditional knowledge of DRR provides learning opportunities.
Structural measures designed for safety levels modelled on current and historical evidence.	Structural measures designed for safety levels modelled on current and historical evidence and predicted changes.	DRR is increasingly forward-looking.
Traditional focus on vulnerability reduction.	Traditional focus on physical exposure.	N/A
Community-based process stemming from experience.	Community-based process stemming from policy agenda.	N/A
Practical application at the local level.	Theoretical application at the local level.	CCA gaining experience through practical local application.
Full range of established and development tools available.	Limited range of development tools available.	None, except an increasing recognition that more adaptation tools are needed.



River channeling.
Gabion wall Koshi flood
Photo: Eco-Nepal



Constructing rehabilitation center as a response mechanism for flood, Saptari
Photo: Eco-Nepal

Generally, if we are able to manage the climate risk by providing appropriate options to make people safe from floods, then we will be able to enhance poor and vulnerable people's coping capacity to deal with disaster challenges.

Incremental development	New and emerging agenda	N/A
Political and widespread recognition are often quite weak.	Political and widespread recognition are increasingly strong	None, except that climate related disaster events are now more likely to be analysed and debated with reference to climate change
Funding streams are ad hoc and insufficient	Funding streams are sizeable and increasing	DRR communities are engaging in CCA funding mechanisms

DRR is now lending its expertise and humanitarian experience to climate change adaptation programs. For example, DRR experts' knowledge and expertise about building resilience to deal with existing climate variability is a used as a starting point when developing adaptation policies. In turn, the DRR community is paying more attention to longer term changes in the climate and the shifting hazard burden that this may cause.

Talking About Climate Change or Disaster?

When we ask the people living in the most vulnerable and poor communities (who frequently suffer from climate risks), about the concepts of climate change it is very difficult for them to understand the issues

of climate risk, though they easily perceive the issues of disasters. The concepts of global climate are far beyond their understanding. For example, erratic rainfall is an impact of climate change that causes unpredictable floods. However, these people only understand the damages of floods. In this case, it would be worthless only to say that floods happen due to climate change. Generally, if we are able to manage the climate risk by providing appropriate options to make people safe from floods, then we will be able to enhance poor and vulnerable people's coping capacity to deal with disaster challenges.

Increased Impacts of Climate Change Create Increased Risks of Disaster

Developed countries are primarily responsible for climate change, while developing countries are more vulnerable to climate change impacts. Nepal contributes to only 0.025% of the total Green House Gas emissions and it is one of the most vulnerable countries. Ministry of Home Affairs shows that more than 1000 people each year, and more than 4000 people the last ten years, have died due to climate induced disasters, such as floods, landslides, and droughts. The National Adaptation Programme of Action (NAPA) to climate change/the Government of Nepal has identified the six major areas that are impacted by climate changes: 1) Agriculture and food security 2) Water and energy resources 3) Climate induced disaster 4) Forest and biodiversity 5) Public health and 6) Urban settlement and infrastructure. NAPA, generally, identified the changes in temperatures (days are getting warmer and nights are less cold) and in precipitation (rainfall is becoming more erratic, noting delayed onset; reduced rainfall in the dry months; intense rainfall episodes during the monsoon). These changes in temperatures and precipitation patterns are responsible for disturbing the overall livelihood systems. Thus, in order to adapt to such situations, sufficient climate forecast data must be available. Unfortunately, Nepal does not have

sufficient climatic data. When such data is lacking, it is important to focus on community-based disaster risk reduction approaches in order to manage climate risks and to enhance the coping capacity to deal with disaster challenges.

Conclusion

Though climate changes happen naturally, anthropogenic interferences on the climate have accelerated environmental degradation, leading to climate changes that ultimately emerge as hazards and disasters. Thus, there should be mutual understanding for both climate change adaptation and disaster risk reduction. There is significant overlap between the practice and the theory of disaster risk reduction and climate change adaptation. However, there is limited coherence and convergence in institutions', organisations' and policies' frameworks. All struggle to be incorporated into regular development planning and this aspiration is slowed down by duplicated activities, ineffective use of resources and confusing policies. Here are some recommendations which are relevant to integrate the two issues:

- There should be proper coordination between the Ministry of Environment (as the focal point for climate change efforts) and the Ministry of Home Affairs (as the focal point for disaster management) during the planning phase.



High Plinth Level of Latrin for Flood response, Rupandehi. Photo: Eco-Nepal

There is significant overlap between the practice and theory of disaster risk reduction and climate change adaptation.



Forest degradation due to stone quarrying in Chapagaun, Lalitpur .

Photo: Eco-Nepal

Integrating community-based DRR and CCA at the policy and practical level is crucial to aid effectiveness. Successful integration reduces both duplication of efforts and confusion at the community level.

- Proper strategies should be developed to raise the issues in a uniformly and integrating way, referring to United Nations' Framework Convention on Climate Change (UNFCCC) and the Hyogo Framework for Action. Similarly, proper implementation should be in line with the National Adaptation Programme of Action (2010) to climate change and the National Strategy for Disaster Risk Management
- It is important to help the DRR community to engage more effectively in UNFCCC negotiations, for example by building the capacity of negotiators with DRR experience.
- Integrate DRR and CCA into guidance and delivery of funding mechanism, for example through budgetary support.
- The integration of DRR and adaptation topics should be promoted in international, national to local implementing levels.
- The generation of integrated knowledge, experience and guidance should be supported.
- Convergence of national government institutions and coordination mechanisms should be encouraged.

Integrating community-based DRR and CCA at the policy and the practical level is crucial to aid effectiveness. Successful integration reduces both duplication of efforts and confusion at the community level. Thus, climate smart disaster management

options along with sustainable development approaches would be fruitful in the aim of managing climate risks and to enhance the coping capacity to deal with disaster challenges.

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Photo: Mahesh Shrestha/LI-BIRD

Challenging Nepal's Current Activities in Climate Change: The Need for Political and Economical Perspectives

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Introduction

Climate change has become a topic of governments', development organisations' and non-governmental organisations' discussion. All sectors (agriculture, forest and biodiversity, water resources and energy, urban settlement and infrastructure, public health) are linked to climate change issues, and no subject is complete without keeping in mind the climate change implications of it.

Climate change is understood as a global phenomenon, of which it is very difficult to predict the effects. What we do know is that it has increased the frequency and magnitude of various climate related changes that have existed for a long time. For instance, climate change may increase or decrease productivity (agriculture), it may increase epidemics (health), or it may increase disasters (natural disaster), among other occurrences.

Climate change is not a new phenomenon; however, today the issue has to be regarded in the light of other complex issues within the sectors of health, agriculture, forestry, livestock and others. These issues are the most important in a country like Nepal. The fact that the climate is changing more drastically has made focusing on the issues even more important. This article is about the need for political and economical perspectives in current climate change activities in Nepal. A basic question for a citizen in Nepal is: "When we are not able to deal properly with our complicated issues now, what will we do when these are affected by climate changes?"

Climate change is understood as a global phenomenon, of which it is very difficult to predict the effects. What we do know is that it has increased the frequency and magnitude of various climate related changes that have existed for a long time.

Point 1: Stick to the already existing challenges

All stakeholders in Nepal (non-governmental organisations, international non-governmental organisations, the Government of Nepal, community-based organisations) have to understand how they first and foremost need to work on improving the activities of the already complex issues identified in the country in order to address climate change issues. The major issue needed to be focused on is poverty. Plans have to be carried out, reaching one milestone at a time. It is important to build the capacity of vulnerable communities on minimizing the adverse impacts of socio-economic and environmental challenges before collecting and allocating funds for research and development of unpredictable challenges like climate change.

The major actors now working on climate change issues are:

1. The Government of Nepal
2. International Non-Governmental Organisations
3. Donors
4. Non-Government organisations
5. Civil society
6. Farmers

The Government of Nepal has prepared the National Adaptation Programme of Action (NAPA) to climate change. This is the main document to address the immediate and urgent climate change adaptation needs of Nepal. Despite its opportunities for shaping

adaptation needs at the national level, it has given less thought to some critical issues for its implementation:

- The thematic working groups did not sufficiently consider the economic aspects of climate change during the NAPA process. Thus it tends to be more of a survival strategy than a chance to look at climate change as an opportunity for growth.
- The economic thinking has only been brought forward after donor funded projects, such as Piloting Programme on Climate Resilience (PPCR). This reflects a pattern of being driven by funding agencies rather than focusing on the real need.
- The Ministry of Local Development's role has not been clearly depicted, though it has provisioned that District Development Committees will be the main coordinating bodies at the district level. This can help climate change to be mainstreamed into development planning in Nepal.
- The government of Nepal has clearly mentioned the issue of 'Climate Justice' in its climate change policies, but has contradicted itself by approving donor funded project approaches based on funding from climate change loans.

Point 2: Climate change is now a political - economic issue: Who should lead in the work on climate change issues?

There have been many discussions regarding who should take the lead role on climate change issues. Conflicting cases between various government ministries have already been occurred in the division of tasks. Now the issue of climate change is more than an issue within the areas of the environment, forestry, and agriculture; it is also an issue within the areas of politics and economics. Thus, the Government of Nepal needs to establish one cross-cutting ministry¹ that can be a powerful body dealing with climate change.

Point 3: The private sector has to be treated as an equal partner in the initiatives implemented regarding climate change

The private sector has been neglected in the NAPA discussion in Nepal, though it has acknowledged their role in the implementation at district level. While in India, Confederation of Indian Industry (CII) is a leading organisation providing information to Indian policy makers, the Federation of Nepalese Chambers of Commerce and Industry (FNCCI) does not yet have this kind of role in Nepal. As mentioned, climate change issues need to be linked to already

¹ At present the Government committee is missing many important government agencies including the Ministry of Industry, Ministry of Local development



A public private partnership is crucial to deal with the impacts of climate change in the developing nations.
Photo: Krishna Lamsal/LI-BIRD

Climate change issues need to be linked to already existing sectors, such as those of economy and growth. The private sector should be involved in planning and discussions because, among other reasons, investments happen through the private sector.



Integration of climate change in development plan is vital to minimize the potential damage of flash floods and other extreme climatic events.

Photo: LI-BIRD Photo-Bank

The huge funds, which are flowing to adaptation initiatives have become a major business concern for INGOs.

existing sectors, such as those of economy and growth. The private sector should be involved in planning and discussions because, among other reasons, investments happen through the private sector. More importantly, government and other non-governmental initiatives in Nepal must focus on building the capacity of the private sector so that it could also function as CII is performing in India.

Point 4: We need a national plan that also includes a strategy for collecting from our tax payers.

The preparation of the NAPA, was funded by several donor. This plan is primarily prepared to get funding to the Least Development Countries Fund for climate change adaptation initiatives. We need to think about how a country can make a plan for drawing down resources from national and international donors. It is simple and logical to make a national plan which firstly looks at how the tax payers of Nepal can provide funding for adaptation activities. Only after doing this, should we search for foreign and other funding possibilities. The same goes for other documents in preparation, such as Reducing Emissions from Deforestation and Forest Degradation Plus (REDD+). In this way, a plan is needed not only based on international funding, but also on a budget for Nepal. This will keep the process from being donor-led.

Point 5: Development organisations seem more interested in bringing in projects rather than developing the economy and growth of the country.

Most of the Nepali development organisations represent International Non-Governmental Organisations at the international level related to Nepal. This is also the case for climate change negotiations. Thus, their ideas regarding climate change are based on the specific objectives developed by donor organisations, which are more responsible to their own nations. These objectives mirror the donor countries' climate change strategies and are based on the donor's interests in the growth of their own economy. As for the beneficiaries concerned, climate change issues only cover adaptation initiatives, which is apparent in the current literature and from conferences, such as the Conference Of the Parties (COP) 15 in Bonn.

The huge funds, which are flowing to adaptation initiatives have become a major business concern for INGOs. As new activities bring new funding, these organisations have sought funds for their own operations and are also experimenting with various aspects of climate change in existing projects. The same has been inherited to Nepali NGOs. The reality is that there are less chances of getting proposals approved without mentioning the project's link to climate change issues.

Large funds are also invested in research. This is also linked to climate change, typically through vulnerability assessments. Moreover, a general process followed by all INGOs and NGOs in their projects is vulnerability assessment, adaptation measures and mitigation measures. Most of the research at the current stage is subjected to more than two years. Clearly, some research has shown great insights, one of them being “Enduring Farms” (FAO). This research highlights farmers as the best scientists of climate change.

However, some questions related to research in climate change must be raised:

- Why are we doing research? – Is the answer only to receive funding?
- For whom is the funding – Is it primarily for INGOs and NGOs in order for them to operate projects?
- What is the priority of Nepal, mitigation or adaptation or both?
- Is the project within the priorities of Nepal?
- Who are the climate affected people?

The whole process of climate change research is supply driven. There is only use of high skill climate change experts in most of the phases of the research, in which farmers and other actors are made “subjects” of experiments. We need to change this tradition and make way for researchers to play the role of facilitators and that farmers should play the role of community experts.

Most of the organisations are saying by default, that when climate change issues are addressed, issues of poverty, economy and growth are also addressed. This common understanding of climate change technicalities among GOs, NGOs and INGOs is inadequate. Words, such as climate smart technologies, green economy, carbon market, carbon transparency and other economic and technological terms are less dealt with.

Nepali development organisations are balancing on a thin line when it comes to the following points:

1. To facilitate stakeholders in Nepal to receive international funding, also means to create their own jobs.
2. Increasing investments and interest in a green economy means the involvement of business thoughts, a field where development organisations lack expertise. Green economy needs private and government investment on a large scale, thus decreasing the business opportunities for development organisations to operate.

The reason for the latent stage of the “climate change-economy and growth nexus” is that the climate change solutions that development organisations are carrying forward are unprofitable. We must admit that in Nepal, most of the new jargon is brought by the interest of International Non-Governmental Organisations.



Will the funding offered for the least developed nations for climate change adaptation be sufficient for filling the cracks in their fields ?

Photo: Mahesh Shrestha/LI-BIRD

Words, such as climate smart technologies, green economy, carbon market, carbon transparency and other economic and technological terms are less dealt with.



Farmers, who know their local context the best, can play a role of community experts in designing local adaptation strategies.

Photo: LI-BIRD Photo Bank

Most civil society actors still think that climate change is rocket science and do not dare to be vocal on these issues.

Point 6: Civil Society, where are you? Where are your own plans for climate change?

Civil society actors based in the grass roots are hardly found in the climate debate now, though they represent the voices of the people in an unbiased manner. A few civil society actors are representing grass roots experiences but these need to be scaled up. Regarding advocacy for the benefit of vulnerable communities, civil societies must move ahead in an alliance to push their agendas at national, regional and international levels.

Most civil society actors still think that climate change is rocket science and do not dare to be vocal on these issues. Nevertheless, there is an urgent need to bring civil society organisations in the climate change discussions. In the long run they need to have their own plans, programmes, and visions to drive climate change debates for the nation.

Point 7: Farmers are the best climate scientists

In all the situations of climate change work, farmers are subject to experimentation. Their names and brands are used for business purposes. Few climate change experts have understood that farmers are the best scientists on climate change mitigation and adaptation. In order to really address the local vulnerability, the policies and ideas have to spring up from the bottom, rather than only making climate change science a knowledge written by experts.

Point 8: Recommendations

1. Nepal needs its own strategy for climate change issues in terms of political-economic perspectives. This strategy has to be built keeping climate change, poverty, and economic growth factors into account (Nothing less, nothing more).
2. Youth have to be taught “Make Money-Save Environment” concepts and practices.
3. Nationwide promotion of green jobs must be the major focus of the Nepali Government.
4. FNCCI must establish a green business center and repository. In addition, it has to promote green economy, low carbon technology and climate smart technology etc.
5. Civil society actors have to educate on and advocate for climate change as an important issue in relation to complex issues, and on defining visions for long term economic goals led by a green economy.
6. Regarding development organisations, there is nothing to say. They are just following the mainstream, including the rules and plans laid by the Nepali Government, private sectors and donors.



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Photo: Durga Narayan Shrestha/LI-BIRD

A Perspective on Communicating Climate Change

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The role of the media should be to sensitize and to raise awareness. Decision-makers at the international level may influence global thinking on local challenges through climate change messages that are communicated through the mass media.

Climate change is one of the greatest challenges of the twenty first century. All the components of this living planet are hit by the impacts of these global changes, with complex feedbacks on various environmental and bio-physical processes. The poorest among us, both globally and in our own communities, are also the most vulnerable in two ways. The first way is related to the bio-physical risk. Many of the geographical areas, including areas in Nepal, which are expected to be hit the hardest, are also the homes of some of the poorest people in the world. Secondly, their vulnerability is related to the socio-economic risk. The capacity to mitigate and manage climate hazards and their impacts on ecosystems depends on people's livelihood assets, both social and economic.

Adaptation to climate change impacts can be enhanced through increasing the access of vulnerable communities and policy makers to information and adaptation options. In order to make information more available, it is important to inform, educate and communicate the complex issues of climate change in an understandable language. To make the information correct and understandable and thus efficient, there is also a need to improve the scientific understanding, documentation and the scientific reporting of people working in the media. Furthermore, it is important to prepare a channel for disseminating climate change information from the grass roots to the national level. Communication of climate change has been less effective than one might wish for reasons such as lack

of public engagement and mobilisation through mass media.

In this context, the role of the media is very useful in several ways. It can document local impacts of climate change and community innovated adaption measures, provide information to policy makers, and make communities aware of the issues and future impacts of climate change, as well as about where more information and support for adaptation activities can be found. With this in mind, there is a wide consensus that there is a need for building the capacity of people working in the field of media in the issues of climate change and technical documentation.

The current way of communicating climate change issues and processes appears to be simultaneously necessary and problematic. The role of the media should be to sensitize and to raise awareness. Decision-makers at the international level may influence global thinking on local challenges through climate change messages that are communicated through the mass media. However, at the community level, there are concerns as to whether there are appropriate communication channels and whether there is potential for producing meaningful messages on climate change issues through the media. Making the scientific information easier to understand would be the most persuasive and relevant for moving audiences to action.

For improving climate change communication, Center for Research on Environment Decisions (CRED) (<http://www.cred.columbia.edu/guide/guide/principles.html>) has developed the following principles:

- Know your audience
- Get your audience's attention
- Translate scientific data into concrete experience
- Beware the overuse of emotional appeals
- Address scientific and climate uncertainties
- Tap into social identities and affiliations
- Encourage group participation
- Make behavior change easier

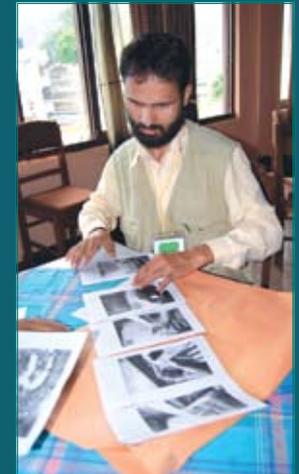
The way media in Nepal is communicating climate change information and the way they are using the above principles are somewhat confusing. Challenges remains in reporting scientific information and technical issues through the media.

Many of the climate changes, which we believe have just evolved in the recent times, have actually been communicated between people in the rural communities for generations through indigenous, inter-personal channels. This way of sharing information on climate, weather and natural phenomena is still practiced by rural communities. Furthermore, the shared information on climate also reveals various socio-cultural traditions, values and norms, such as worshipping in *sim* (wetlands) or *marriage of frogs, yagyas*. Indigenous communication practices have spread such information on climate

related issues and efforts, regardless of what the science has said about the reasons and uncertainties behind the climate phenomena.

When communicating scientific information on climate change, the media should give examples from indigenous practices. However, it is uncertain how the communication channels and media channels are communicating climate change. The lack of information and understanding about climate change contributes to the lack of public engagement, and therefore more information and explanation is needed to move people to action, for which the role of media is undoubtedly crucial.

The challenges of communicating climate change information are more apparent in developing countries, where resources are limited. The communities' socio-economic issues, identities and affiliations, cultural and religious traditions and values, narratives and behaviors that are used to understand natural phenomena, should be linked to the basic level of climate change studies and other scientific information. It may lead to communities' gaining of knowledge and control of environmental crises. Therefore, capacity building of mass media and determining the role that the media can play in order to improve information sharing, both from science to local level and from local level to policy makers, are urgent matters. This is important in determining the pathways for effective climate change communication.



Fact based interpretation and analysis is useful to communicate clear and correct messages.
Photo: Mahesh Shrestha/LI-BIRD

The lack of information and understanding about climate change contributes to the lack of public engagement, and therefore more information and explanation is needed to move people to action, for which the role of media is undoubtedly crucial.



LI-BIRDko Chautari

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चौतारी



Sambida Rajbhandari

Photo: Mahesh Shrestha/LI-BIRD

Art for a Change

More Information :

KaKhaRa: the beginners

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Art is the only corner where people tend to take refuge when the world around them is on fire. Furthermore, art is the only medium that creates a real human being, giving them the unique capacity of building a feeling of 'empathy'.

Someone asked me one day, "Some people consider climate change bogus. What do you think?" I was stunned by the question. My mind plunged deep into this issue. There are various reasons for why we may not consider climate change to be bogus. At least the tsunami in Southeast Asia and the floods in Australia and Brazil were not fake. Today, the existence of climate change is not a debatable issue, it is the rude reality and it is a big problem that some are thinking otherwise.

Many solutions for understanding climate change have been suggested from various fields. KaKhaRa¹ believes that art can be an effective solution.

Why Art?

Human culture developed when peoples' arts and expressions strongly started flourishing. Art does not only include paintings, literature, music, theatre, dance and so on; even a mere poster can be an example of art. For thousands of years, art has become the way of expression and it is an effective medium that lets us know ourselves and others. In this sense, art is the mirror of society. It reflects social issues, values and various changing faces of the society. Art is a universal language. Art voices cultural identity and vice versa. All in all, people love art. Art is the only corner where people tend to take refuge when the world around

¹ KaKhaRa is an art based social organisation working for children and youth, established in 2010 A.D.

them is on fire. Furthermore, art is the only medium that creates a real human being, giving them the unique capacity of building a feeling of 'empathy'.

Role of Art in Social Change

There are many different types of social activism concentrated on various issues. If activism is inevitable, why not make it in an artistic, yet informative manner? KaKhaRa with the support of LI-BIRD, organized Green Art Camp for children from the 6th to the 12th of January 2011 in Kathmandu. About thirty children participated in the camp. Some of the participants performed ballet dance, drama, wrote stories and painted. All of the participants were enthusiastic about expressing their creativity through art. Almost every performance in the camp was based on climate change issues.

The word 'green' symbolizes the environment, which was the theme of the art camp. Bibek, who studies in grade six in Valley View School and who was also the participant of KaKhaRa Green Art Camp, said, "The green is the most important color in the world." At the same time as the children expressed their creativity in the camp, they were gradually becoming an aware member of the society and they would do anything to save the earth.

Basically, people's active participation in such programs enables them to express thoughts and



Students preparing a poster on Climate Change theme.
Photo: Mahesh Shrestha/LI-BIRD

views on various subjects and problems existing in the societies. Art can be the best way to reach out to people. In this sense, participation reveals many buried and hidden experiences, from people's own lives. Through art, people have a medium for sharing experiences that they have found difficult to share with others.

Furthermore, art can always be a medium of expression for issues related to the environment. This medium can be a valuable building block in problem-finding and solution-making processes. For instance, on the very first day of KaKhaRa's 'Green Art Camp', all the children that participated in the camp considered transportation to be the major agent of pollution in the environment. They all seemed concerned about this issue; however, they could not find any solutions

to the problem. They agreed, on the one hand, that they all need transportation facilities. On the other hand, they also knew that the transportation had devastating effects on the environment. After getting more information on climate change issues during the workshop, they finally found a solution to dilemma. They realized that the problem can be solved by using bicycles for short distances and by encouraging the use of vehicles that run on solar energy. On the performance day, we could see the children expressing the mentioned issues, problems related to it, and its solutions, beautifully portrayed through their paintings, writings, theatrical performance and dances.

All in all, artistic social activism focuses on larger impact groups, working with certain groups to enhance both output and outcome. KaKhaRa felt proud to see amazing outputs from children participating in the workshop. All of their performances were promising and beautiful. Surprising the KaKhaRa crew members on the performance day, the children brought their stationeries in paper bags instead of the plastic bags they had used earlier.

KaKhaRa heartily appreciate their initiation and also believe that in the coming time they will adapt more changes in their behavior patterns, contributing to a clean and green environment. This proves that art is the strongest way to change the ways of thoughts, and furthermore, the ways of living. In sum, art is the right medium to vision a better world.



Participants of 'Green Art Camp'.
Photo: Mahesh Shrestha/LI-BIRD

They realized that the problem can be solved by using bicycles for short distances and by encouraging the use of vehicles that run on solar energy.

NEWS AND EVENTS

Past Events

Mid-Western Regional Follow up Meeting of NGO Network on Climate Change in Nepalgunj

NGO Network on Climate Change (NGONCC) organized a two day regional follow-up meeting in Nepalgunj on July 28 to 29, 2011. 48 participants from 13 districts of the mid-western region of Nepal, representing government line agencies, non-government organisations, and media and journalists, attended the program. The program was organized to give an update on the recent climate changes happening at the national and the international level, and to share the activities network members carried out last year. Participants in the meeting had a common consensus on the need of sensitizing the communities and integrating climate change agendas at local levels for achieving sustainable development. Participants expressed the importance of having climate compatible development in order to minimize the potential damage from climate change impacts in the long run.

Photo: LI-BIRD Photo Bank/LI-BIRD



Core Group Follow up Meeting of NGO Network on Climate Change in Nawalparasi

NGO Network on Climate Change (NGONCC) organized a two day regional follow-up meeting of its core group in Sahamati, Gaidakot, and Nawalparasi on August 6-7, 2011. 21 participants, representing core group members, the secretariat, and the regional secretariats, attended the program. The program was organized to follow-up and to give an update on the recent developments on climate change issues at the national level, and to prepare a guiding document and a working strategy of the network.

The members in the meeting agreed for designing NGONCC activities to build the capacity of its members and vulnerable communities on climate change, to expand the membership in climate change vulnerable areas of the country, and to do a strong advocacy for climate justice in Nepal.

Photo: LI-BIRD Photo Bank/LI-BIRD



Regional workshop on “Linking Media and Climate Change

LI-BIRD organized the three day regional workshop ‘Linking Media and Climate Change’. The workshop took place in Pokhara from the 8th to the 10th of September 2011. The main objective of the workshop was to empower the media on scientific understanding and reporting, and documentation of climate change issues and impacts in Nepal.

Background and Purpose

Adaptation to climate change impacts can be enhanced by increasing the access of vulnerable communities and the policy makers to climate change information and adaptation options. For achieving this, it is important to improve the climate change information, education and communication in a way that climate change technicalities and the scientific knowledge can be understood by the general public and policy makers. In this context, the role of the media is very important in two ways. One is to document local impacts of climate change and the community initiated adaptation measures to the policy makers. The other is to aware communities on the process and the future impacts of climate change, as well as to inform about where to find sources of information on and support for adaptation initiatives. In order to prevent incorrect reporting on climatic events, their causes and their effects on people and nature, there is a need of building capacity of the media on the issues of climate change and technical documentation. The purpose of the workshop was to support journalists to be climate change conscious and to develop skills to write accurately about climate changes for both the printed and electronic media.



Kunda Dixit facilitating the workshop.
Photo: Keshab Thapa/LI-BIRD

Content and Achievements

The workshop was inaugurated by the chief guest, Badri Binod Pratik, Chairperson of Nepal Federation of Journalist, Kaski. The workshop was facilitated by Kunda Dixit from Himal Media, Ramesh Bhusal from The Himalayan Times, Saurav Dhakal from Kantipur TV, Keshab Thapa, Krishna Lamsal and Mahesh Shrestha from LI-BIRD. The closing ceremony of the workshop was chaired by Dr. Shreeram Pd. Neopane, Executive Director of LI-BIRD. The twenty six participants were from various media organisations and backgrounds (newspaper, television and radio). The participants were from Pokhara, Dhaulagiri, Illam, Nawalparashi, Kathmandu and Syangja.

The interactive presentations included topics on understanding climate change, need of media in climate change issues, history of climate change coverage in the media in Nepal, communicating



Group photo session.
Photo: MB Astha

climate change through different sources like human interest story, story cycle, integration need among science, media and communication, solution based journalism, national climate change initiatives, climate negotiation processes, and communicating through traditional, new, alternative media and (social media like facebook, twitters, etc).

The workshop was able to enhance the capacity of the participants on the scientific and technical issues and concepts of climate change and its impacts in Nepal, and strengthen the participants' knowledge on technical ways of collecting the information from the field. They learnt on how to connect and disseminate the issues to the public with simple language through different means of media. Furthermore, they enhanced their understanding on the ways to remain up-to-date and accurate on scientific issues of climate change and environmental problems. They enhanced their understanding on the link between events, causes and effects, ways to find and locate them, and presenting them, i.e.

connecting local issues and news to national and global level. The participants expressed special thanks for organizing such programs for journalists working at grass root levels for enhancing capacity on understanding scientific and technical aspects of global issues and need of scientific back up on reporting cases from local levels.

Follow-up

It was agreed upon, that the participants will pass on their acquired knowledge to the general public through their resources, and not to only write for profitable purposes. A Google group named as "Media Network on Climate Change, Nepal (Media-NCC) is established for knowledge sharing and discussion on technical issues and science based reporting on climate change and environmental issues. The network can be subscribed online at mediancc@googlegroups.com.

Regional Capacity Building Training Programme on Adaptation Strategy to Climate Change

LI-BIRD organized a one-week training on Climate Change Adaptation in Tangail, Bangladesh from September 11th to 18th, 2011. The 30 participants came from Bangladesh, India, Nepal and Sri Lanka, country partners of the Community-Based Biodiversity Management - South Asia (CBM-SA) programme. The main purpose of the training was to exchange experiences and to enhance the participants understanding of and knowledge about approaches for community-based adaptation strategies to climate change. The training consisted of four key components namely,

contemporary concepts on adaptation strategies on climate change, methodologies and tools, field visit, and development of an action plan for following up the climate component of the CBM-SA projects.

Keshab Thapa, Sajal Sthapit and Pushpa Sharma from LI-BIRD facilitated interactions on climate change adaptation and on social tools for mapping community-based adaptation strategies to climate change in the field. The participants were divided into two groups going to two different sites for vulnerability assessment and observation of adaptation strategies. One went to the drought prone Ishwardi to observe participatory variety selection and the local seed bank, and the other, to the flood prone Sonatoni to look at bamboo binding in Jamuna River. Participants discussed and carried out different exercises to map the different hazards that the communities were experiencing to identify the most vulnerable communities to these hazards and to identify adaptation strategies that the communities were using to deal with the hazards. The country programmes made action plans for follow up. They will do vulnerability assessments in their existing CBM-SA projects and include climate change adaptation strategies to reduce vulnerability.

The training was organized by the regional coordination unit of the CBM South Asia Programme with financial support from the Development Fund, Norway.

For more info: www.cbmsouthasia.net



Many farmers showed up to take part in the vulnerability assessment in Sonatoni.
Photo: Anette Wilhelmsen/LI-BIRD



Bamboo binding is an efficient adaptation strategy used by the farmers of Sonatoni. They are building bamboo fences, or *Chatka*, to redirect the river to prevent soil erosion. This way they have gained about 400 acres of land in only two years.
Photo: Anette Wilhelmsen/LI-BIRD

Upcoming Events

Workshop on Adaptation Planning

LI-BIRD is organizing a four day workshop on “Adaptation Planning” to the network members of the NGO Network on Climate Change. December 2011

The participants of the workshop will learn about adaptation planning and how to prepare frameworks for achieving adaptation targets. The participants will be provided with the step wise methodologies, processes and tools for evaluating climate change issues and for developing adaptation strategies at the local level. The learning from this training programme will guide the participants in the development of joint actions and implementation for location specific adaptation strategies.

Because the Local Adaptation Plans of Action (LAPA) framework has been prepared and is under consultation at different levels, the workshop will update network members on the various phases of local adaptation plan implementation and frameworks for climate change adaptation planning.

30 network members representing all regions will participate in this workshop.



NGO Network on Climate Change

NGO Network on Climate Change is a loose network established and coordinated by Local Initiatives for Biodiversity, Research and Development (LI-BIRD) in 2007, to raise awareness and build capacity of key development NGOs working in Nepal. The goal of the network is to provide a common platform for national NGOs working on climate change and development issues to share knowledge, develop joint actions, build capacity, discuss climate change policies, and to represent civil society organisations in climate change debates.

The network aims to build the capacity of network members through knowledge sharing, promoting research, technology transfer, and information dissemination. The network acts as a forum for discussion on national climate change agendas and it brings climate concerns to the attention of national and international authorities in collaboration with other national, regional and international networks.

Till date, 110 NGOs are affiliated to the network, covering all the development regions. The secretariat is based in LI-BIRD and the regional secretariats are based in Namsiling Community Development Center (NCDC), Illam; Dalit welfare Organisation (DWO), Banke; and Youth Acting for Change (YAC-Nepal), Dhangadi. These serve as regional secretariats for the East, Mid-Western and Far-Western regions respectively. Secretariats for the central and western regions are recently established and will be based

on Environmental Camps for Conservation Awareness (ECCA), Kathmandu and SAHAMATI, Nawalparasi respectively. The network's regional secretariats are further building on activities relevant to their areas and supporting in the expansion of the network. Besides this, a separate Google group as a discussion forum is also in operation for information sharing and discussions (<http://groups.google.com/group/ngogroups>). Till date, there are 471 members in this discussion forum.

The network members work directly with the communities on awareness raising, dissemination of information, collecting field level information and conducting action research. To ensure a two-way process of knowledge management systems and information outreach to communities, six climate change information and resource centers are already established and located in network member organisations. These are in LI-BIRD, Pokhara; NCDC, Illam; Resource Identification and management Society (RIMS-Nepal), Dhading; Environmental Camps for Conservation Awareness (ECCA), Kathmandu; DWO, Banke; and NGO Federation, Dhangadi.

To join NGO Network on Climate Change discussion group:
ngogroups@googlegroups.com

For more information:
info@libird.org



IMPORTANT RESOURCES



Resources	Web/Link
Capacity Strengthening of Least Developed Countries for Adaptation to Climate Change (CLACC)	www.clacc.net
Climate Action Network International	www.climatenetwork.net
Climate and Development Knowledge Network (CDKN)	www.cdkn.org
Climate Communication Toolkit	http://www.climatebites.org
Department of Hydrology and Meteorology, Nepal	http://www.dhm.gov.np
Farming Matters (Magazine)	www.ileia.org
ICIMOD (Climate Change Publications)	http://books.icimod.org/index.php/search/subject/3
Intergovernmental Panel on Climate Change (IPCC)	www.ipcc.ch
International Institute for Environment and Development	http://www.iied.org
International Institute for Sustainable Development	http://www.iisd.org
International Institute for Sustainable Development reporting Services	http://www.iisd.ca
National Aeronautics and Space Administration/Climate Change/Vital Signs of the Planet	http://climate.nasa.gov
Nepal Climate Change and Development Portal	http://climatenepal.org.np
NGO Network on Climate Change	www.ccnepal.net (under progress)
United Nations Framework Convention on Climate Change (UNFCCC)	www.unfccc.int



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Further Information

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