Knowledge Management for Mountain Development

ICIMOD

Knowledge and technologies for mountain development

FOR MOUNTAINS AND PEOPLE

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INNOVATION AND KNOWLEDGE MANAGEMENT

Integrated Innovation Management for Sustainable Development

Innovation emerges when we cross boundaries between academic disciplines, issues, organisatinal units, genders, generations, and different...

COMMUNICATING

ICT4D 2.0 and Mountain Communities

Information and communication technologies (ICTs) have been making their way into mountain regions for many years. This...

CENTRE NEWS

ICIMOD Foundation – now in action!

As the Centre passed its 25th birthday and continued to progress on its path to make change happen 'for mountains...

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Dear Friends of ICIMOD,

Knowledge management and communication are very broad terms used to cover the social and technical processes supporting information gathering, management, exchange, learning, and innovation in knowledge-based organisations such as ICIMOD.

Knowledge and communication in this context are key elements in initiating the development process and assessing its effectiveness. The generation, application, sharing, and enriching of information with experience and learning contribute directly or indirectly to the outcomes of a development programme and lead ideally to improved design and implementation of new interventions. With global climate and socioeconomic changes accelerating, in particular in the Hindu Kush-Himalayan region, data management and knowledge generation have gained momentum. ICIMOD receives many requests from its stakeholders for new, relevant knowledge and information on the changing conditions in the Himalayas.

This edition of our ICIMOD periodical highlights a number of ongoing initiatives on the application and use of knowledge and communication, including our own efforts to serve as an open house for knowledge initiatives on sustainable mountain development. It brings to you a collection of reflections, learning, and insights of project managers, scientists, climate experts, knowledge and information managers, and development practitioners which we hope will contribute to a better understanding of the issues and gaps in our knowledge of global and regional problems such as climate change, as well as to a better understanding of the solutions to them. We understand the knowledge needs of policy and decision makers who have to deal with uncertainties; and so, in this volume, we have tried to compile and share some of the knowledge, best practices, and data available on mountain development issues.

Although there is a large amount of information available on climate change and related topics, there are still major lacunae: in particular the lack of consistent and relevant data and information to assess the impacts in the region constitutes a huge knowledge gap. Development of new knowledge based on research is essential. Rapid changes in tools and technology, such as a broad spectrum of satellite devices, as well as changes in the ways people receive and digest information pose other challenges, especially in reaching out to rural and remote areas in the Himalayas. Often, the challenge for ICIMOD is not the type of format in which the information is delivered, but rather how to develop the capability of our partners to transform information into meaningful and transferable messages or actions to solve their problems. ICIMOD's aim is to ensure that knowledge transfer from the Centre results in learning and behavioural change. Our partners have to be involved actively in this knowledge development cycle. Learning processes in the HKH region are influenced greatly by the sociocultural context in which we try to package and transfer our knowledge. Dynamism is needed to achieve a collective and substantial contribution to the goal of sustainable mountain development.

In concluding, I would like to thank all our contributing authors for sharing their experiences with a wider audience. Your contributions have enriched our understanding.

Sincerely,

Andreas Schild,
March 2011

Knowledge and Communication for Effective Development in the Himalayas

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As a mountain knowledge learning and enabling centre, knowledge management and communication are at the core of everything ICIMOD does. We develop, synthesise, package, and exchange information and knowledge using innovations, technology transfer, and effective communication pathways. We deliver data and information to our regional member countries and local partners, ensuring that they are shared proactively and applied or reused in local or regional contexts. As described in ICIMOD's Strategic Framework (2008-2012), the Centre's programme staff work in a complex development environment with local partners as implementers. Partnerships are formed through various processes to generate fresh knowledge to solve mountain issues: concomitantly, ways of linking knowledge to effective action for sustainable mountain development become essential.

> Knowledge management is a broad term encompassing social and technical processes that support communication and information management along with organisational innovation. The developing world is undergoing profound economic, technological, and social changes, and the use of science, communication, and information are changing rapidly as more multidisciplinary teams address complex problems.
> – Dr *Warwick Easdown, World Vegetable Centre, 2010*

Knowledge, in this context, is a key element in effective development. The generation, use, and application of knowledge by stakeholders contribute directly or indirectly to the design and outcomes of a programme. Whether they are young people, mountain farmers, women, disadvantaged groups, or local, national, or regional policymakers, politicians, or development practitioners, they all need sound knowledge to work effectively. Mountain farmers can be helped by providing essential information about crop production, post-harvest technologies, technologies about water storage, or market information in real time. Similarly, providing policy makers and governments with critical data analysing the effects of climate change will help them make informed decisions on needs from the national to the community level. Arming local implementers with tools to adapt to the effects of climate change will help them prepare their constituents at the grass roots.

Managing knowledge and finding effective communication pathways for its diffusion have become essential for many small and large development organisations. With global climate and socioeconomic changes taking place rapidly, knowledge generation and management have gained in importance and face complex challenges. ICIMOD, serving the member countries of the complex Hindu Kush-Himalayan region, faces increasing demands for new and more relevant knowledge because of the changing conditions and climate. Therefore, ICIMOD is devising and implementing knowledge management strategies and actions to respond to emerging challenges.

ICIMOD's role

ICIMOD serves as an open house for knowledge initiatives on sustainable mountain development with a regional focus and global reach. It serves as a regional knowledge platform where policy makers, scientists, experts, planners, and development practitioners meet and exchange experiences, access data, and learn good practices and ideas that promote or support sustainable mountain development.

The Centre facilitates knowledge brokering and transfer throughout the region and from knowledge providers

and users with value addition as much as possible. It serves as a facilitator with regional data base resources for its partners and stakeholders. The Centre improves the capacity of its staff and partners to manage and apply knowledge and provides a basis for making its learning and experience available to others and for consolidating knowledge generated by others.

ICIMOD provides knowledge support to increase potential for the success and efficiency of its strategic programmes. It analyses partners' demands, constantly seeks out and evaluates knowledge, and, using modern ICT tools, technologies, and approaches, links scientists, farmers, policy makers, policy advocates, and others as well as improving communication and exchange both internally and through national partners in the region.

ICIMOD's knowledge management strategy

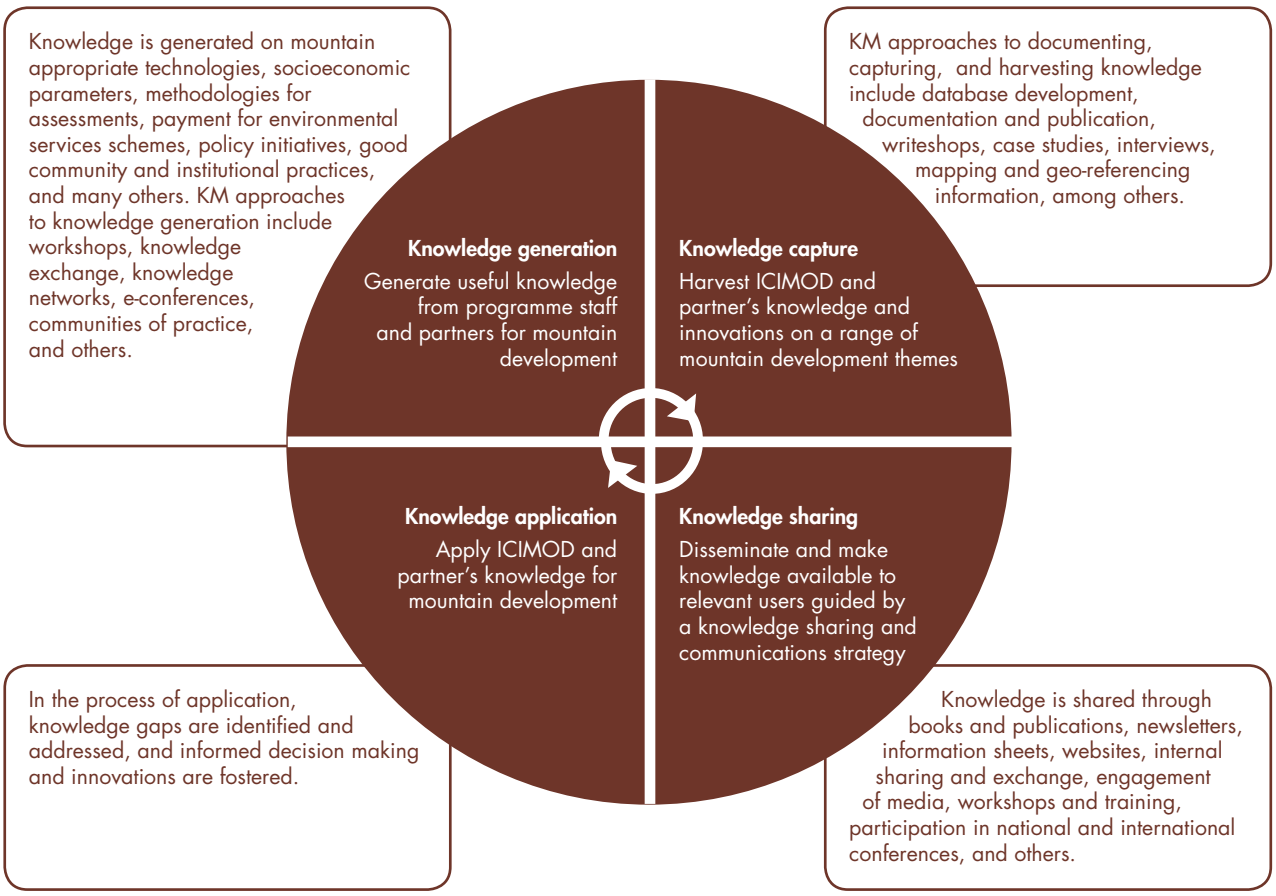
- facilitates rapid responses to emerging issues by key resource persons;
- provides timely, accurate, and relevant data/ information to partners and stakeholders;
- captures, synthesises, packages, and shares regional data and global experiences, simple technologies, good practices, policy initiatives, and others in the context of sustainable mountain development and distributes these along various pathways including the website and information centre;
- acts as a clearing house for knowledge and geo-data available on the Hindu Kush-Himalayan region; and
- applies lessons and replicates successes to achieve development results effectively and efficiently.

ICIMOD's knowledge management framework provides a platform for exchange and learning as well as an enabling environment for the generation, exchange, and synthesis of knowledge which includes useful technologies, experiences gained, lessons learned at various stages of the development cycle, and good practices which feed into the review and fine-tuning of its programmes. It stimulates the development of new interventions and supports informed recommendations for policies.

This framework fosters exchange and cross learning, innovation, and technology transfer, and provides mechanisms for consolidating useful experiences into development learning.

ICIMOD is developing appropriate institutional mechanisms, instruments, and tools to support understanding and application of knowledge

The knowledge development cycle



management. Among Centre staff and with partners, these will support activities that will make us more effective in fulfilling our mission to develop an economically and environmentally sound mountain ecosystem and improve the living standards of mountain populations. The approaches used include the following:

- Integration of knowledge management in all Centre and programme activities supported by a common framework, appropriate infrastructure, and optimal institutional mechanisms, thus developing a supportive knowledge sharing and learning culture
- Sharing the results of research initiatives and application in strategic focus areas using communication methods and channels appropriate to their intended audience and, where appropriate, an innovation systems' approach
- Creating a consolidated knowledge base encompassing information relevant to and developed by the ICIMOD programmes together with other information of interest to stakeholders
- Developing a platform for relevant socioeconomic, biodiversity, and hydrometeorological data
- Creating interactive platforms for dialogue and a knowledge hub for regional communication and exchange
- Carrying out activities to intensify and expand innovation systems in the region and beyond and to raise public awareness

Among the knowledge management activities are forums on relevant topics and themes, programme-driven e-discussions on mountain development subjects, a visiting scientist programme, and transformation of the ICIMOD library into a Mountain Learning Centre connected to centres of excellence in the region in partnership with the Himalayan University Consortium and the Mountain Partnership Consortium. A new branding policy and its implementation have raised awareness about ICIMOD and its work in the region. A knowledge sharing platform for internal collaboration (iDNA) supports virtual collaboration in performing ICIMOD's work for its staff, document exchanges, online meetings, and discussions to support KM in-house. Furthermore, we have developed a knowledge toolkit to improve knowledge-sharing skills. It includes writeshops to document field-based experiences, how to use and apply social media tools to create communities or share experiences and lessons learned, impact pathway approaches, and so on. We have knowledge focal points in all the programmes and subject matter experts in new multidisciplinary areas such as payment for ecosystem services (PES), water storage, value chains, transboundary transects, poverty alleviation, and adaptation to climate change, ensuring that KM is incorporated in all programme activities from planning to implementation.

How ICIMOD is using knowledge management for outreach

Regional needs

- Global insights, trends, innovations, and international learning
- Global and regional views and cross-learning with member countries
- Customising international knowledge and scaling up of local, national, and country-level learning and practices for regional benefit
- Knowledge relevant to resilient livelihoods, adaptation to climate change, and disaster risk reduction, among others
- Findings of the most recent research

ICIMOD programme needs

- Access to information, knowledge, and knowledge management approaches and tools
- Collaboration with partners and networking
- External sector and developments in certain themes
- Capture and harvesting of valuable lessons, workable technologies, and policy instruments
- Improved project impacts
- Replication of usable knowledge
- Improved collaboration within ICIMOD and with partners, cross-learning, and innovation

Organisational needs

- Efficient and effective operations
- Knowledge management as an 'organisational way of life'
- Improved collaboration, programme integration, and cross learning
- Return on investment of Centre's and staff's knowledge

Staff needs

- Knowledge available in a variety of appropriate formats
- Disseminated through a variety of channels
- Documentation and use of staff's tacit knowledge

Integrated Innovation Management for Sustainable Development

When knowledge meets creativity

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How innovations emerge in development work

Innovation emerges when we cross boundaries between academic disciplines, issues, organisational units, genders, generations, and different cultures successfully (for an excellent discussion of innovation drivers, see Taleb 2007). The idea is simple – bring people who work in different contexts together and let them exchange ideas: new perspectives emerge and help to create new solutions to old problems. Innovations, thus, seek to create an environment that stimulates changes in perspective. We cannot plan of manage innovation', but we can manage the organisational context in which innovations may emerge (von Krogh et al. 2000). Fresh ideas do not bring about change unless they are transformed into innovations. Once new ideas, products, or approaches have emerged it is crucial to transfer them into one's specific context. In this article we share two fundamental ingredients to spark innovation: (i) the creation of a formal network or community and (ii) enabling a culture of creativity.

The role of networks in innovation management

Networks can stimulate new project concepts and help project managers reflect on their approaches. Most methodological innovations can be adopted immediately and implemented by field staff as explained in the following case study of 'Networks within the German Development Cooperation' (GIZ).

In GIZ's approach to knowledge and innovation, management networks play an important role: a specific type of internal network plays an outstanding role in organisational learning. In 1990, GIZ established Sector Networks to create an internal platform for learning, innovation, and knowledge sharing among staff and project partners, e.g., in health topics in Sub-Saharan Africa or the Transport Network in South Asia. Today, GIZ runs 18 Sector Networks in which 720 projects and more than 2,700 employees from various countries and the head office participate. Participation is mandatory for all sectoral staff.

> "Networks can stimulate new project concepts and help project managers reflect on approaches"

The objectives of Sector Networks are (i) mutual learning from inter-country experiences , (ii) development of technical and regional approaches and methods to foster the impacts of GIZ projects, (iii) strengthening technical and methodological competencies of staff, (iv) development of portfolio in the region (v) facilitating sharing of business goals and information within the decentralised corporate structure of GIZ, and (vi) individual networking and career planning.

Sector Networks are GIZ's most important platforms for knowledge sharing, innovation, and learning in sectoral topics. They provide regional forums for face-to-face meetings and virtual platforms for continuous knowledge sharing. Each Sector Network is managed by a steering committee led by top managers which plays a crucial role in sustaining the commitment of senior management and relevance of Sector Network outputs for GIZ's business processes. The steering group consists

of project as well as headquarters' (HQ) staff. Sector Networks promote innovation in several ways.

- Innovation workshops with a pre-defined agenda
- Lessons learned-sessions about field experience
- Room for spontaneous innovative processes during network meetings (open-space sessions)
- Establishing change processes for innovation (e.g., roll-out of new methodologies or instruments)

Learning cooperatives

GIZ participates in more than 1,000 global and regional networks and other forms of cooperation. Partners include strategic alliances, innovation and knowledge-sharing partnerships, joint research initiatives, and local knowledge organisations. Innovation usually emerges when we cross boundaries between academic disciplines, thus networking with external partners receives a special focus within GIZ.

The benefits are multiple. First, existing networking arrangements are visible and accessible to the entire staff so that suitable, appropriate partners can be identified easily. Second, innovations emerging from networks find their way into GIZ networks. Third, lessons learned about managing networks and cooperation can be collected and put into practice in other settings, and fourth, networks play an important role in recruitment of professional staff and bringing in new ideas.

Creating a cultural environment for innovation

Innovation is a result of many factors. First, an interesting challenge is needed to spark creativity and trigger new ideas: this requires freedom, ability, and opportunity. Second, situation-specific ideas can rarely be scaled up, so ideas will become innovations only if they can be replicated or adapted to other contexts. In development assistance this is a barrier to managing innovation because different cultures require culture-specific approaches. Third, the organisation must be willing and capable of organising this scaling up process in order to be effective. We identified three key factors for turning good ideas into sustainable innovations (see Trott 2008 and Tidd 2001 for an overview of the academic discussion).

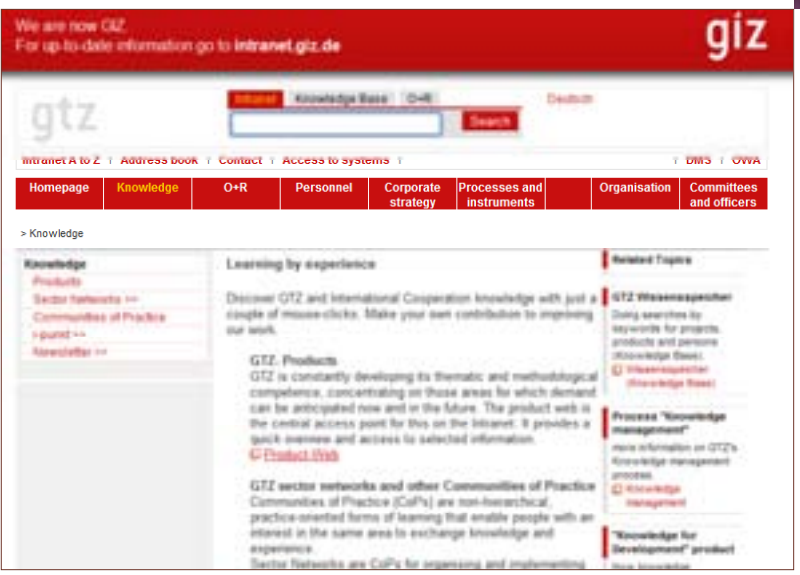
An enabling environment (the culture factor)

Creativity will flourish only if the environment is open to new ideas. GTZ's corporate culture, networking approach, and decentralised responsibilities nurture creativity at all levels. This is not the result of isolated management measures, but rather of a steady and broad commitment. For many years, GTZ's vision emphasised

West Khasi hills, Assam, India

- building trust and openness to share knowledge (this is also part of the annual staff engagement survey);
- promoting individual networking (colleagues expect each other to participate in formal and informal networks);
- large-scale investment in internal networks (e.g., sector networks) and cooperation;
- widespread facilitation of brainstorming and exchange of ideas rather than expert-style lectures (e.g., almost 50% of time allocated to sector network meetings is reserved for brainstorming);

Bhattedanda, Lalitpur, Nepal



- including sharing methodologies, stakeholder participation, and change of perspectives in all management methodologies (e.g., Capacity–WORKS); and
- clear orientation and rules for intellectual property rights.

The general methodology is summarised at www.gtz.de/en/leistungsangebote/28379.htm

Balancing push and pull incentives (the organisational factor)

In GIZ, special focus is placed on identifying and reducing disincentives to knowledge sharing and innovation. Disincentives emerge when (i) access to information creates individual power, (ii) good ideas are not rewarded by managers or colleagues, (iii) change projects are hampered by administrative barriers, and (iv) processes turn into regulations. In such cases, beneficial pull incentives for knowledge sharing, innovation, and learning result from (i) sharing and learning activities as part of annual staff goals, (ii) participation at international conferences and presentation of work results in the HQ, which increases individual visibility and hence boosts career options, and (iii) orientation on impacts and highest quality of services.

Additionally, there are push incentives to intensify knowledge sharing, innovation, and learning: (i) mandatory KM activities for all employees, e.g., mandatory participation in sector networks and the use of the internal document management system, (ii) participation in an introductory course for knowledge management for new staff, and (iii) KM as part of strategic controlling, monitoring and evaluation methodologies, and project management.

Turning good ideas into sustainable innovations (the management factor)

Innovations need time to develop, grow, and become effective. The biggest challenge (and risk) is that new ideas quickly lose attraction when taken to corporate level. KM measures entail a change of routine, e.g., to apply a new debriefing instrument. If this is not embedded in a regular change project, initiatives will fail half-way. Corporate KM change projects require 3-5 years to become effective and yield the benefit expected in medium-sized organisations. From GTZ experience several lessons emerged.

- Top management is in for the long haul and must pay more than lip service. They must be willing to support change processes (even unpopular ones) over a long period.
- Innovations require careful planning and implementation using modern change- management methodologies. Stakeholder views and participation are important for acceptance and success.
- Many technological innovations fail despite management enthusiasm, because the organisational environment is not considered. New technologies will only be effective, if (i) there is a real and lasting business need (e.g., in Operations), (ii) they are fully integrated into core processes, and (iii) they facilitate day-to-day work rather than just altering it.
- Triggering many changes at the same time can place a huge burden on the organisation. The implications of KM initiatives are often underestimated often and seemingly simple changes like introducing a new document repository can result in large-scale

Rangeland community discussion, TAR, China

changes for many people and create a lot of work in communicating with stakeholders, and changing requirements and behaviour. In particular, innovations 'not invented here' should be explained, accepted, and prove their benefits before they can be implemented.

Scaling up new ideas to fully-fledged innovations requires experienced management. Therefore, innovation management initially is a top management task. Creating commitment and maintaining change can be delegated only partially. For practical purposes, innovation initiatives should be designed and organised by a core team, appropriately staffed, managed (change-management methodology), and guided along the corporate strategy (reporting to top management).

Promoting innovation in GTZ

As GTZ operates worldwide, the question arises of how to transfer innovations from different regions throughout the organisation through sector networks. To achieve this GTZ 'products' are introduced or common archetypes of a range of specific projects: a product describes the common basis of a sector's project approaches (e.g., to urban air quality management). When designing a specific project, the standard approach is adapted to local needs.

GTZ identified 100 product managers or subject matter experts to harvest experiential knowledge from networks and individual experts and distribute lessons learned and other information to internal and external recipients. Continuous development, innovation, and learning maintain the quality of knowledge and keep it up to date. 'Learning from evaluations' closes an important organisational learning loop for sectoral, regional, and methodological knowledge. Innovations from project level are identified, selected, and promoted at corporate level. This process takes the GTZ evaluation system as a basis and establishes a scaling up model for new ideas.

The idea behind using the quality management approach is to mainstream quality within the organisation as an integrated, decentralised process implemented along the line structure. It is designed to maintain quality in the core and support processes of service provision. The company-wide added value of a quality management system can be summarised as follows: quality assurance by using and linking existing instruments and initiatives; optimising quality-related use of existing data sources to reinforce learning processes throughout the organisation; and supporting and promoting quality initiatives in departments and business sectors

An internal Quality Award is given on GTZ's 'Quality Day'. The winning and best practice entries are presented at a forum ('Marketplace of Opportunities') where participants engage in dialogue with their colleagues. The initiatives presented have emerged from daily work and have improved the quality of GTZ's core and support processes. The criteria used for selecting and awarding initiatives include replicability on a corporate scale, impact generated, and creativity and support of internal collaboration.

Lessons learned and conclusions

Finally, innovations matter if quality really matters and, in the development context, they support inclusive development. This means that innovation generates new and contextual solutions and ideas that are suitable for solving societal problems at scale and with impacts. In mountain areas of the developing world, marginalised and vulnerable populations suffer from many types of poverty: lack of knowledge being among them. These issues should take priority. Innovations fail if there is no incentive to improve work and results. Functioning innovation management is crucial for competitiveness and it should be well-embedded in core management processes of development organisations. Innovations only emerge in a trusting, creative environment and business culture. 'Making things happen' should be the leading principle of innovation management rather than planning and dictating.

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Tools Mobilising Knowledge for Rural Development – Experience of a regional initiative

Shalini Kala[1], IDRC, ENRAP coordinator, India, skala@idrc.org.in

Every so often one comes across innovations in human development that are not readily available to those who could benefit from them: resulting in 'reinventions of the wheel'. Often knowledge exists only in the heads of the development practitioners who acquired it: it can also be couched obscurely in scientific research journals. As a result innovation, scaling up, and replication and application of good ideas for development suffer.

Among the reasons for this are the relative isolation of people in the field, including farmers and development workers and the lack of interaction amongst practitioners, researchers, and policy makers. This is especially the case for marginalised and remote communities, which remain unconnected with mainstream society. The access of these communities to the knowledge available outside and their ability to share experiences are limited. Development processes bypass them and their voices are unheard in terms of building their own agenda. Lack of knowledge about these communities is a barrier to designing appropriate interventions.

Innovations in information and communication technologies during the last decade have begun to reduce isolation and bring communities together. Knowledge networks are mobilising knowledge to support development outcomes. This paper describes the experiences of a regional initiative for improving knowledge-sharing amongst a wide range of recipients to support marginalised rural communities.

ENRAP

Knowledge Networking for Rural Development in the Asia-Pacific Region, or ENRAP, is a joint initiative of the International Fund for Agricultural Development (IFAD) and the International Development Research Centre (IDRC) of Canada. ENRAP was designed to deliver global knowledge resources to the rural poor. It has supported knowledge-networking among IFAD's projects and partners throughout the Asia-Pacific since the late1990s.

ENRAP promotes tools to document, share, and access information; trains implementation teams; and establishes appropriate mechanisms to support networking.

Assam, India

[1] Shalini Kala is the coordinator of ENRAP. She would like to thank her colleague Apoorva Mishra, for her comments on this piece.

Writeshops, systematisation, and social network analysis have become popular along with radio, mailing lists, communities of practice, websites, and other virtual tools to help reduce poverty. Face-to-face events such as workshops, training, and review meetings also play a role.

Approach

ENRAP's overall approach is to network with relevant actors in the IFAD space – projects, government and non-government agencies, research and training institutions, IFAD grantees, and others — to create opportunities to share; to introduce tools and methods; and to build networking capacities.

"ENRAP's overall approach is to network with relevant actors in the IFAD space"

During the last decade, IFAD projects and partners connected nationally, and regionally throughout Asia-Pacific. Some of the national networks are supported by a website (e.g., India, China, Vietnam, Mongolia) or webpage (e.g., Philippines, Bangladesh), and all are supported by the regional network site www.enrap.org. They also connect around common themes of interest such as monitoring and evaluation of poverty reduction projects; use of participatory GIS to help communities manage their natural resources; application of a value-chain approach to mountain agriculture; and gender mainstreaming and development.

Widespread sharing on subjects critical to poverty reduction has taken place. Monitoring and evaluation personnel throughout the Asia-Pacific report an improved ability to troubleshoot with peer support and to work with headquarters' staff to resolve difficulties. Similarly, networking about gender issues has improved gender practice through improving understanding of project needs and of problem solving.

Meghalaya, India

Tools and methods

Apart from creating virtual and face-to-face spaces, ENRAP met the demands of network members to experiment with different ways of capturing and disseminating knowledge. Methods used include use of video to document lessons from poverty reduction efforts; writeshops to package experiences for different audiences; systematisation methodology to extract field knowledge; familiarisation tours to project sites in other countries; and knowledge-sharing tools to improve learning from meetings.

Digital video documentation – Asia has many languages and oral traditions, thus audio-visual tools are appropriate. They have become popular because of the lowering of equipment costs and the fact that they are now easy to use. Staff from IFAD projects in India, Laos, Sri Lanka, Nepal, Pakistan, and the Philippines received training in shooting, editing, and producing films about poverty reduction mechanisms. Importantly, participants appreciated the power of the medium and even learned how to use raw clips to monitor projects and capture baseline data. Several projects continue to film and use the information, some together with local

Assam, India

agencies. In particular, the Northern Mindanao project in the Philippines provided the regional line department with its experiences on film: the department used its communication lab to edit the film and disseminated it through mass media. A step-by-step training schedule was developed along with a community of practice (www.ranaghose.com/training/).

Writeshops – One of the most frequent requests by Asian projects is for training in writing skills. Written outputs were built in to projects on completion or soon

Knowledge for policy effectiveness: an example from the Philippines

As per the Indigenous People's Rights' Act 1998, ancestral domains must have an ancestral domain sustainable development and protection plan as a requirement for issuing a certificate of ancestral domain claim. The guidelines of the National Commission on Indigenous Peoples (NCIP) at the time only gave a broad description of what the plan is all about, but did not specify the process by which it is formulated. In 2006, a team from an IFAD project working in the Northern Mindanao region systematically documented the process of plan formulation in the municipality of Lanuza, Surigao Sur. This documentation became the basis for the NCIP to review and revise its guidelines, thereby ensuring that indigenous peoples are recognised in local village development plans. Interviews with government staff, JM Canas; and J Unson, Agusan Sur Provincial LGU; and project staff (Prosperidad, Agusan Sur, 17 Nov 2009) revealed that, "In a way, this not only helped in the formulation of new steps or guidelines, but also contributed to capacitating the NCIP itself as an agency. The revised, enhanced guidelines later issued by NCIP stipulated the need for a separate, clearer vision for the IP community… The new guidelines…helped mainstream the indigenous community in the development plans of local government units".

Source: Assessment: Philippines National Network, Antonio Quizon, 2009, ENRAP

after. Some projects divided the exercise into two, training first and writing later, allowing time in between to collect field data. These writeshops helped project teams reflect on experiences, validate with peers, and use expert help to write them down. From 2003 to 2010 several projects and country teams organised writeshops to document project experiences, learning from and adapting the process to their needs and contexts. A guide to writeshops and a review of cases from around the world are available at www.mamud.com/writeshops.htm

Systematisation – Staff find little time to assess their efforts. Monitoring takes place on a regular basis but generally does not capture the more complex changes. Systematisation provides an opportunity to review poverty reduction achievements collectively over a short period of seven to ten days through field research. The information generated helps modify implementation and inform project management as well as government partners. Several projects in China, India, and the Philippines, have tried the methodology and a guide and manual were produced. (www.enrap.org/resources/development-themes/Systematization/books-and-guides).

Knowledge sharing: methods and tools – What started as orientation-cum-training on tools to improve knowledge sharing for IFAD country focal points led to training at project and country level and then to the design of a guide. The tools of world café, peer assist, open space, and chat shows are now commonly used by IFAD projects. They have proven effective in engaging people and improving learning and sharing. Primarily aimed at spreading understanding of the tools among IFAD projects and partners, the guide has received widespread attention from development personnel (www.enrap.org/resources/development-themes/knowledge-management/introducing-knowledge-sharing-methods-and-tools-a-facilitators-guide?searchterm=Knowledge+sharing+tools).

Results

Network members identified several benefits provided by knowledge-networking for poverty reduction; and how use of the tools had helped. Earlier, when the network was still in its preliminary stages, IFAD projects and partners found it useful simply to discover others in the IFAD family. For example, Cameron Odsey, Project Director of the CHARM project in the Philippines, met project directors of the other two IFAD projects in the country and their government counterparts for the first time in 2003 at an ENRAP meeting in Bangkok. He saw this as a major point in the history of the Philippines, network, which now connects all on-going IFAD projects, the government departments who host them, and the National Economic Development Agency.

As the network expanded, members shared problems and resolved common challenges. Mailing lists and workshop events became ways to exchange information, to prepare for events, and to work collaboratively with the IFAD family in Asia-Pacific. The larger network produced smaller and bilateral connections to communicate about issues of specific interest to rural development.

"As the network expanded, members shared problems and resolved common challenges"

Some key outcomes of ENRAP's contributions to knowledge for rural development are given below.

Policy influence – The ability of project and country teams to communicate their experiences in working

with the rural poor improved their dialogue with policy makers. Teams and community members were able to share substantively, instead of simply reporting, in ways that that engaged policy makers. The project director of an IFAD project in North East India felt:

"…sharing information has helped to change [the] policy of the State Government of Meghalaya for pro-poor implementation of the national rural employment guarantee scheme (NREGS) and other government

Meghalaya, India

schemes…" (NREGS is a countrywide programme aimed at providing a minimum of 100 days of work a year to each poor family).

This is thought to have played a role in convincing government and donor partners to scale up the North Eastern Region Community Resource Management Project (NERCORMP).

Learning and project performance – Knowledge sharing and networking are linked to specific benefits to project performance and to improved individual and project ability. While studying the Philippines' national network Tony Quizon (Quizon 2009) reported that knowledge-networking led to: "(i) improving staff skills, (ii) improving project capacities and performance, (iii) creating a culture of learning and sharing, and (iv) bringing publicity and recognition to specific initiatives or target communities".

Project directors and staff commented that their participation in regional events helped to validate their own experiences, broaden their awareness of issues faced in other countries, and learn about new development approaches.

About 70% of participants felt the network helped them to share experiences about application of the value chain (VC) approach to mountain agriculture and helped them meet people and organisations working on VC and access valuable information, as shown by the preliminary results of an online survey hold in September 2010.

Knowledge management – Exposure to tools and methods for sharing knowledge helped operationalise IFAD's increasing emphasis on knowledge management (KM) in its Asian operations. Thus, this initiative to promote networking amongst a dispersed group of people working with marginalised rural communities became a key lever in IFAD's KM efforts. Understanding these tools helps projects implement knowledge management in support of rural development. With resources and systems in place, knowledge generated about rural development through project initiatives is being captured and shared regularly, both internally and externally; e.g., IFAD's Asia-Pacific newsletter has generated a lot of interest.

Conclusion

Capacity development in the use of tools and methods to help knowledge sharing was a key factor in ENRAP's approach. New tools and new ways of combining them with traditional ones have provided opportunities to share information with local communities and to give them a voice in the creation of new knowledge

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Photos from IFAD supported project areas.

Applications of PRA Tools for Knowledge Management in Climate Change Adaptation

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Climate change is a serious threat to the mountain environment and to the sustainability of local livelihoods. Knowledge management is an essential tool for improving the understanding of mountain communities about the risks and vulnerabilities posed by climate change. Effective knowledge management is needed to enable communities not only to adapt their livelihoods to climate changes but also to take advantage of the opportunities such changes bring.

Participatory Rural Appraisal – a brief background

Participatory rural appraisal (PRA) uses methods that facilitate understanding of the problems and perspectives of local communities.PRA can focus on an entire community or on specific sections of the community such as women or self-help groups. PRA methods are used to analyse and understand different aspects of target communities or groups. Using a 'village map', the main resources and locations inside and outside the village are identified; a 'historical time line' charts the major changes and events that have occurred; and a 'problem ranking matrix' helps identify and understand the major problems faced. PRA methods are dynamic and evolve constantly according to the specific needs and innovativeness of the facilitators.

This methodology or concept was developed during the 1970s and 80s in response to a growing need for the participation of rural communities in planning and implementation of development projects. Active participation and understanding of all in the community are the essence of PRA; and consequently its techniques rely heavily on visualisation. PRA tools help increase awareness and understanding in the community about specific issues and problems.

ICIMOD has developed a framework for vulnerability and capacity assessment (Macchi 2011), and a more detailed PRA toolkit for use by field teams (prepared by Dhrupad Choudhury and Nani Ram Subedi, unpublished), that proved very useful for knowledge management. PRA tools help in the collection of information on the impacts of climate change on livelihoods and inherent coping capacities in mountain communities that is useful for policy makers, while also raising awareness about climate change in the local communities.

Communities and individuals need institutions and networks that learn and store knowledge and experience and promote flexible methods of problem solving to augment their adaptive capacities (e.g., www.resalliance.org). Only by improving knowledge about and awareness of climate change risks and mechanisms to address them will resilience to its adverse impacts increase.

In the northwestern Himalayan region of India, use of PRA tools contributed significantly to communicating the risks of climate change. A toolkit adjusted to local contexts and needs sensitises mountain communities to potential and existing risks; the relationship between climate change and resource dependencies and availability; and the consequences of inaction. It also helps people to identify and disseminate information about successful coping and adaptation.

Reflection and sensitisation

Mountain communities are experiencing climate change, but interaction about its nature and the impact on local livelihoods is limited to household level or with friends, neighbours, and relatives. The PRA toolkit provides a platform for reflection at the village or community level - which was really useful for the hill communities.

Significant changes in resources and livelihoods over a 10 to 20-year period were discussed through a Community Historical Timeline. Changes and events contributing to these changes were discussed collectively drawing from individual knowledge and experiences.

Using a Seasonal Calendar, the major weather events (precipitation and so forth) were discussed and noted. Community members were asked to rate the past as well as present intensity of each weather event on a scale of 1 to 5 (from lowest to highest intensity).

In most villages rainfall duration had declined over time while the dry period had increased significantly, as had average temperatures. At the outset, discussions reinforced the perception of community members (especially the elders) that climate change is taking place; and moreover facilitated understanding about the nature and magnitude of the change. For example, generally, the communities knew precipitation had decreased, but they only realised the magnitude of change when current precipitation levels were compared with the past and plotted on a chart. This instigated them to take the climate change issue seriously.

Participatory analysis of impacts on livelihoods

After initial sensitisation, participants selected a combination of tools to facilitate participatory analysis of the impacts of climate change on livelihoods. Ranking and analysis of specific use were needed to avoid recommending too many tools.

A Seasonal Dependency Matrix was prepared to identify the dependency of communities on various resources or occupations during the course of the year – at present and 10-20 years' ago. This facilitated a comparison of changes over time.

Subsequently, the impacts of changes in weather (mapped through the Seasonal Calendar) on community livelihoods were assessed through a tool called 'Community Ranking of Hazards'. Major weather events impacting livelihoods were ranked on a scale of 1 to 5 using a radar chart. The results indicated that the impacts of weather variations on local communities are increasing.

Impacts of prolonged dry spells and decline in duration of precipitation were found to be occurring in the case of agriculture, animal husbandry, and drinking water

supplies. In many villages the impacts were found to be so widespread that the opinion was that agriculture was a waste of time and money because seeds could not germinate due to lack of moisture. During discussions, participatory analysis of the relationship between major weather events and local livelihoods took place.

For example, in several study villages, people complained of increased pest attacks – particularly that of kurmula (a beetle which damages root tubers) – but they were unsure what caused the increase. It was found

that previously many kurmula eggs were destroyed by snowfall and cold temperatures during winter. Other factors and events such as frequent forest fires and increased damage by wild animals were used to draw linkages between socio-ecological changes and climatic conditions.

Case study

During participatory analysis, it was found that in several villages in Almora district, Malta apple trees had given fruit twice in a year. These changes in phenology worried horticulturalists who feared that double fruiting would result in crop losses and overall impairment of the health of the orchards. Participatory analysis led to the conclusion that such changes in fruiting patterns were due to drastic changes in the weather and climate.

Identification of coping and adaptation mechanisms, and institutional dependencies

To carry out this exercise, the seasonal calendar was merged with the seasonal dependency matrix, then the impacts of weather events (identified through community hazard ranking) on resource availability and different livelihood activities were discussed.

The merger of the two tools led to the discovery that in Almora district there was very little rainfall during the sowing season for rice. The people were asked how they were coping with this and it was found that some farmers had adapted by cultivating soyabeans instead while others had started cultivating 'mandua' (a coarse millet) since it is tolerant to warmer temperatures than rice and needs less water.

There were several other examples of the effects of a warming climate: the cropping season for potatoes was decreasing (from ca 5 to 3 months) and farmers had grown cauliflower and peas in the time left over (1.5 to 2 months), surprisingly getting very good returns; in Pagna village the cultivation of crops like mangoes and bananas was found to be well-suited to the warmer climate; in Tehri district buffalo husbandry is being relinquished because of lack of fodder and water but goat rearing is bringing economic gains. Apart from identifying coping strategies adopted by the communities, the tools facilitated dissemination of successful strategies throughout the study villages.

The dependency of villagers on institutions within the village and outside was ascertained with a Venn diagram on institutions. Community perceptions about the external help they needed to overcome the impacts of climate change were identified and documented. Such exercises provide development agencies with useful insights about climate-change impacts and the dependency of mountain communities on resources and institutions.

Conclusion

Use of the toolkit and associated discussions enables us to link local and scientific knowledge about climate change and this in turn helps identify suitable adaptation strategies to enable community responses to climate-change impacts on mountain livelihoods. Through innovative application of PRA tools, traditional knowledge and good local practices can be recorded and useful knowledge gained through peer learning for community-level knowledge exchange, sharing, and benefit.

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ICT4D 2.0 and Mountain Communities

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Information and communication technologies (ICTs) have been making their way into mountain regions for many years. This process is now moving into a second stage: we can call it 'ICT4D 2.0' for mountain communities. This paper explores the priorities for this next phase which will include new technologies, new approaches to innovation and implementation, and a new perspective of mountain communities.

The first phase of ICTs-for-development – ICT4D 1.0 – dates back to the 1990s: it began when the Internet and other digital technologies began connecting with the Millennium Development Goals which needed suitable tools. Under pressure for quick deliverables, practitioners adopted a model used in remote communities of North America and Northern Europe: the telecentre (meaning one or more Internet-connected PCs housed in a communal setting). Telecentres were established but many ran into difficulties; often proving to be neither sustainable nor scalable (Etta 2002).

New technology priorities

On the threshold of ICT4D's second phase, mountain communities stand at a technical fork in the road. Do they lobby for Internet access along the telecentre path or ask for good e-content requiring hardware innovations: low-cost, low-specification 'netbook'-type devices; low-cost telecommunication approaches such as WiMAX; and better ways to store, carry and transmit electricity? Or do they switch to the mobile phone? If they switch to mobile phones, should we still keep thinking about the Internet as the key technology or should we examine how to carry out mountain development through current mobile functionalities?

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Most likely, progress will occur simultaneously along all hardware routes, but the spaces in between that open up when technologies are combined are important. Already remote communities are benefiting from hub-and-spoke models: community radio stations that receive questions by cell phone and broadcast answers sourced from the Internet; or telecentre databases that farmers in the field can interrogate via text messaging.

Hardware alone is an empty shell. Sustainable mountain development will only be achieved if we fill that shell with useful applications. Information will be the foundation. ICT connectivity is of limited value unless farmers can find information of specific relevance to mountain agriculture (Heeks and Kanashiro 2009). Beyond content, communities need reliable, affordable, and applicable services. ICT4D 2.0 will likely be based around an 'm-services' model: for example, using mobiles to deliver health service reminders or information for applications to schools and colleges. Particularly promising, as demonstrated in Kenya, is m-finance because the majority of mountain citizens are currently 'unbanked' (Jack and Suri 2010). [Additional cases are described in some of the other papers in this periodical.]

ICTs seem well understood as tools for delivering information and services to mountain rural communities; little understood is how communities can use these tools to create new incomes and jobs. This productive facility is partly encompassed when mountain residents act as authors of data as seen in community radio and participatory video projects which deliver relevant content and empower those involved as participative creators.

The sense of empowerment and inclusion that comes from content creation and/or application is valuable. But the priority for mountain communities is income generation and employment creation, and we are just waking up to the possibilities. With mobiles, incomes are being created both around the technology – selling accessories and pre-paid cards, and via the technology – selling or taking calls. The early innovators, the Gramin Phone people in Bangladesh, took mobile phones to the farms and fields to connect rural women with their migrant husbands in the Gulf States. More novel ICT-enabled microenterprises are now commencing. In Kenya, Txteagle (www.txteagle.com) is bringing the crowd sourcing model to remote rural areas: outsourcing micro-tasks to mobile phone owners for very small payments (translating from English to Swahili or transcribing short audio clips). A priority for ICT4D 2.0 will be conceiving innovative business models using the growing ICT base – of mobiles, telecentres, and so forth – to create employment in mountain regions.

Innovative models

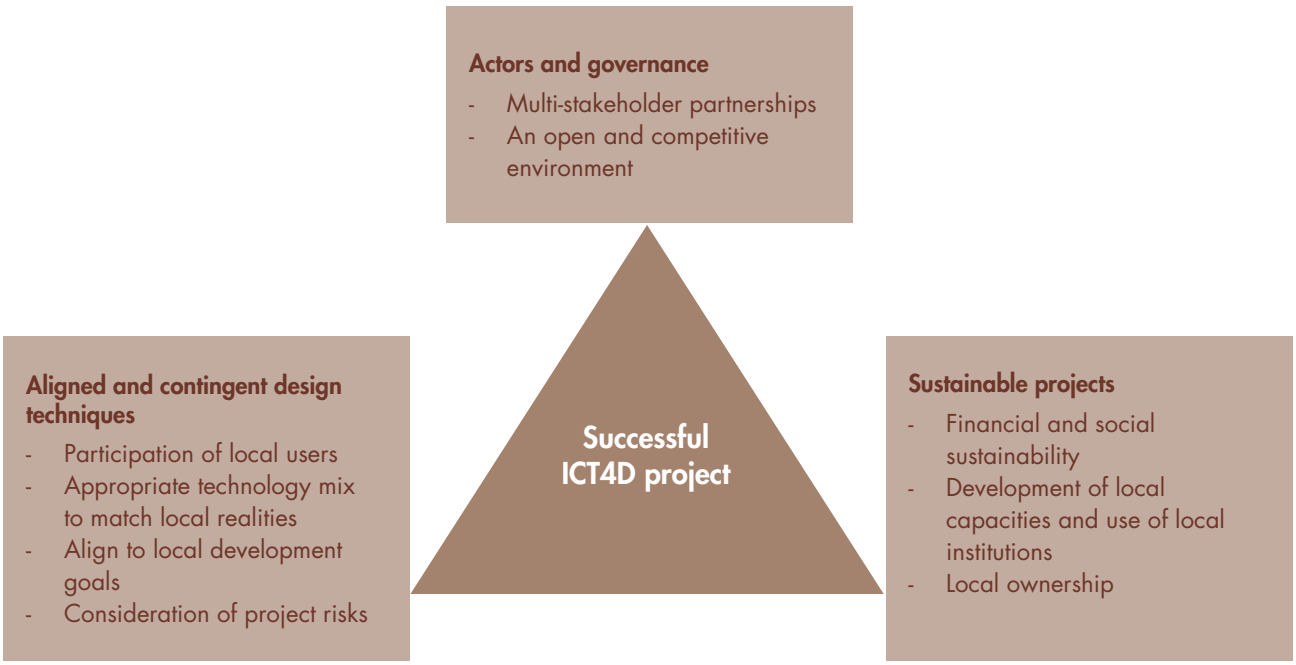
We can identify three different models of innovation.

'Laboratory' (pro-poor) innovation is the first to take place outside mountain communities but on behalf of those communities. Telecentres began this way, and the One-Laptop-Per-Child project was similar; developing new technologies in North America and then trying to extend them to the global South. The danger is a 'design – reality gap': a mismatch between the assumptions and requirements built into the design and the on-the-ground realities of highland regions (Heeks 2002).

'Collaborative' (para-poor) innovation takes place working alongside mountain communities. For example, new software applications under the Bridging the Global Digital Divide project (www.bgdd.org) were developed by academic teams who lived and worked in villages to get local people participating in the design and testing process. This approach will be central to ICT4D 2.0, but it needs to learn lessons from development studies about who participates in this type of co-innovation and how and why they participate: sustainability and benefit-sharing need to be maintained.

'Grass roots' (per-poor) innovation in the context of the Hindu Kush Himalayan (HKH) region is a process of learning by people within mountain communities. In the 1990s, it was hardly a possibility because there were not enough ICTs. More recently, as mobiles, wireless connected PCs, and the web start to arrive in remotest rural areas, these communities are fostering innovations and experiencing benefits. This process does not occur in the traditional laboratory-based knowledge transfer sense but in the sense of adapting and applying the technology to new pathways. At present, we have only anecdotes about this – communities using airtime as currency; communities creating their own mobile-based systems for emergency response – but soon we will hear about communities using ICT to learn how to improve agricultural productivity and access distant markets. As the weight of such anecdotes grows, there will be pressure within ICT4D 2.0 for more systematic means to capture, evaluate, and scale up the innovations materialising within mountain communities.

Good practices for ICT4D 2.0 implementation (based on SDC 2007)

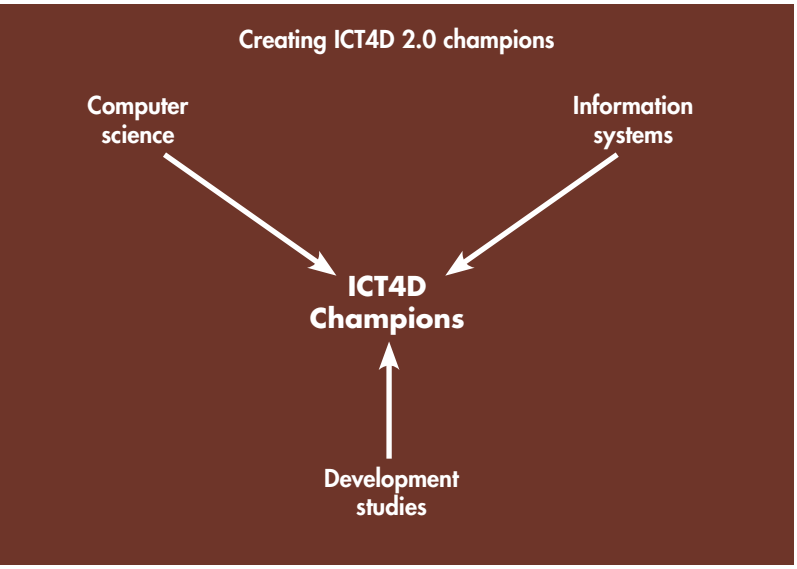


Implementing good practices

If all the above possibilities are to be achieved, then lessons must be learned from the mistakes of ICT4D's first phase. These centre around three issues (see figure).

- Project governance – particularly finding a way to draw stakeholders together into productive partnerships
- Project design – finding ways to manage those design-reality gaps: ensuring local realities are acknowledged and mapped; and ensuring 'hybrid' professionals are present who combine an understanding of technology, systems, and development.
- Project management – shifting from a blueprint approach that manages via a one-off, top-down plan to a process approach that sees ICT4D projects as a journey that will only be sustainable if it is flexible enough to meet the changing financial, social, and political capacities and demands of mountain populations over time.

A combined profile will be required for those leading ICT programmes in mountain regions in future. We might call these ICT4D 2.0 champions 'tribrids' rather than hybrids because, they must combine expertise from three different domains: computer science, information systems, and development studies. These champions can provide a balanced approach to ICT4D strategy; an innovative approach that pulls its plan of action from an amalgam of the key questions each domain can answer:



- What is possible with digital technology? (from computer science)
- What is feasible with digital technology? (from information systems)
- What is desirable with digital technology? (from development studies)

Conclusions

There is no sharp dividing line to say, "ICT4D 1.0 stopped here; ICT4D 2.0 began here". In mountain villages and towns, there is a sense of evolution, not discontinuity. And yet a messy, fuzzy but new paradigm is emerging. Where ICT4D 1.0 was about getting the foundations in place and proof of concept, ICT4D 2.0 can turn part of its attention elsewhere. It can stop thinking solely about pilots and instead think about sustainability, scalability, and impact. It can stop thinking from a monodisciplinary perspective and instead think from a tri-disciplinary perspective that combines computer science, information systems, and development studies. And it can stop thinking solely about 'needs' – often defined from outside mountain communities in rather paternalistic terms. Instead, it can think about 'wants' – what is it that the mountain residents themselves actually demand?

In conclusion we can see that ICT4D 2.0 is about reframing our view of those living in mountain communities using a paradigm which is emerging. Where ICT4D 1.0 marginalised them, ICT4D 2.0 centralises them, creating a demand-driven, rather than a supply-driven, focus. Where ICT4D 1.0 characterised them as passive consumers, ICT4D 2.0 sees them as active producers and innovators.

Three questions emerge. How can those who live in mountain communities be producers of digital content and services and create new incomes and jobs through ICTs? And how can we recognise and scale the ICT-based innovations they produce? We hope that with the work ICIMOD is pursuing in the HKH region, we can generate innovative learning pathways and good practices in the use of ICT4D.

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Regional Data Sharing for the Benefit of Mountain Communities in the Himalayas

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The context

Accurate socioeconomic, environmental, and biophysical data are vital for achieving sustainable development in the Hindu Kush-Himalayan (HKH) region. Human and financial resources are limited and policy makers, resource managers, and researchers need a firm basis for decision making. Impacts of climate and global changes extend beyond political boundaries; hence a regional approach to data access is needed.

Participants at an ICIMOD symposium on 'Benefiting from Earth Observation: Bridging the Data Gap for Adaptation to Climate Change in the Hindu Kush-Himalayan Region' in October 2010 concluded that earth observation information products and services were essential for determining adapation strategies and appropriate development interventions for the benefit of mountain communities in the HKH region.

Earth observation has a special significance in this region, with its high degree of inaccessibility. Technical presentations at the symposium discussed earth observation applications and their potential use to address the issues of climate change and its impacts on mountain areas. Subsequent discussions reinforced the need for regional cooperation to promote the use of earth observation in the HKH region.

Why is data sharing important?

Charles F. Bolden Jr., NASA Administrator, in addressing the Youth Forum during the Symposium stated:

"From space this is a world without borders – we all have a responsibility to cooperate to making our village, our country, our region and this planet a better place."

Global attention to climate change has instigated us to look beyond borders and make a joint effort to cope with its impacts. In the past, government agencies acted separately in collecting, storing, and disseminating data and information: they were agency-focused without considering integrated approaches to decision-making. In terms of climate studies, the HKH is often called a 'data scarce' region. The regional countries are at

different stages of development in terms of utilising information technology and spatial data. The data that are available are fragmented, heterogeneous, and not easily accessible. At the same time, global datasets lack the details needed to define mountain geography and ecosystems. Transboundary, issues, such as melting glaciers, greenhouse gases, aerosols (principally black carbon), biodiversity, and disasters due to extreme events, mean the efforts of a single country are insufficient to cope with them. While the

effects of climate change are more noticeable in the mountains, consequences such as changing water cycles and water storage impact communities downstream. Measuring, monitoring, and modelling changes are critical to facilitate informed policy decisions. Sharing data is indispensable for establishing policy objectives for global and regional priority areas such as climate change, environment, energy, and disaster management.

Why is it a problem in the HKH region?

The challenges of data sharing in the region are both technical and political. Regionally, observation and monitoring are inadequate and systems are fragmented and incompatible. Many observations come from research projects which lack long-term funding and coordination in planning, and implementation of observation networks is lacking. Traditionally, agencies store their data and are reluctant to share it regionally. Data policies are incompatible and in general, conservative in their approach.

Emerging opportunities

Emerging data-sharing policies in the HKH countries show positive changes, but they are slow in relation to the fast-growing needs and technological advances, especially satellite remote sensing. Nepal has now placed topographic data in digital format in the public domain: the pricing policy has been revised to make data more affordable; yet a comprehensive policy document addressing data updates, quality control, and standards is still needed.

The Government of India approved a 'National Policy on Data Sharing' in June 2010 which opened up the possibility of public access for scientific, economic, and development purposes. The Department of Science and Technology is the coordinating agency for working out what can be shared and a pricing policy. The Survey of India formulated a National Map Policy in 2005. It has Open Series' Maps to support development activities.

In Pakistan, the launch of an e-government programme in 2003 included GIS for agriculture, natural resources, and urban property mapping, but activities and policies for sharing data were not integrated. The national map policy restricts the distribution of spatial data. The National Framework for GIS Implementation in Bhutan, 2005, identified problems in sharing and using GIS data and produced an institutional framework for developing and implementing policies: the policies are still not formulated. The use of GIS/RS in Bangladesh has been quite extensive, particularly for flood mapping, monitoring, and modelling. In 2009, there was a study on compatibility of GIS data and development of guidelines for metadata, data-sharing protocol, and national GIS data policy: the recommendations have yet to be transformed into national policies.

China has a 'Scientific Data Sharing Project' which is drafting policies, regulations, and standards based on those existing in different industries. China has established many data centres and networks for environmental resources, agriculture, population and health, basic science, engineering and technology, and regional integration.

The above shows that the HKH countries are working on data-sharing policies and moving towards regional data

generation and sharing. Although sharing data across borders has not been considered explicitly, limited hydromet data are shared bilaterally. Data policies should be guided by a vision of 'information for decision making' to help bridge the data gap for the benefit of the region as a whole.

Need to work in partnership

Rapid advances in GIS/RS technologies and growth in users have raised concerns about data heterogeneity, duplication, and accessibility since the 1990s. What followed was the Spatial Data Infrastructure (SDI) as a collection of technologies, standards, policies, and human resources needed to improve access and use of spatial data. Executive Order 12906 of the US President (1994) established executive leadership for development of a National Spatial Data Infrastructure, and development of a National Geospatial Data Clearinghouse, spatial data standards, a National Digital Geospatial Data Framework, and partnerships for data acquisition. Since then, SDIs at global, regional, and national levels are being promoted to close the gaps in data, data standards, and data-sharing protocols and to avoid duplication and facilitate public access.

The World Summit on Sustainable Development in Johannesburg (WSSD 2002) emphasised the need for coordinated observation of the state of the Earth. Subsequently, the first Earth Observation Summit (EOS) in Washington in 2003 adopted a declaration of political commitment to develop a comprehensive, coordinated, and sustained Earth Observation System of Systems (GEOSS) and formed an ad hoc Intergovernmental Group on Earth Observations (GEO). A framework for GEOSS and a 10-year implementation plan promote the realisation of a future when decisions and actions affecting humanity are informed by coordinated, comprehensive, and sustained Earth observations. GEOSS aspires to involve every country and to cover in situ well as airborne and space-based observations. The GEO-VII Plenary held in Beijing in November 2010 endorsed the GEOSS Data Sharing Action Plan promoting 'full and open' exchange of data with minimal time delay, with few restrictions, and on a non-discriminatory basis at minimum cost. The plan emphasises interoperable systems of sharing data, collective optimisation of the observation strategy, cooperative gap filling, and harmonisation of standards of observation. GEO membership now includes 85 countries, the European Commission, and 61 participating organisations.

ICIMOD and development of a regional database

ICIMOD promotes regional cooperation through interdisciplinary and cross-sectoral partnerships. Over the past decade, working with national and international partners, ICIMOD has promoted the use of GIS and Earth observation applications to support its strategic priorities. Its Mountain Environment and Natural Resources' Information System (MENRIS) Division is a regional resource centre for such applications and is promoting a Regional SDI for the HKH region. The components in its approach are: a) to facilitate cooperation of groups with similar data needs; b) to generate awareness through outreach activities on the value of spatial data and data sharing; c) to promote awareness/understanding and application of national and international standards; and d) to facilitate data discovery through improved national catalogues and capacity building in national institutions.

ICIMOD has been a participating member in GEO since 2008. The membership and endorsement of ICIMOD member countries – China, India, Nepal, and Bangladesh – in GEO show the commitment of governments to use Earth observation for social benefit. In 2010, the US Agency for International Development (USAID), National Aeronautics and Space Administration (NASA), and ICIMOD established 'SERVIR-Himalaya' to complement initiatives already operational in Mesoamerica and East Africa. SERVIR ('to serve') is recognised as an early achiever of the GEO vision. The objectives of SERVIR-Himalaya are improving environmental decision-making through dissemination and analyses of earth observation information, and building a platform for regional monitoring of key environmental and natural resources through established networks of stakeholders in regional member countries and beyond. ICIMOD is preparing to use these networks and resources to generate data for a regional database accessible to all its RMCs and partners.

The Regional SERVIR-Himalaya Platform will be co-owned by ICIMOD and its RMCs through designated agencies. ICIMOD's role will be that of a custodian for harmonising and managing data. Rather than controlling data, it will add value and make it more applicable by sustaining a consultative environment and using the most recent technologies to develop a regional protocol. Hence, ICIMOD is committed to promoting regional cooperation by fostering better exchange of data and beneficial solutions to common regional issues.

Promoting Rapid Adoption of ICT and Behavioural Change in Rural Areas

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The spread of open source software is introducing open competition into the field of information and communication technology (ICT). Unless we familiarise ourselves with these technologies, we will not be able to reap the full benefits of ICT. The introduction of broadband meant that online content could be transmitted at speeds unthought of a decade ago. These technologies are blurring the lines between data, voice, and multimedia, making an open Internet a possibility. At the same time hardware is becoming smaller, more advanced, and mobile.

Despite global developments in ICT, its use in Nepal is limited mainly to metropolitan areas; even simple devices—mobile phones and SMS messages—for social or economic improvement in rural areas are not too widespread. Use of personal computers and Internet are limited in inaccessible areas; for reasons ranging from economic to lack of electricity, the absence of local service providers, and slow adoption of technologies.

Magnus Consulting Group Pvt Ltd, Nepal's first social enterprise, promotes ICT and ICT-based services in rural areas through its owns private-community-partnership (PCP) model. Previous attempts to establish ICT in rural areas through rural institutions – telecentres, or rural information centres, or community information centres – could not sustain these turnkey initiatives (IWB 2009). In 2005, Magnus assessed that unless a social enterprise could integrate business development and management capacity along with access to international opportunities in partnership with community-owned rural micro-finance institutions (MFIs), it would not be sustainable. In late 2006, Magnus partnered with Small Farmers' Agricultural Cooperatives Ltd (SFACL) to pilot its model in Chitwan and Jhapa districts. In a two-phase pilot, Magnus developed a localised finance software called Simple Finance (सरल वित्त) and demonstrated how, through ICT integration, investment can yield both tangible and intangible benefits. The investment itself seemed high at first, and investment entirely by SFACL was perceived as high-risk. By working with the cooperatives for a year, however, and demonstrating the software and how easily it could be used, financial transactions became substantially more efficient than before. Today, with 250 SFACLs in 50 districts, the partnership has crossed the century mark. SFACL managers and employees can now operate computers and software and manage their organisations with the help of ICT. The intervention has not only stimulated

Coffee beans remained unsold for years

Demonstrating how tea is processed

Salang VDC SFACL employee operating a computer

rapid adoption of ICT through demonstration, but also encouraged enterprise by establishing partnerships with a social enterprise, investing in new services targeted at its own community, and sharing the benefits.

Once the foundation was established, integrating ICT-based services or e-services became reasonably easy. In the second phase, Magnus is integrating and facilitating linkages with different services through both Internet and mobile phone technologies. Services include money transfer, and disseminating daily agricultural prices from Kathmandu, Pokhara, and Narayangadh through both Internet and SMS. Other services include Nepal Telecom's prepaid phone recharge, international market linkage of SFACL, coffee-marketing linkages, and national linkages for vegetables that members wish to market. Developing e-content is another unique service provided. Magnus has signed a letter of intent (LoI) with 15 e-content partners (including ICIMOD, Practical Action, Care Nepal, Family Health International, and the Agricultural Information and Communication Centre), from whom it collects published content, digitises and localises it as applicable, and uploads it to www.telecenters.org.np. The e-content is primarily in the agricultural, women's empowerment, employment, and education categories (adapted from the 2009 needs' assessment findings of the Asian Development Bank's project: Empowering rural areas through Community e-Centers.

The partnership model has been effective because the enterprise is a long-term PCP partner that serves the SFACLs through its seven regional offices: each SFACL has on average six hundred household members and a decade of experience with finance and investment. The strategy targets rural farmers who are willing to take a risk for improved access to services. As members they have a stake in service development and improvement. This level of integration guarantees the sustainability of ICT integration and its financial benefits and promotes its rapid adoption through strategic behavioural change.

There are challenges. First and foremost is the amount of time it takes SFACL's management committee to make decisions and to endorse and integrate the services. In the context of ICT being a new 'thing' in these areas, it is difficult for them to assess the level of risk. Hence usually the SFACL which is most proactive and willing to take risks is chosen and each service is piloted first to demonstrate, as in Phase I, that it actually works; and then it is scaled up. Demonstration is often a lengthy process and resources can diminish resulting in loss of the competitive advantage of first arrival. Second is the fact that local people cannot distinguish the good ICT products from the inferior, in particular, software. Local software developers

Installing a battery for a solar-powered computer system

compete by offering low costs but are not transparent about the quality, service, and strength of software architecture. This creates confusion and delays the service integration process. Third is the complexity of identifying the relevant services that each SFACL could offer in its working area and of developing a localised process to manage them. For example, SFACLs in Ilam and Jhapa districts produce 500,000 kg of tea every year. Therefore, services for these SFACLs are quite different from those in Arghakhachi district where coffee is grown.

Another challenge is the use of e-content. Farmers themselves might not have the resources to access the Internet and download daily prices; or they might not be empowered or skilled enough to use the information to their advantage in dealing with local contractors and commission agents. For this, SFACLs are trying to take on the roles of fielding agents between the world wide web and the farmers. Dhading and Makwanpur district SFACLs produce substantial amounts of vegetables that are marketed in Kathmandu. The SFACLs also field information about agro prices and help farmers use it to make good decisions.

Despite the challenges, the model is both replicable and scalable. Magnus managed Asian Development Bank's project for 'Empowering Rural Areas through Community e-Centres' by replicating the same model in six target areas. As a result, these centres are comparatively well sustained: Magnus regional offices provide customer services to them. The lesson learned from the experience is never to undermine the capacity of farmers. If we can demonstrate that ICT integration, irrespective of its cost, can be of benefit in financial terms, its adoption takes place surprisingly quickly. In fact farmers will even be willing to get a smart phone if we can convince them through demonstration.

Reference

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The Voices of the Future Being Heard Now

British Council's Youth Climate Champions in South and Central Asia raise awareness for climate change and positive action

Matthew Knowles, Regional Project Coordinator, British Council Bangladesh; **Smreety Dewan,** Programme Manager, British Council Nepal; **Joyce M Mendez,** KM Communication Specialist, ICIMOD, jmendez@icimod.org; **Ujol Sherchan,** Senior Programme Officer, ICIMOD, usherchan@icimod.org

The youth are the hope of the world and the voices of the future. Climate change will figure prominently in this future, as it challenges the ability of people to survive, and demands far-reaching and wide-ranging adjustments in the way we live. The barriers to appropriate and effective response are many on all levels, from individual to institutional, and range from conquering ignorance to making the leap forward to individual and collective action. Although ramifications are already being felt, it is the youth and generations down the line who will inherit this future and bear the brunt of the uncertain backlash of climate change.

This realisation propelled the British Council, the UK's international organisation for cultural relations and educational opportunities, to establish 'International Youth Climate Champions'. This initiative, under the British Council's climate change programme, helps young people across the globe to work together to develop projects that can help tackle climate change at community level and to voice their concerns to decision makers. It creatively engages young people who wish to take positive action on climate change in relevant local, national, and international fora.

Three countries in Central and South Asia are participating in the programme: Bangladesh, Nepal, and Uzbekistan. Altogether, 40 champions for climate change were chosen in 2009/2010, from these three countries.

Climate Champions are young people who

- are communicators,
- show leadership potential,
- have access to networks and demonstrate the ability to act as influencers, and
- demonstrate a sound knowledge and understanding of climate change issues.

The South and Central Asian champions are turning innovative ideas into positive actions in their communities and spheres of influence, armed with pragmatism and an ability to persuade and engage others. The champions are in a variety of influential fields such as mass media, theatre, and the arts; some are future lawyers and budding, enlightened entrepreneurs, others are young university professors.

In Nepal, the champions engaged in 10 interesting social action projects which varied from composing songs to working with Buddhist monks and religious gurus to raise awareness about climate change. One project measured the carbon footprints of the monks and motivated them to live a carbon-neutral life.

As part of the awareness campaign, Rojesh Shrestha launched the song 'Jagou' ('Wake Up') at a concert organised by the network of champions in Kathmandu. The concert assembled 15 bands popular with young people to perform live in front of a mass audience, and the entertainers communicated climate change messages through their music. This is perhaps the single largest

crowd (estimates 50,000) that has attended a climate change awareness-raising campaign in Kathmandu to date. Another champion, Sushila Pandit, launched a website www.thegreenwatch.net.

Some champions are using the powerful media of theatre and radio, like Abhimanyu Magrati who will be producing radio dramas using radio talent to tackle the issue in ways that ordinary people can understand. Ram Babu Regmi has begun introducing climate change themes through what he calls 'forum theatre' which tackles issues through 'kachahari natak' (street drama) and provides a forum for people to devise solutions of their own. Some young media practitioners are making short films and written clips to penetrate a media often dominated by big business and politics.

In Uzbekistan, the champions are focussing on radio programmes and popular media such as cartoons and animation, and using web pages and social networking. In Bangladesh, one champion, Proggna Paromita Majumder, believes in starting young and is creating awareness among primary school children in Dhaka, including awareness of the need for behavioural change. She is showing them concrete examples of actions, such as conserving energy and recycling toys and old newspapers, and encouraging them to pass on what they learn to their parents and friends.

Some champions are organising green clubs, creating 'green man' and 'green woman' characters, promoting green technologies, and making a pitch in the business and private sectors. British Council supports these young partners for climate change by helping them access the training, knowledge, and information that they need to ignite discussion in their communities. Recently, the champions went through a series of training sessions at ICIMOD on various aspects of climate change, and had an opportunity to interact with local community forest user groups to learn first-hand about the impacts of climate change on community forests and the livelihoods of local communities, and their adaptation strategies. They used the participatory rural appraisal methodology that they had learned to capture local knowledge, and were also able to see at first-hand low-cost agricultural and renewable energy technologies that can be used by farmers and rural households as adaptation measures. The project also links them to other networks of young people and offers them opportunities to devise proposals and projects that will help them realise their vision.

The Champions will want to do things locally, but they will also be open to learning about the challenges affecting other young people around the world. Some have perspectives on climate justice and issues of equity that surround climate change, and as they follow their projects, they will have stories to share about the ways in which changes are affecting everyday lives.

The intercultural discussions and storytelling not only explore the question, 'How has climate change affected your communities?', but also why they think this has happened. By bringing a network of Climate Change Champions together in conversation, the initiative hopes that they will discover how behaviour in different countries has affected the vulnerable communities from which they come. By capturing their stories in written work, photography, and film, we will help young people in Central and South Asia to tell their stories and have their voices heard.

It is hoped that some projects, will have the scope to span a number of communities and the potential over time to grow into national campaigns. Thus it will help the power of young people's voices to build relationships for mutual benefit worldwide. The British Council sees the potential of these champions to progress from networkers to global ambassadors. The idea is to backstop the champions with knowledge, tools, and methodologies so that they can apply them in their

day-to-day work; as well as to establish a platform for exchange of case studies, good practices, and lessons learned. The platform will not only be a virtual meeting place for climate champions, but also a crucible for generating and testing ideas, developing proposals, sharing experiences, and building solidarity. In the end a global network will emerge of enthusiastic young people with knowledge, contacts, and resources to take the initiative to a whole other level and usher in a more climate-resilient, not to mention climate-friendly, future.

Community-Based Early Warning

Bringing institutions, science, and society together

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Category 3 'Cyclone Bhola' killed over 500,000 people in Bangladesh in 1970. Cyclone Sidr of a similar magnitude killed 3,500 in 2008, less than 1% of the fatalities in 1970. What made this huge difference possible? This article highlights how Bangladesh is reducing vulnerabilities to floods and cyclones by making information accessible to those to whom it matters most.

Floods and cyclones are the two most prominent hazards in Bangladesh, which is 1st and 6th respectively in terms of people at risk among countries facing similar hazards (see table).

Hazard type	Population exposed	Country ranking
Floods	19,279,960	1st out of 162
Tsunami	1,598,546	3rd out of 265
Cyclones	4,641,060	6th out of 89
Earthquakes	1,330,958	17th out of 153

Source: Extracted from the 2009 Global Assessment Report

Although cyclone monitoring technologies continue to improve significantly, the information rarely reaches communities in time to enable them to evacuate vulnerable areas. Similarly, although flood-forecasting observation systems have improved with time, information on impending floods is sent mostly to government and other agencies and fails to reach vulnerable communities in an understandable form. Even when the information is disseminated, the messages are often sophisticated and transmitted through technologies that are either inaccessible or incomprehensible to many vulnerable populations. Efforts are needed to make information accessible and understandable if it is to have a life-saving impact.

To address this problem, two noteworthy initiatives were introduced in Bangladesh that focus on adding value to information by simplifying messages and involving the communities so that they can benefit from the information.

The cyclone preparedness programme

The cyclone preparedness programme (CPP) was launched by the International Federation of Red Cross and Red Crescent Societies (IFRC) and Bangladesh Red Crescent Society (BDRCS) International Federation, and later institutionalised in 1973 by the Government of Bangladesh. The CPP uses a warning mechanism made up of signal systems that warn communities in the coastal districts of Bangladesh of impending cyclones in time for them to evacuate to safe places before an impending hazard becomes a disaster.

There are three committees and two institutions at national level: the National Disaster Management Council (NDMC), headed by the Prime Minister; the National Disaster Management Advisory Committee (NDMCC); the Inter Ministerial Disaster Management Coordination Committee (IMDMCC), headed by the Ministry of Food, Disaster Management and Relief (MFDMR); the Disaster Management Bureau (DMB); and the Directorate of Relief and Rehabilitation (DRRO). There are various disaster management committees at field level in the district, sub-district (upazilla), and union councils headed by a deputy commissioner, upazilla nirbahi officer, and chair of the respective areas (source: South Asian Disaster Management Centre). More importantly, community members act as volunteers for the CPP to mobilise people in the event of cyclones.

The effectiveness of the CPP was demonstrated in 2007 during Cyclone Sidr. News about the cyclone was relayed from the World Meteorological Organization to the Indian Meteorological Office in New Delhi which relayed the message to the authorities in Bangladesh. The authorities in Bangladesh then alerted the local Red Crescent office which mobilised 40,000 volunteers to relay the message to vulnerable communities using cycles and megaphones. Two million people had been shifted to cyclone shelters by the time the cyclone landed. (Details are available at www.preventionweb.net/english/professional/news/v.php?id=1115&pid:50.)

In this case, scientific information was generated at international level and the CPP became active from the moment the information reached the national threshold.

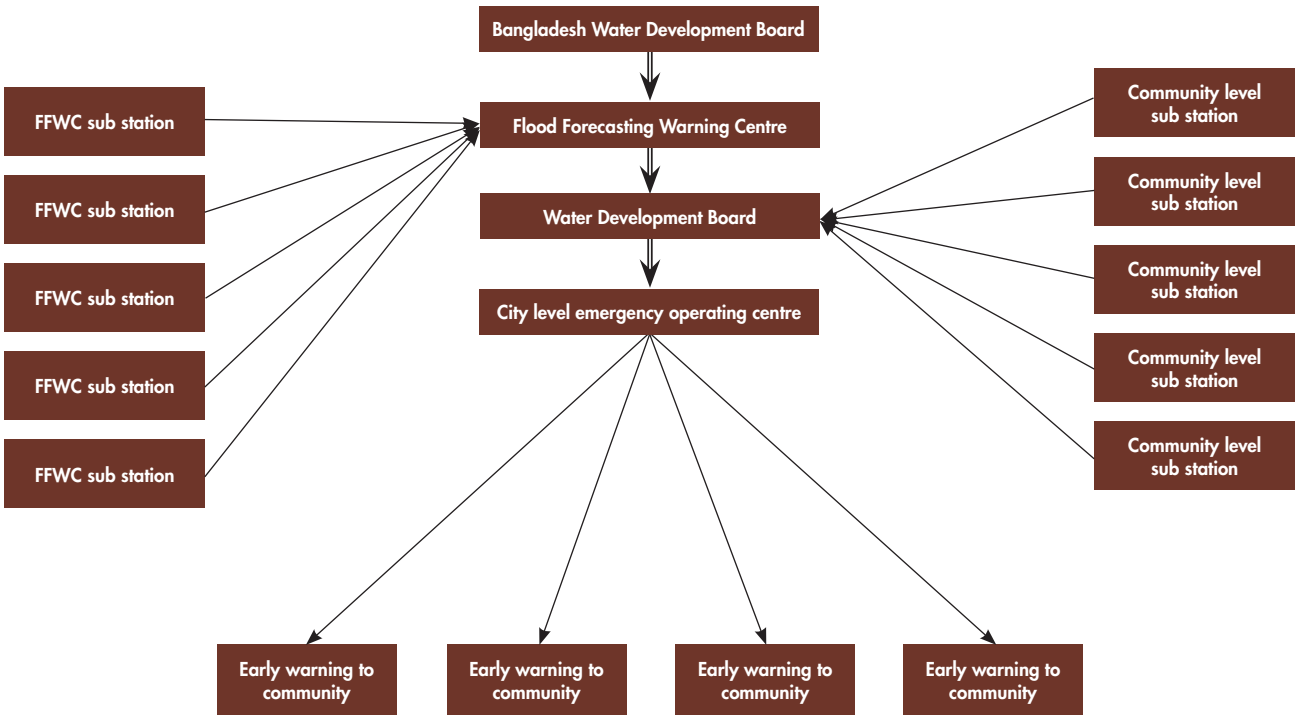
A people-centric early warning system for floods in Jamalpur, Bangladesh

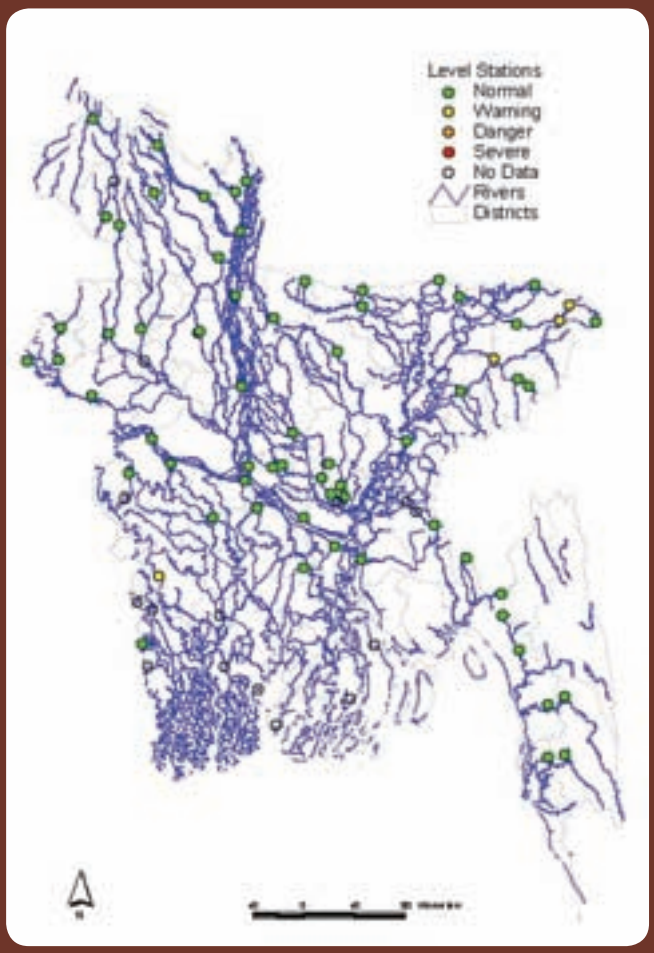
The Flood Forecasting Warning Centre (FFWC- www.ffwc.gov.bd) of the Bangladesh Water Development Board produces weather reports such as daily monsoon bulletins and river status reports; river-level forecasts for 24, 48, and 72 hours; current warning messages; special flood situation reports; inundation status maps; and flood forecast maps. This information, however, is confined to institutions and does not reach the communities.

Installation of flood gauge at the community level

To address this, the Asian Disaster Prevention Centre (ADPC) is implementing a 'Programme for Hydrometeorological Disaster Mitigation in Secondary Cities in Asia' (PROMISE) in Jamalpur, Bangladesh. The city is on the banks of the Brahmaputra and Jamuna and prone every year to floods, cyclones, soil and river erosion, and water logging. Of the city's 12 administrative wards, three are in low-lying areas and densely populated by poor, landless, and vulnerable communities. The PROMISE project brings science and society together by adopting a people-centric, end-to-end flood early warning system (Figure). The city-level water development board (WDB), municipality, and community are the stakeholders in this system which has a technical working group chaired by the municipality chairperson

People-centric flood forecasting system





Typical flood status report from the Flood Forecasting Warning Centre. www.ffwc.gov.bd/

and includes government departments such as the local government and engineering department (LGED), water development board, agriculture, town planning, elected representatives, NGOs working on floods, and Red Crescent Society and community volunteers.

The PROMISE project focuses on simplifying the information generated by FFWC by using rainfall and river-level data to determine which areas will be inundated to what depths within the city. Under the project, the Jamalpur Water Development Board has installed 14 community-level sub-stations where trained volunteers from the community collect information on river-level data by reading flood gauges located upstream and downstream at strategic locations in the city. Flood-gauge readings are based on WDB measurements observing increasing water levels along the river at different intervals during the monsoon season. Volunteers collect river-level data and provide them to the WBD and an emergency operating centre (EOC). The WDB then forwards data to the Flood Forecasting Warning Centre (FFWC) and in return receives inundation maps. The WDB has developed indicators or danger levels for the flood gauges to make them easy to understand. After collecting the information from community sub-stations and the FFWC, the WDB provides flood forecasting information in terms of inundation and water depth and also the time to evacuate to the EOC operated by the municipality. The EOC then mobilises its trained volunteers and elected representatives from the respective wards to inform the community through display boards.

The project has provided the community, the end user, with access to the scientific knowledge. This early warning facility has bridged the gap between central-level government institutions and the municipality and enabled them to coordinate and work together to save the lives and property of the most vulnerable in the floodplains of Bangladesh.

Key challenges and limitations

The initiatives are noteworthy for making information accessible to communities which enables them to save lives and property. However, Information sharing is a means, not an end, and must be integrated into a warning system. The ideas in this article may be replicated elsewhere; nevertheless, there is a great need to consider the limitations and external factors that determine the success or not of such models. Some of these are outlined below.

1. Accuracy and reliability of information – Although flood-prediction models have improved significantly in recent years, the tools for prediction are not accurate enough. As a result, there have been occasions when false alarms have been triggered, leading to loss of faith in the information and the systems in the community.

2. Preparedness first and access to resources – It is insufficient to provide flood warnings and information alone. The system must be holistic and provide the necessary resources such as evacuation centres and adequate training about how to respond to flood warnings. Mobilisation of volunteers and management of logistics are other areas for which good practices can be shared region-wide.

3. Reluctance of communities to relocate – Frequently communities prefer to stay back in vulnerable areas in the hope of saving their limited possessions. These communities need assurance about rebuilding rather than access to information.

4. Oiling the machinery – The effectiveness of a warning system depends on a holistic community-based disaster preparedness programme which prepares people to act in a particular way during emergencies. Regular drills are needed to check on the preparedness aspect as well as keeping people's knowledge and priorities up-to-date.

The Challenge Ahead for ICIMOD

Madhav Karki, Deputy Director General, ICIMOD, mkarki@icimod.org

The demand for relevant scientific knowledge to achieve the goal of sustainable mountain development will increase in the years to come. ICIMOD has to accept this challenge, improve its knowledge products, and communicate in a targeted and effective manner.

Knowledge generation, innovation, technology transfer, and effective communications are the key elements of ICIMOD's strategy to become a recognised, relevant, results-oriented, and responsive knowledge organisation in the region. ICIMOD aims to be a centre of excellence in knowledge management and an enabling centre in informing, influencing, and empowering our regional member countries and strategic partners with knowledge that is applicable and accessible.

As a regional knowledge-based organisation, ICIMOD is fully aware that the lack of factual and relevant data and information is hampering holistic development in the Hindu Kush-Himalayan region: a region that is considered to be among the most vulnerable in the world from the perspective of climate change. The Intergovernmental Panel on Climate Change (IPCC) and other agencies have already indicated that there is a serious lack of data for this region. Compared to other parts of the world, the region not only lacks data on critical issues such as environmental change and biodiversity degradation, but also, due to the sectoral nature of data generation and paucity of policies and protocols for sharing data, there is little new, relevant knowledge to address emerging problems such as local and global climate changes.

Lack of data is not the only problem: because of different standards, time series and scales, data cannot be shared in the region easily. Only by establishing observation stations and research and monitoring sites and fostering regional cooperation will it be possible to collect data systematically over the long term and to acquire the amount needed for analysing and predicting future trends in environmental change. ICIMOD has compatible regional programmes to achieve this objective, but only partially since the data have to be generated on both national and regional scales.

ICIMOD's strengths lie in developing and implementing regional programmes and fostering regional cooperation to enable better management of transboundary resources. It is also engaged in collating and sharing socioeconomic, environmental, and realtime or near realtime hydrometeorological data for design and development of joint plans and programmes to effectively harness the region's ecosystem resources and address common concerns and challenges.

Godavari, Lalitpur, Nepal

Bringing a regional perspective to individual countries and taking national perspectives to the region, as well as facilitating regional dialogue and supporting transfer of knowledge to formulate its application, are the challenging tasks that lie ahead for ICIMOD. We have begun to develop a regional database using the latest Enterprise GIS and Internet platforms to collect, classify, organise, visualise, and share data, information, and knowledge about mountain issues and people's needs. The database will facilitate interpretation, synthesis, and analysis of data before it is repackaged and used by our stakeholders to design, implement, and monitor different development interventions.

ICIMOD will pursue its vision to create an environment conducive to active and useful knowledge exchange, as well as plans to intensify its support to partners by providing the knowledge needed for development. ICIMOD will increase its capacity to facilitate issue or theme-based sharing and exchange between and among regional research institutes, universities, and think tanks to close knowledge gaps. ICIMOD will continue to play an instrumental role as a platform for innovation and ideas to improve the quality of development interventions in the Hindu Kush-Himalayan region. The Centre has a regional, transboundary vision of sustainable development for which global programmes and strategic partners are needed capable of downscaling or customising global knowledge to address climate change issues in the Hindu Kush-Himalayan region. Through our strategic programmes in water, ecosystem services, and livelihoods, we will continue to generate and share data to address the issues of scientific uncertainty and close knowledge gaps in order to deal with climate change. At the same time, we must promote the ownership and active participation of various actors. To achieve this, we will develop pathways and impact chains for knowledge sharing using e-learning and social media tools so that we can engage young people as drivers of change in approaches to adaptation to a changing climate. We will, thus, seek new avenues to bridge the gaps in scientific learning and use through informing and influencing public policies. Our goal will be to move from vision to reality, inviting the participation of all stakeholders concerned. In this manner we believe the distance between certainty and uncertainty can be bridged and the well being of mountain people and the communities of the Himalayan region – upstream and downstream – improved.

Centre News

The Annual Meeting of the ICIMOD Board of Governors, 2010

The 41st Annual Meeting of the ICIMOD Board of Governors, with associated committee meetings and the meeting of the ICIMOD Support Group, was held from 21 to 25 November 2010 in Mussoorie, India, hosted and supported by the Government of India.

The meeting commenced with an official opening on the evening of 21 November in the presence of Mr Subash Kumar, Chief Secretary, Government of Uttarakhand. This was followed by Partners' Day on the 22nd of November which showcased the collaborative work of ICIMOD's Indian Partners. The GB Pant Institute of Himalayan Environment and Development (GBPIHED), Himalayan Action Research Centre (HARC), Aajeevika, and Aaranayak all participated in Partners'

Day, presenting their work on the Kailash regional programme, value chain development, and local adaptation to climate change.

The Board's meetings concluded on the 24th November with the full ICIMOD Board of Governors (BOG) Meeting, chaired by Mr Vijai Sharma, Secretary, Ministry of Environment and Forest, Government of India. The Board approved ICIMOD's plan and budget for 2011 and approved the recommendations of the Mid-Term Review and ICIMOD's management response.

The Board reviewed the framework papers on economic analysis, funding strategy, and foundation guidelines, as well as ICIMOD's regional member countries (RMCs) outreach paper.

The ICIMOD Support Group meeting was chaired by Dr Christoph Graf. Interest was expressed by the donors present in collaborating with ICIMOD, and future commitments for support were received. Mr Pal Prestrud was nominated as a new Board member. ISG members and Board members visited a partner site, the Dhanolti Eco-Park, an innovative model of community-based natural resource management.

At the end of the meeting on the 25th November, members of the Board of Governors and ICIMOD Support Group visited some key Indian national institutions based in Dehradun: Wadia Institute of Himalayan Geology (WIHG), Indian Institute of Remote Sensing (IIRS), Wildlife Institute of India (WWI), and Indian Council of Forestry Research and Education. It was thought that there is huge scope for building and strengthening close collaboration and partnerships with these key institutions.

Anju Rana, arana@icimod.org

ICIMOD Board of Governors 2011

Regional Board Members

Eng Raz Mohammad Raz
Deputy Minister of Irrigation and Infrastructure
Ministry of Agriculture, Irrigation & Livestock, Afghanistan

Mr Masud Ahmad
Secretary-in-Charge, Ministry of Chittagong Hill Tract Affairs
Bangladesh Secretariat, Bangladesh

Mr Sherub Gyaltshen
Secretary, Ministry of Agriculture, Bhutan

Prof Dr DING Zhongli
Chairman of CN-ICIMOD
Vice President, Chinese Academy of Sciences, PR China

Mr Tishya Chatterjee*, IAS
Secretary, Ministry of Environment and Forests, India

Dr Nyi Nyi Kyaw
Deputy Director General, Forest Department
Ministry of Forestry, Myanmar

Dr Jagadish C Pokharel (to March 2011)
Vice Chairman, National Planning Commission, Nepal

Mr Junaid Iqbal Chaudhary
Secretary, Ministry of Food, Agriculture and Livestock, Pakistan

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Dr Jacqueline A Ashby
Chair, ICIMOD Programme Advisory Committee (PAC)
Vice Chair, ICIMOD Board of Governors (BoG)
Research and Policy Coordinator, Andean Change Program
International Potato Center (CIP), Peru

Dr Elke Förster
Environment, Climate Change and Biodiversity (4701)
Priority Area Manager
Deutsche Gesellschaft für Intenationale Zusammenarbeit (GIZ) GmbH
Germany

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Chinese Academy of Sciences (CAS), PR China

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Dr Lars-Erik Liljelund, Director General, Prime Minister's Office, Sweden

Mr Pal Prestrud, Director, CEO, CICERO, Norway

Dr Christoph Graf, Chair, ICIMOD Support Group
Head, South Asia Department, Federal Department of Foreign Affairs
Swiss Agency for Development and Cooperation (SDC), Switzerland

Dr Andreas Schild, (Ex-officio) Director General, ICIMOD

*Profile will be provided in the next periodical

New Regional Board Members

H E Mr Raz Mohammed Raz, Deputy Minister, Ministry of Agriculture, Irrigation and Livestock (MAIL), Afghanistan

H E Mr Raz Mohammad Raz, Deputy Minister, Irrigation and Infrastructure, Ministry of Agriculture, Irrigation and Livestock(MAIL), was nominated to the ICIMOD Board in June 2010 by the Government of the Islamic Republic of Afghanistan. Mr Raz started his professional career in 1979 as a procurement officer with the Ministry of Water and Power and continued to work in different positions. In early 1989, he moved to Pakistan where he was the Logistics Manager for Afghan Aid for five years, and then for the next eight years he occupied various positions in the UNOCHA headquarters (Islamabad), the UNOCHA Regional Office (Kabul), and the UNCO Central Regional Office (Kabul). In 2002, after a short stint with UNAMA, he was a team member at the University of York (UK), and Pisa University (Italy) involved in organising an orientation workshop for senior government officials on 'Preparation of a Development Budget for Afghanistan National Programmes'.

Mr Raz joined the Ministry of Rural Rehabilitation and Development as Humanitarian Affairs' Advisor in 2003 and then as National Planning Coordinator until 2005. From March 2005 to February 2010, Mr. Raz worked as the Deputy Minister for Administration and Finance, Ministry of Rural Rehabilitation and Development, where he looked after the departments of Finance, Administration, Procurement, Human Resources, and Provincial Affairs as well as the 34 provincial departments of the Ministry. In April 2010, he assumed his current position. Mr Raz has participated in numerous national and international conferences, workshops, and training courses in the fields of leadership, administration, management, programming, emergency responses, human rights, and gender-related issues. He has a BSc in Mechanical Engineering from the Faculty of Engineering, Kabul University (1978) and an MA in Post-War Recovery Studies from the University of York, UK (2002).

Dr Nyi Nyi Kyaw, Deputy Director General, Forest Department, Ministry of Forestry, Myanmar

Dr Nyi Nyi Kyaw, Deputy Director General, Forest Department, Ministry of Forestry was nominated

as the Regional Board Member for Myanmar on the ICIMOD Board in August 2010. Born in 1962, Dr Nyi Nyi Kyaw started his career as an Assistant Plantation Officer in the Forest Department, West Pathein, Ayeyawady Division. He held this post from 1987 to 1989 and then served a year as a junior officer in the Township Forest Office in Hlegu. From 1990 to 1997, he worked as a Range Officer in the Central Forestry Development Training Centre, Hmawbi, and the Planning and Statistics' Division, Yangon. He joined the Forest Research Institute in Yezin as a Junior Assistant Research Officer in 1997 and later worked as Assistant Research Officer at the same institute until 2000.

Dr Nyi Nyi Kyaw received a Bachelor's degree in Forestry from the Institute of Agriculture, Yezin in 1986; a Master's degree in Tropical Forestry from the University of Goettingen, Germany, in 1995; and a PhD in Forestry Science from the same university in 2003. From 2003 to 2006, Dr Nyi Nyi Kyaw worked as the Assistant Director in the Natural Resources' Division, Forest Research Institute, Yezin, and also served as a part-time Lecturer at the University of Forestry. Later he became Deputy Director of the Forestry Development Division in the Forest Institute and the National Project Manager for the ITTO (Teak) Project from 2006-2009. He became Director of the Forest Research Institute, Yezin, and Director of the Training and Research Department Division, Headquarters, Forest Department, in 2008. During his professional career, Dr Nyi Nyi Kyaw has authored many research papers and journals and presented papers on REDD, Forests and Climate Change, as well as supervising Master's and PhD theses.

Dr Jagadish C Pokharel, Vice Chair, National Planning Commission, Government of Nepal (to March 2011)

Dr Jagadish Chandra Pokharel, the Vice Chair of the National Planning Commission, Government of Nepal was nominated to the ICIMOD Board in March 2010 by the Government of Nepal. He previously served on the Board from November 2006 to 2007. Born in western Nepal in 1953, Dr Pokharel has had a rich professional career spanning approximately three decades, and brings with him broad mountain development experiences. Dr Pokharel first started as a lecturer in Tribhuvan University Engineering Institute in 1978; and since then has held various positions in the teaching, development, and government sectors. He has served as a consultant and resource person in international organisations such as UNDP, World Bank, ADB, WFP, UNFPA, and USAID; and he has served actively as a member, chairman, team leader, or coordinator on several national committees, commissions, and task forces of the Government of Nepal. Dr Pokharel has extensive experience in development and planning techniques related to resettlement, environmental impact assessment studies, community mediation, implementation of national conservation strategy, participatory development, and environmental management, to name a few.

Dr Pokharel was a member of the National Planning Commission from 1998 – 2002 and Vice Chair from 2006-2008. At present, he is leading his team in preparing the progress report 2010 for Nepal's Millennium Development Goals (MDG) for a National Planning Commission/ UNDP project. Widely travelled, Dr Pokharel has authored and co-authored several papers, books, and articles. Dr Pokharel received a Bachelor's degree in architecture from the Aristotle University of Thessaloniki, Greece, in 1978, a Master's degree in Urban and Regional Planning from the University of Hawaii, USA, in 1985, and a PhD in Regional Planning from the Massachusetts Institute of Technology, USA, in 1991.

Mr Junaid Iqbal Chaudhry, Secretary, Ministry of Food and Agriculture, Government of Pakistan, Islamabad

Mr Junaid Iqbal Chaudhry, Secretary, Ministry of Food and Agriculture, Government of Pakistan, assumed the position of ICIMOD Board Member in June 2010. Mr Chaudhry has held many different positions during a career spanning more than 40 years. He has served in the corporate and public sector in various capacities. He began his career in 1969 with the Pakistan Air Force as pilot and was the recipient of the Sword of Honour, an honorary sword awarded for overall best performance during the training period at the Air Force Academy. He was decorated in the 1971 war for his outstanding contributions.

He was inducted into the Civil Service in 1980. He possesses a rich experience in development sector and public administration. He has served as Assistant Commissioner in three sub-divisions; Additional Deputy Commissioner in one district, Deputy Commissioner in three districts and Chief Commissioner in Islamabad. He headed the Food and Agriculture Department of Punjab, Punjab Seeds Industries Corporation, Local Government and Rural Development, and served at several provincial secretarial positions. At the Federal level, he has served as Personal Staff Officer, Prime Minister's Secretariat, Additional Secretary, Economic Affairs Division and as Ombudsman. He has been serving as Federal Secretary, Ministry of Food and Agriculture since June 2010. He holds a Bachelor's degree in science from Peshawar University, Pakistan.

ICIMOD at the Tenth Meeting of the Conference of Parties to the Convention on Biological Diversity (CBD COP-10), 18-29 October, Nagoya, Japan

The CBD's COP-10 was one of the most important international conferences on biodiversity, as the meeting adopted a ten-year strategic plan, a resource mobilisation strategy to support implementation of CBD objectives, and a new international protocol on access to and sharing of benefits from the use of genetic resources.

ICIMOD, with its focus on biodiversity in the Hindu Kush-Himalayan (HKH) region, participated in COP-10 and hosted a series of activities. As an observer, ICIMOD lobbied for the mountain agenda during Plenary Sessions of the Programme of Work on Mountain Biodiversity (PoW-MB) and Protected Areas. The Centre brought to international notice its collective efforts with regional member countries to implement the PoW-MB and celebrate the International Year of Biodiversity (IYB). The CBD Secretariat appreciated the participation of ICIMOD and recognised the centre as an important partner in implementation of the PoW-MB.

ICIMOD's exhibition booth presented its mission, approaches, and initiatives taken for management of biodiversity in the region through scientific as well as general publications, DVDs, and posters. Scientific posters were also displayed at the poster session

and CEPA Fair. ICIMOD chaired a high-level session attended by ministers from Bhutan, Austria, Switzerland, the European Commission who appreciated its work.

In addition, ICIMOD's article, 'Mountain biodiversity conservation and management: a paradigm shift in policies and practices in the Hindu Kush-Himalayas' in the Journal of Ecological Research, was released by the CBD in collaboration with the Ecological Society of Japan. An article on 'the need for linking the CBD and UNFCCC to achieve post-2010 biodiversity targets' was also published in the Square Brackets: CBD Newsletter for Civil Society. ICIMOD's contribution was also reflected in CBD Technical Series No. 53.

For more information, please visit www.icimod.org/iyb2010

Three side events were held on transboundary landscapes, challenges of mountain biodiversity conservation in the context of climate change, and IYB celebrations. In the side event on transboundary landscapes, scientists called for a global network for long-term ecological research in mountain areas to reduce scientific uncertainty. In the second side event, HKH countries called on the global community to pay attention to the vulnerability of the region as a hotspot for biodiversity and climate change, emphasising the importance of regional cooperation.

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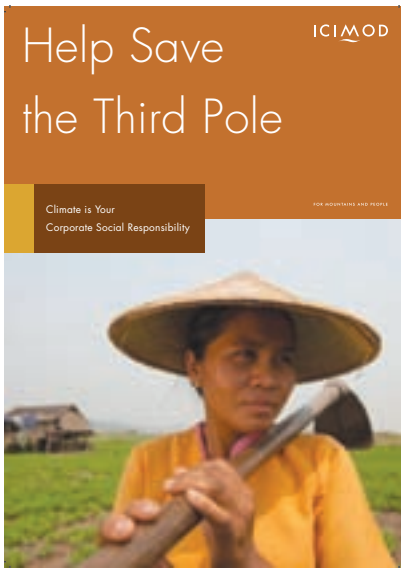
ICIMOD Foundation – now in action!

As the Centre passed its 25th birthday and continued to progress on its path to make change happen 'for mountains and people,' the sustainability of funding was discussed. The institution remains largely funded by partners, and it was felt that it was time to consider alternative funding models for the Centre's long-term goals. The ICIMOD Foundation was established in 2003 to address fundraising demands and diversify sources and efforts.

The Foundation is a non-profit organisation that supports the efforts of ICIMOD. The Foundation's vision is to make a significant contribution to the stability of the Hindu Kush-Himalayan region through ICIMOD. The support of the Foundation will give ICIMOD the latitude to implement its programmes using a consistent long-term approach. The Foundation is registered in Berne, Switzerland, and has a Board of Governors composed of selected members of the Board of Governors of ICIMOD and distinguished individuals working in the field of mountain development.

With climate change and adaptation as a global agenda, and ICIMOD's involvement in this area for a quarter of a century, the Foundation Board is keen for ICIMOD to take advantage of its position. The Foundation was re-launched in 2009 to help ICIMOD validate the present status and orientation of its agenda and to ensure optimum benefit from the framework of climate change as a unique proposition. A staff member was hired for fundraising in early 2010 to take on the responsibility of mobilising funds from non-traditional sources.

Everest, Solukhumbu, Nepal



The overall strategy of the Foundation is to institutionalise fundraising and target, among others, the corporate sector for funds through their 'corporate social responsibility' activities. Corporate social responsibility, or CSR, is an initiative that enables the corporate sector to engage in more meaningful, sustainable business. There are an increasing number of successful partnerships between organisations like ICIMOD and the corporate sector through CSR initiatives. While CSR initiatives enable corporations to build a stronger brand that resonates with key external stakeholders, institutions like ICIMOD can provide them with new opportunities to contribute their resources to significant programmes benefiting the environment and communities in general. One potential area for increasing the interest of the corporate sector is climate change, and the Foundation will explore this opportunity to build new win-win partnerships and synergies. It is also in ICIMOD's favour that a fundamental shift has taken place globally from the old brown economy of the 20th century towards a new low carbon, resource efficient green economy.

There are challenges ahead given the current global financial crisis and the immediate need for ICIMOD to make itself better known to the business and corporate world. ICIMOD is confident, however, that the driving force attracting the interest of the corporate world is its vision. Despite the inevitable challenges, ICIMOD is optimistic and as a successful fundraiser rightly said, "Donors don't give to institutions. They invest in ideas and the people in whom they believe." Thus, equipped with the desire to respond to the challenges of global change to enhance resilience and support adaptation of mountain communities, the ICIMOD Foundation is now in action.

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ICIMOD Inaugurated as a Knowledge Hub Partner in the Asia-Pacific Water Forum

Opportunities and challenges facing the Asia-Pacific region in terms of dealing with water problems in the years ahead were discussed during an expert meeting organised at the International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, on 6 June 2010. The meeting was convened to celebrate ICIMOD's membership in the Asia-Pacific regional network of water research centres in the Asia-Pacific Water Forum; the purpose of the Forum is to increase knowledge networking for water security in the 21st century. ICIMOD's entry to the network of highly-reputed water research centres was seen as an important milestone in closing the knowledge gap on mountain issues. It was stated that Asia has enough knowledge and solutions to solve the water problems it is facing but, to put this reservoir of solutions and knowledge to work, collaboration among the water hubs is essential to ensure effective use of limited water resources. The current 17 partner hubs in the APWF all have their own specific water issues and sharing solutions and undertaking joint research activities will contribute to improved water management throughout the region.

Useful links

Integrated Water and Hazard Management
www.icimod.org/?page=20

Conservation portal
www.icimod.org/hkhconservationportal/

Disaster preparedness platform
disasterpreparedness.icimod.org/

Geoportal, geoportal.icimod.org/#

Knowledge hub, www.apwf-knowledgehubs.net/index.php

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Lessons Learned from the International Expert Consultation Workshop on the Indus Basin

The Indus Basin, shared mainly by Afghanistan, China, India, and Pakistan is considered to be one of the most sensitive basins for climate change impacts. An international expert consultation workshop on 'Climate and environmental change impacts on the cryosphere of the Indus basin and its implications for the future water scenario' was held in Kathmandu, from 2-4 July 2010. The main objective was to share knowledge about state-of-the-art research and analysis and future work planned for the Indus river basin covering the fields of climate and environmental change and water resource management. The 71 participants included international and regional researchers and experts, representatives of countries sharing the basin, and representatives of several donor and international development agencies.

The deliberations emphasised that alteration in water supplies due to climate change and changes in the cryosphere could have profound impacts on water use downstream and could alter the livelihoods of a sizeable population relying on the water. The need to understand the impacts and prepare for adaptation was highlighted, however, lack of adequate data and failure to share existing and limited knowledge of critical natural processes were emphasised as major impediments. The discussions presented some key scientific questions related to the basin and suggested priority actions. The consultation workshop recommended a long-term Indus Basin Programme with strong coordination and cooperation between various projects and regional and international stakeholders.

Based on the deliberations of the workshop, ICIMOD will prepare a synthesis report and share it with the participants. An Advisory Committee will be formed with the involvement of international and regional experts and officials to oversee the whole process. Later, a concept note will be prepared to flesh out the programme. The workshop also recommended that a regular meeting of a similar kind be held, and to establish an Indus Basin Knowledge Hub. It was agreed that an efficient way of sharing progress and updates is to establish a web-based platform. ICIMOD was advised to do this.

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ICIMOD's Participation at the ADB and Partners Conference on Water: Crisis and Choices

ICIMOD was invited by the Asian Development Bank to a conference for ADB and Partners on 'Water: Crisis and Choices', held from 11-15 October 2010, at its headquarters in Manila. ICIMOD presented the lead-in paper on development of water storage capacity for discussion at a thematic session on 'Accessing Available Freshwater: Expanded Capture and Storage'. The thematic session on water storage was one of three sessions organised under the theme of management at river basin level. (The others were clean water, water in food, and cities and water.) ICIMOD was also invited to make a presentation at a side event on Pakistan Floods of ICIMOD's study on 'Glacial melt and downstream impacts on indus basin-dependent water resources and energy' and to participate in panels held on partnerships for integrated water resource management (IWRM), and adapting to climate change.

At the conference, more than 600 water professionals from 53 countries – from governments, think tanks, the private sector, and civil society – discussed issues and solutions to the water crisis that threatens the region's economic growth and environmental sustainability. At the closing, ADB called for more credible partnerships to consolidate the water sector's fragmented knowledge and for coordinated solutions.

The ADB and Partners' Conference was probably the second major water event at ADB following the one in 1996 that led to the development of its Water Policy. ADB's Draft Operational Framework for 2011-2020 was discussed at the conference. The framework – which is a result of extensive consultation with stakeholders – provides a design for ADB's future work in the water sector. A preview of the forthcoming Asian Water Development Outlook 2011 was also presented. The Outlook will, for the first time, provide a comprehensive quantitative and analytical perspective of the current state of water security in the region. It is targeted at ministers of finance and planning with recommendations about how to guide investments with better governance for increasing water security in the years to come. ICIMOD is one of the partners involved in preparation of the Outlook.

The ICIMOD delegation to the conference was led by the Director General, Andreas Schild; other members were Inayatullah Chaudhry, Arun Shrestha, and Ramesh Vaidya.

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Seabuckthorn Leh Initiative and National Mission on Seabuckthorn Launched

The 'Seabuckthorn Leh Initiative' was launched at a one-day high-level 'Workshop on the national mission on seabuckthorn' organised by the Defence Institute of High Altitude Research (DIHAR) in collaboration with the Ministry of Environment and Forests at Leh in the Jammu and Kashmir state of India on 14 July 2010.

The conference was attended by the Honourable Minister of State for Environment and Forests, Mr Jairam Ramesh, and the Honourable Minister of State for Defence, MM Pallam Raju, both of the Government of India, together with other senior government officials and senior researchers. It highlighted the importance of seabuckthorn, a plant species used for health care, improving livelihoods, and upgrading marginal mountain lands in the Hindu Kush-Himalayan region.

The Honourable Ministers emphasised the need for international collaboration among countries for seabuckthorn cultivation and processing, and also asked professionals to maintain synergy by consulting with each other and avoiding duplication of work to achieve the best results in the shortest period of time.

The Conference concluded with the declaration of a 'National Mission on Seabuckthorn' and formation of a 'Seabuckthorn Consortium' of scientists, managers, and organisations working in research and management. The Consortium was asked to prepare a long-term mission plan for up to 2020 and a short-term three year plan for increasing the resource base. A decision was taken for DIHAR to compile the research and action results in one place.

ICIMOD was represented by Dr Giridhar Kinhal, who presented the work carried out by ICIMOD during the 1990s and spoke about the importance of increasing the production potential both from the wild and through plantations in an organised and scientific manner. He emphasised the need to produce knowledge products on seabuckthorn based on the traditional and Ayurvedic knowledge available in India. ICIMOD has been included in the Consortium as a knowledge developing and sharing member. Its work during the 1990s was appreciated by conference participants.

Researchers and practitioners from India will visit China, Mongolia and Russia to study their strategies, and Germany and other EU countries to study the market potential and requirements. ICIMOD will have a role in organising and providing a platform for exposure visits and knowledge transfer and exchange.

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Seabuckthorn (*Hippophae L.*)

Seabuckthorn is a general term given to the shrub tree genus *Hippophae L.* of the family Elaeagnaceae, which consists of several species and sub species, the most important being *Hippophae rhamnoides*. The plant is distributed widely throughout Europe and Asia and grows naturally in high altitude and cold desert areas. It is a deciduous, usually spinescent shrub, with male and female flowers on different plants. Locally known as 'chaarma' in India, it grows at altitudes from 2,500-4300 masl. The fruit and leaves are very rich in anti-oxidants like vitamin C, E carotenoids, vitamins A and K and organic acids. The tree has multiple uses from treating coughs to cancer; cosmetics to ornamentation, food to forage, and sports to spaceships, it is also a soil binder and soil enricher and contributes to moisture conservation. Given its versatility, it can be described in one word, 'kalpavriksh' (a multi wish tree) or 'kalpanavriksh' (an imaginary tree species).

Although China, India, Nepal, and Pakistan are known to have many species of seabuckthorn, China has surpassed all other countries in terms of production of raw materials and different products. China has raised more than 300,000 ha of seabuckthorn plantations and markets more than 200 products.

International Expert Consultation Meeting: Mountain Initiative on Climate Change

Preparing a Roadmap for the Ministerial Conference of Mountain Countries and UNFCCC process

In response to the urgent need for mountainous countries and countries with mountain ecosystems to reinforce the mountain agenda in a period of global change, in particular through multilateral environmental negotiations in upcoming UNFCCC meetings and the Rio+20 conference, a meeting was convened to develop a common vision, strategy, knowledge base, and approaches. The 'International Expert Consultation Meeting on the Mountain Initiative on Climate Change' was organised jointly by the Ministry of Environment, Government of Nepal, and ICIMOD in Kathmandu on 23-24 September 2010.

The main purpose was to promote global and regional consultations among relevant climate change experts in order to chart a future road map for the Mountain Initiative (MI). The road map was envisaged with a long-term strategy which would reiterate the global mountain agenda in the UNFCCC and the Rio+20 processes and beyond. The Mountain Initiative was launched by the Government of Nepal in response to the call made by the Right Honourable Prime Minister of Nepal during the COP 15 summit asking all mountain countries and stakeholders to come together and form a common platform to improve advocacy on mountain issues in climate change negotiations and ensure that mountain concerns receive due attention in climate change agreements and related decisions.

The meeting was attended by high-level policy and decision makers, national experts involved in the UNFCCC process, and representatives from academia, international organisations, and development institutions. Experts came from Afghanistan, Bangladesh, Bhutan, Canada, China, Columbia, India, Italy, Kazakhstan, Lao PDR, Nepal, Pakistan, Peru, Tajikistan, and Switzerland. Experts from ICIMOD, the Mountain Partnership Secretariat (FAO), World Bank, UNEP, UNDP, DFID, ADB, DANIDA, FINNIDA, and others also participated, together with observers from academia, research centres, networks, and individuals.

The Hon Minister of Environment of the Government of Nepal, Mr Thakur Prasad Sharma, inaugurated the workshop. The Hon Dr Dinesh Devkota, Member of the National Planning Commission, participated in the opening and closing sessions. Dr. Andreas Schild, DG of ICIMOD; Dr RS Tolia, Uttarakhand, India; and Mr Klas Sanders, WB HQ, gave keynote speeches. Two analytical papers served as background documents: 'Mountains of the world – Ecosystem services in a time of global and climate change: Seizing opportunities – Meeting challenges', and 'Funding mechanisms, instruments, and facilities for mountain systems'; a synthesis paper on `Key issues for the Mountain Initiative' was also prepared.

The expert meeting expressed its wholehearted satisfaction and pledged support for the Mountain Initiative launched by the Government of Nepal. They also appreciated the excellent technical inputs and support provided by ICIMOD. The meeting was held in a consultative, open, and participatory manner with two working group exercises and plenary discussions. After two days of intensive discussion, and having listened to the latest information on the impacts of climate change on mountain areas, the experts gave recommendations for the proposed International Ministerial Meeting of Mountain Countries on Climate Change and suggested that their conclusions be shared with mountain country delegations participating in future UNFCCC negotiations and Rio+20 meetings.

The meeting established a Technical Working Group comprising of Dr. Dinesh Devkota (Nepal), Mr. Douglas McGuire (Mountain Partnership), Ms. Laura Madalengoitia Ugarte (Peru), Ms. Gulmira Sergazina (Kazakhstan), Ms. Lorena Santamaría Rojas (Columbia). Dr. R.S. Tolia, Mr. John Drexhage, and Mr. Gianluca Lentini (EvK2CNR) will be independent members and the Ministry of Environment, Nepal, and ICIMOD will be represented by Dr. Ganesh Raj Joshi, Secretary, and Dr. Madhav Karki respectively.

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International Symposium on Earth Observation

"We look forward to a future where Earth Observation information products and services are used extensively in decisions and actions for the benefit of mountain communities in the Hindu Kush-Himalayan region."

This was the key message from participants at the International Symposium on 'Benefiting from Earth Observation: Bridging the Data Gap for Adaptation to Climate Change in the Hindu Kush-Himalayan Region' organised by ICIMOD from 4-6 October in Kathmandu. The presence of national and international dignitaries brought focus to a series of events that took place from 1 to 7 October amidst a gathering of more than 250 high-level delegates and participants from 24 countries. The symposium was inaugurated by Mr Subash Chandra Nemwang, Chairman of the Constituent Assembly of Nepal, and chaired by Mr Thakur Prasad Sharma, Minister of Environment, Government of Nepal. Shri Jairam Ramesh, Minister of State for Environment and Forests, Government of India, was the guest of honour. Besides the inaugural and keynote sessions, 68 papers were presented on seven thematic areas and more than 60 posters were exhibited.

The keynote session was addressed by Mr Charles F. Bolden Jr., NASA Administrator, Mr Michael Yates, Senior deputy Assistant Administrator of USAID, and Professor José Achache, Director, Group on Earth Observation (GEO) Secretariat, Switzerland. The SERVIR-Himalaya initiative was formally launched during the session. SERVIR is an earth observation, monitoring, and visualisation system that integrates satellite and other geospatial data for improved scientific knowledge and decision-making. USAID, NASA, and ICIMOD worked together to establish SERVIR-Himalaya as the third regional SERVIR operational facility in order to promote applications of Earth Observation for societal benefits.

Three other special events were also organised. A Youth Forum 'Empowering Youth with Earth Observation Information for Climate Actions' was organised from 1 to 6 October, bringing together 40 young people from Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan, selected from over 750 applicants based on individual essays, fields of study, and social involvement. The forum exposed the participants to various aspects of earth observation information, geographic information systems (GIS), and remote-sensing tools to for analysing the impacts of climate change on land, water, air, and glaciers; and for identifying climate change issues in their respective communities. Then forty stakeholders from ICIMOD's member countries came together at a pre-symposium workshop on the theme of 'Space-based information for disaster preparedness and risk management', during which ICIMOD celebrated the installation of a new JAXA receiving station that will facilitate access to real-time satellite images in the case of major disasters in the region. Finally, an inception workshop who held for SERVIR-Himalaya at which fifty stakeholders from ICIMOD's member countries discussed priorities and needs where SERVIR Himalaya can contribute through dissemination of earth observation information and decision support applications. Overall, the events provided a regional platform for strengthening cooperation and networking as well as mutual sharing and learning among delegates from the region and beyond.

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Workshops, meetings and training events (May – December 2010)

Event	Date	Place
Training on Low Cost Soil and Water Conservation and Watershed Management Activities	2 – 13 May	Dailekh, Nepal
E-discussion on Biodiversity Management in the Hindu Kush-Himalayas: A Gender Perspective	3 – 21 May	Kathmandu, Nepal
Nursery Follow up and Training	9 May – 9 June	Tsongong County, Tibet
Convention on Biological Diversity – SBSTTA	May 10	Nairobi, Kenya
International Biological Diversity Day	15 – 22 May	Kathmandu, Nepal
Knowledge Sharing Workshop on Application of Satellite Rainfall Estimates in the HKH region – Phase II	19 – 21 May	Thimphu, Bhutan
National Workshop on Remote Sensing Methodology for Forest Carbon Measurement and Verification Workshop on Use of Geo-informatics for Mapping and Modelling Carbon Stocks in Nepal	24 May – 06 June	Kathmandu, Nepal
World Environment Day and Promoting Herbal Garden in Schools: Herbal Poster with Recipe competition	7 June	Kathmandu, Nepal
Regional training on open access to, and publishing of mountain biodiversity data from the Hindu Kush-Himalayan region in collaboration with GBIF/GMBA	14 – 18 June	Kathmandu, Nepal
E-Discussion on Improving Local Governance in the Hindu Kush-Himalayan Region: Challenges and Good Practices	14 June – 30 June	Kathmandu, Nepal
Participatory Curriculum Development Workshop on Beekeeping for Farmers' Level Training	20 – 22 June	Dhaka, Bangladesh
Inception Meeting on Establishment of a Regional Flood Information System in the HKH-Region (HKH-HYCOS)	23 – 25 June	Kathmandu, Nepal
The mid-term review workshop of the project 'Land use change and human health in eastern Himalayas – an adaptive ecosystem approach'	28 June – 1 July	Kathmandu, Nepal
International Expert Consultation/Workshop on 'Climate and environment change impact on the cryosphere of the Indus basin and its implications on future water scenarios'	2 – 4 July	Kathmandu, Nepal
Launch of ICIMOD as a Knowledge Hub member of the Asia-Pacific Water Forum (APWF) for Water Management in the Mountain Areas 2010	4 July	Kathmandu, Nepal
Asia Oceania Geosciences Society Conference	5 – 9 July	Hyderabad, India
Programme Advisory Committee (PAC) and Board Executive Committee (BEC) Meeting	4 – 8 July	Kathmandu, Nepal
IFAD TAG 773, Sharing and consultation meeting	3 August	Nepalgunj, Nepal
Writeshop on Documenting Local Adaptation Strategies to Climate Induced Water Stress and Hazards in the Greater Himalayas	9 –13 August	Kathmandu, Nepal
Feminization of Agriculture Sharing Workshop	10 – 11 August	Kathmandu, Nepal
Rock Glacier Monitoring – Technology Transfer between Eastern Alps and Eastern Himalayas	12 – 28 August	Graz, Austria
Development of Sustainable Energy for Rangelands in the Hindu Kush-Himalayas II (DESER II) Regional Training of Trainers (ToT)	13 – 21 August	Kathmandu, Nepal
National Policy Workshop	17-18 August	Kathmandu, Nepal
Dissemination workshop on Decision Support Toolbox for Environment and Natural Resource Management and SERVIR-Himalaya Needs Assessment	20 August	Thimphu, Bhutan
Koshi River Basin Preparatory Phase Dissemination Workshop	23 – 26 August	Sichuan, China
Participatory Curriculum Development Workshop cum Beekeeping Training for Farmers	23 August – 6 September	Bhur, Bhutan
Dissemination workshop on Decision Support Toolbox for Ecosystem Management and SERVIR-Himalaya Needs Assessment	25 August	Dhaka, Bangladesh
Workshop on ICIMOD's New Initiative on Rangelands' Programme	30 – 31 August	Kathmandu, Nepal
Payment for Environmental services (PES) in the HKH Region: Policy Options	30 August – 1 September	Kathmandu, Nepal
Second Regional Workshop on Kailash Sacred Landscape Conservation Initiative	4 – 6 September	Sichuan, China
World Water Week in Stockholm	5 – 11 September	Stockholm, Sweden
Certificate of Advanced Studies in Disaster Risk Reduction	6 – 17 September	Lausanne, Switzerland
The Tenth International Symposium on High Mountain Remote Sensing Cartography (HMRSC X)	8 – 18 September	Kathmandu, Nepal
Training workshop on Snow and Glacier Melt Runoff Modelling in the Indus Basin	18 – 23 September	Islamabad, Pakistan
Training workshop on stream flow measurement using fluorescent tracer	25 – 27 September	Islamabad, Pakistan

Event	Date	Place
Regional Workshop on Creating a Sustainable Network of Climate Change Champions	19 – 24 September	Kathmandu, Nepal
National Conservation Day and Promoting Herbal Garden in Schools: Herbal Profiles Competition	23 September	Kathmandu, Nepal
International Expert Consultation Meeting on Mountain Initiative and Climate Change	23 – 24 September	Kathmandu, Nepal
Kailash Sacred Landscape Conservation Initiative (KSLCI) Strengthening Project	23 – 24 September	Kathmandu, Nepal
Tourism and Climate Change Stakeholder Workshop	23 – 24 September	Kathmandu, Nepal
Participatory Curriculum Development Workshop on Beekeeping for Farmers' Level Training	28 – 30 September	Himachal Pradesh, India
Youth Forum on Empowering Youth with Earth Observation Information for Climate Actions	1 – 6 October	Kathmandu, Nepal
Space-Based Information for Disaster Preparedness and Risk Management workshop and Launch of Japanese satellite receiving station for disaster response	2 – 3 October	Kathmandu, Nepal
International Symposium – Benefiting from Earth Observation: Bridging the Data Gap for Adaptation to Climate Change in the Hindu Kush-Himalayan Region	4 – 6 October	Kathmandu, Nepal
Launch of SERVIR Himalaya in partnership with USAID, NASA and ICIMOD	5 October	Kathmandu, Nepal
Regional Workshop on Knowledge Sharing in Asia and the Pacific	6 – 7 October	Kathmandu, Nepal
SERVIR Himalaya Regional Inception Workshop	7 October	Kathmandu, Nepal
Tenth Meeting of the Conference of Parties (COP-10) to the Convention on Biological Diversity	18 – 29 October	Nagoya, Japan
Regional Workshop: Pastoralism and Rangeland Management on the Tibetan Plateau in the context of Climate and Global Change	21– 25 October	Lhasa, Tibet Autonomous Region
NEPCAT training on Documentation and Dissemination of Sustainable Land Management (SLM) technologies and approaches using WOCAT tools for NEPCAT Fact Sheet 2 Publications	25 – 29 October	Kathmandu, Nepal
Regional Training for Trainers: Workshop on Integrated Approach to Flashflood and Flood Risk Management	25 October – 2 November	Kathmandu, Nepal
The 2nd Third Pole Environment (TPE) Workshop	26 – 28 October	Kathmandu, Nepal
Workshop on Glacial Lakes Mapping, GLOF Risk Assessment and Mitigation Measures in the HKH Region	29 October	Kathmandu, Nepal
DESER II Regional Training of Trainers (TOT) Workshop	3 – 5 November	Kathmandu, Nepal
Regional Sharing Workshop on Community Perceptions on Climate Change	11 – 13 November	Shillong, India
International Graduate Conference	15 – 19 November	Kathmandu, Nepal
Experience Sharing on Making Value Chains Inclusive	19 November	Kathmandu, Nepal
41st Board of Governors' Meeting	21 – 25 November	Dehradun, India
Regional Study Course on Climate Change, Hydrological Drought and Flood	27 November – 4 December	Thimpu, Bhutan
UNFCCC COP 16	29 November – 10 December	Mexico
Regional Orientation-cum-Training Workshop on a Developing a Research Framework for Pro Poor Honey Value Chains	1 – 3 December	Kathmandu, Nepal
Knowledge Forum with Nobel Laureate Prof. Dr. Elinor Ostrom	6 December	Kathmandu, Nepal
Knowledge Sharing and Consultation Workshop on Improving Local Governance in the HKH	6 – 13 December	Chittagong and Dhaka, Bangladesh
Regional Steering Committee Meeting on Establishment of a Regional Flood Information System in the HKH Region (HKH-HYCOS)	7 – 9 December	Kathmandu, Nepal
SERVIR-Himalaya: Needs Assessment cum inception workshop for Pakistan	8 December	Islamabad, Pakistan
Writeshop to Develop Koshi River Basin Proposal	9 – 10 December	Kathmandu, Nepal
International Mountain Day and Promoting Herbal Gardens in School: Best Herbal Garden Competition	10 December	Kathmandu, Nepal
Training Course on "Basics of Geographic Information Systems (GIS) and Remote Sensing (RS)	13 – 24 December	Kathmandu, Nepal
Meeting with BNF/DEBTEC/Araanayak	14 – 15 December	Chittagong, Bangladesh
The Third Regional Workshop Kailash Sacred Landscape Conservation Initiative (KSLCI)	16 – 18 D ecember	Kathmandu, Nepal
Medicinal Plants Quality Standards: Developing Tools to Strengthen Market Linkages between Suppliers and Buyers	20 – 21 December	Kathmandu, Nepal

Hosted institution

SANDEE celebrated a decade of capacity building in research in and teaching of environmental economics

Some 150 leading economists from all over the world gathered in Godavari in Kathmandu on 6-7 December 2010, for a conference on 'Environment and Development in South Asia' organised by the South Asian Network for Development and Environmental Economics (SANDEE). Academicians and policy-makers from the South Asia region debated and discussed research findings with their counterparts from East Asia, Europe, Africa, and the Americas.

Dr Mahesh Banskota, Dean of the School of Arts, Kathmandu University, inaugurated the conference. Dr Banskota emphasised the need for a better understanding of climate changes and adaptation to them. The Inauguration was followed by a Founder's Address by the former Director and Professor Emeritus of the Beijer Institute of Ecological Economics, Karl Goran Maler. Professor Maler emphasised the need to value nature correctly in order to plan sustainably: he also discussed and provided examples of the many different complexities in the linkages between nature and human activities.

Noble Laureate Elinor Ostrom delivered a key note address on the 7th of December. In her address, Dr Ostrom discussed reforms in resource governance and underscored the importance of not looking for one single 'panacea'. While in some cases state management of resources may work, in others the private sector or communities may be more appropriate managers. She said that it is possible for communities to address the issue of conservation and livelihood support if they are given autonomy and ownership over resources.

SANDEE

ECONOMICS & THE ENVIRONMENT

Dr Ostrom, who was visiting Nepal at the invitation of the Government of Nepal, the Asia Foundation, and SANDEE, has been working in the area of resource governance for the last three decades and was awarded the Nobel Prize for her contribution to the field in 2009.

Other senior economists attending the meeting included Prof Yoginder Alagh, Chairperson of SANDEE and former minister of the Government of India. Senior officials from the ministries and planning commissions of South Asia also attended: Mr M Shamshul Alam and Dr Nasim Uddin from Bangladesh; Dr Kirit Parikh from India; and Mr Tsering, Mr Wangchuk Namgey, and Mr Sonam Wangdi from Bhutan.

This conference celebrated a decade of research and training spearheaded by SANDEE. The scholars and policy makers presented their work and discussed future research, policy, and training needs in the region. About 70 papers were presented on topics ranging across health, pollution, water management, poverty and common property resources, and climate change.

The Asia Foundation, ICIMOD, IDRC, NORAD, SIDA, UNDP, UNEP, and the World Bank co-sponsored the conference with SANDEE.

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Partnership development (April - December 2010)

ICIMOD is continuing to build on its strategic partnerships, bringing together institutions to address the emerging issues of the mountain region more effectively and to achieve the objective of improving the social and environmental well being of mountain people.

These agreements between ICIMOD and regional and non-regional institutions are expected to assist ICIMOD in achieving its strategic objectives and outcomes as well as enhancing the capacities of partners in regional member countries for research and knowledge generation.

Some of the institutions with which ICIMOD has entered into partnership in the last nine months are listed below.

Strengthening strategic collaboration in the region and beyond

To promote exchange on mountain-specific adaptations to climate change and other related topics, including framing enabling policies and programmes and capacity building, ICIMOD signed an MoU with the Ministry of Environment (MoE), Government of Nepal (GoN). Through this partnership arrangement, the institutions plan to work together to address the impacts of climate change on mountains and mountain people; which will include enhancement of participation and contributions to international discussions and negotiations. ICIMOD will provide technical support and backstopping to help GoN/MoE promote the Mountain Alliance Initiative (MAI).

A strategic partnership was established with the Norwegian Ministry of Foreign Affairs (MFA) for their support to the programme on 'Hindu Kush-Himalayan Cryosphere Studies and Capacity Building in Nepal 2010 to 2015'. The purpose of this technical collaboration is to help Nepal and other regional member countries acquire the capacity to adapt to climate change.

A strategic partnership was established with the International Bank for Reconstruction and Development, International Development Association, The World Bank under the South Asia Initiative (SAWI) Multi-Donor Trust Fund, Abu Dhabi Dialogue Small Grants' Programme. The aim is to provide small grants to encourage and support collaborative research among regional partners as well as to support regional platforms for discussion and exchange of research findings.

ICIMOD entered into a long-term strategic cooperation with the National Aeronautics and Space Administration (NASA), USA, to establish SERVIR-Himalaya, which will facilitate acquisition and use of products derived from satellite-based information systems and from digital knowledge for social advancement at community and policy levels in the region.

Adaptation to climate change

NORAD REDD: A contract was signed with the Norwegian Agency for Development Cooperation (NORAD) under which NORAD will provide financial assistance to the reduced emission from deforestation and degradation (REDD) programme. It will also help design and set up a pilot governance and payment system for stakeholders involved in the REDD+ project that builds on Nepal's community forestry programme. This will benefit local communities in particular and the nation in general. The partnership will facilitate technical activities and will institutionalise a carbon accounting system and operations of the Project Management Unit (PMU) as the REDD office. Letters of Agreement (LoAs) were signed with the Asian Network for Sustainable Agriculture and Bioresources (ANSAB)-Kathmandu, Nepal; and the Federation of Community Forest Users Nepal (FECOFUN).

ICIMOD signed LoAs with the following institutions to assess pilot communities' perceptions of climate change in order to operationalise participatory action research (PAR) oriented to climate-change adaptation (CCA) for high mountain agribusiness and livelihood improvement (HIMALI): Local Initiatives for Biodiversity, Research and Development (LI-BIRD), Pokhara, Nepal; and District Development Committee-Local Development Fund (DDC-LDF), Jumla, Nepal

ICIMOD signed LoAs with the following institutions to implement the second phase of the project 'Development of Sustainable Energy for Rangelands (DESER-II), which focuses on establishing and enabling support mechanisms to deal with availability and affordability issues in sustainable dissemination of tested technologies at project sites: Aga Khan Rural Support Programme (AKRSP)-Chitral, Pakistan; and Wildlife Institute of India (WII), India.

ICIMOD signed an LoA with Green Hill – CHT, Bangladesh, to implement the 'Regional project

on shifting cultivation (RPSC): Promoting innovative policy and development options for improving shifting cultivation in the Eastern Himalayas in Bandarban and Rangamati districts of the Chittagong Hill Tracts (CHT) of Bangladesh'.

Water and disaster risk reduction: snow and ice

ICIMOD signed an LoA with the World Meteorological Organization (WMO) to provide technical and scientific support to the establishment of a regional flood information system in the HKH region (HKH-HYCOS).

ICIMOD signed an MoU with the Cold and Arid Regions' Environmental and Engineering Research Institute (CAREERI), CAS, Lanzhou, China, to establish long-term cooperation on development of a regional database on the cryosphere (snow cover, permafrost, and glaciers), hydrology, and water resources. LoAs were signed with the following institutions in Pakistan to facilitate capacity building for improved monitoring of snow, ice, and water resources in the Indus basin: Pakistan Meteorological Department, Islamabad; and Water and Power Development Authority, Lahore,

Knowledge sharing and capacity building

Under a collaborative project with the British Council, ICIMOD is to organise a knowledge workshop for British Council's international climate champions.

ICIMOD has also renewed its partnership with the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in order to implement the 'Afghan Mapping Initiative for Geospatial Technologies, Capacity Building, and Training.'

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Outreach News and Activities (April - December 2010)

Participated in an exhibition organised by the British Council, 10 April, Kathmandu, Nepal
Participated in an exhibition organised by the Department of Plant Resources, Golden Jubilee celebrations, 11 April, Kathmandu, Nepal
International Day for Biological Diversity (IDB) 22 May, Kathmandu, Nepal

- Street Drama 'Water and Biodiversity' (www.icimod.org/index.php?page=1061)
- ICIMOD photo contest on 'Mountain Biodiversity' (www.icimod.org/index.php?page=854)
- IBD message on ' Celebrating the International Day for Biological Diversity (www.icimod.org/?page=1070)

World Environment Day (WED) 2010; WED message on 'Celebrating the World Environment Day' (www.icimod).org/?page=1127); Award Ceremony for 'Herbal Poster with Recipe' contest 7 June (www.icimod.org/?page=1144)
Information Booth , 23rd session of Asia Pacific Forestry Commission, 8-11 June, Bhutan
National Conservation Day and Award Ceremony for the 'Herbal Profiles' contest 23 September, Kathmandu, Nepal (www.icimod.org/?page=1464)
Poster show and information stall, International Symposium - Benefiting from Earth Observation: 4 - 6 October, Kathmandu, Nepal
Participated in exhibition, International Day for Natural Disaster Reduction (UNISDR Day), 12-13 October, Kathmandu, Nepal
Scientific round tables and Himalaya–*Changing Landscapes* photo exhibition at Planet Nepal, Festival of Arts and Environment (29 - 31 October) organised by Alliance Française, Kathmandu, Nepal (www.planetnepal.org.np/round-table-discussion/)
Knowledge Hub Booth, ADB Partners Conference 'Water Crisis and Choices', 11-15 October 2010
Convention on Biological Diversity, COP 10, 18 -29 October, Nagoya, Japan: Interactive Biodiversity Fair, 18-29 October; Communication, Education, and Public Awareness (CEPA) Fair, 23-26 October; CEPA side event: Celebrating International Year of Biodiversity 2010 in the Hindu Kush-Himalayan (HKH) Region, 27 October; Poster Session, 18-22 October (www.icimod.org/?page=1129)
Information Booth UNFCCC COP 16/CMP 6 at Cancun, Mexico 29 November-10 December
International Mountain Day (IMD) 2010; IMD message on Celebrating International Mountain Day (www.icimod.org/?page=1678); Award Ceremony for the 'Herbal Garden', 10 December, Kathmandu, Nepal (www.icimod.org/?page=1693)

ICIMOD Knowledge Forum Series www.icimod.org/?page=865

- Prof Jack D Ives on 'Lessons Unlearned and Problems of Scholarly Research within a Political Arena' – 17 March.
- IDRC President David Malone on 'The Changing Context and Content of Aid Policy, Other Emerging Issues, and Alternative Paradigms, 23 April
- Nobel Laureate Prof Elinor Ostrom, on Governing and Managing Forests and Other Common Property Resources in a Period of Climate Change' 6 December

Outreach activities

Promoting Herbal Gardens in Schools

The competition 'Promoting Herbal Gardens in Schools' was launched on World Environment Day, 5 June 2010. The aim was to familiarise school children with the usefulness of common and frequently used herbal plants and to conserve knowledge about them for future generations. The competition was organised jointly by ICIMOD and the National Trust for Nature Conservation (NTNC) in collaboration with the Private and Boarding Schools' Organisation in Nepal (PABSON).

Fifteen schools from the Kathmandu valley took part. The competition had three components (i) Herbal Poster with Recipe, (ii) Herbal Garden Profile, and (iii) Herbal Garden. The 'Herbal Poster with Recipe' contest was held at ICIMOD's Headquarters on 7 June 2010 to mark World Environment Day 2010 (www.icimod.org/?page=1144); the 'Herbal Profiles' contest was completed in September and awards were presented on National Conservation Day. (www.icimod.org/?page=1464). The final component, the Herbal Garden, in which schools were encouraged to set up herbal gardens within their school complexes. was evaluated during three monitoring visits the last held on 23- 25 November. Awards were presented on International Mountain Day 2010 (10 December) (www.icimod.org/?page=1693).

The 'Promoting Herbal Gardens in Schools' programme started as a pilot initiative and has been well received. A great deal of interest was generated among school children; the school managements fully supported the initiative and committed to carry it forward to government schools in 2011. The experience of three schools (Mount Glory English Boarding High School,

Results of the Competition: 'Promoting Herbal Gardens in Schools'

Herbal Poster with Recipe

Winners
- Rato Bangla School – First
- Ullens School – 1st Runner up
- Annal Jyoti Boarding School – 2nd Runner up

Special Mentions
- Loyalty Academy
- Vajra Academy

Herbal Profiles

Winners
- Namuna English School – First
- Annal Jyoti Boarding School – 1st Runner up
- Rato Bangala School – 2nd Runner up

Special Mentions
- Suryodaya Jyoti Secondary School
- Vajra Academy

Best Herbal Gardens

Winners
- Vajra Academy – First
- Suryodaya Jyoti School and Ullens School – 1st Runner Up
- Loyalty Academy and Annal Jyoti Boarding School – 2nd Runner Up

Special Mentions
- Rato Bangala
- Aims Academy

Vajra Academy, and Rato Bangala) can be read at www.icimod.org/index.php?page=1687.

To give continuity and sustainability to the initiative, the seven winning schools will replicate the concept with three public schools in 2011, at least one from outside the Kathmandu valley. The schools will be judged and awarded on their efforts in spreading the concept of herbal gardens and raising awareness about the importance of medicinal and herbal plants and their significance in our daily lives. The other eight participating schools will continue maintaining their gardens and again compete for 'Best Herbal Garden' in 2011 to coincide with World Environment Day 2011.

Posters displaying the initiatives of the schools in preparing their herbal gardens were highlighted at the 10th meeting of the Conference of Parties to the Convention of Biological Diversity (COP 10) in Nagoya, Japan, from 18 to 29 October 2010.

Read the full report at: www.icimod.org/index.php?page=1128

Nira Gurung ngurung@icimod.org

ICIMOD participates in World Water Week, 5-10 September 2010, Stockholm, Sweden

ICIMOD participated in World Water Week from 5-10 September 2010 in Stockholm, Sweden. The conference had more than 2,000 participants: decision makers and water experts as well top leaders and government ministers.

The rationale for ICIMOD's presence at World Water Week was strategic, and focused on continuing to build on ICIMOD's achievements during the previous two years to put ICIMOD on the map as a main actor in the field of climate, water, and adaptation, in the HKH region, primarily, and in the global arena in general.

ICIMOD organised a side event on 'Living with Too Much and Too Little Water in the Himalayan Region' together with the International Institute for Environment and Development (IIED) on 9 September with presenters Dipak Gyawali (ISET), Ramesh Vaidya (ICIMOD), Mats Eriksson (ICIMOD), and Tighe Geoghegan (IIED). The event was well visited and had a very good response, with particular appreciation of the fact that it brought 'real life' studies to the otherwise mainly general dialogues on adaptation during the week. An exhibition booth showcased ICIMOD's work on water, climate change, and adaption. ICIMOD staff also took the opportunity to have informal side meetings and network with different collaborators and potential partners.

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'Himalaya–*Changing Landscapes*' photo exhibition

ICIMOD's photo exhibition Himalaya – *Changing Landscapes* continued its journey to raise the awareness of the impact of climate change in the Himalayan region. The exhibition was organised by CulturesFrances, the Alliance Francaise in Kathmandu and the French Embassy in Nepal named Planet Nepal, Festival of Arts and Environment from 29-31 October 2010 in Patan Museum. The repeat photographs of mountain panoramas, glaciers, landscapes, people, culture and socioeconomic changes from the mid hills of the region. They have also organised round table discussions on wetlands, floods and disaster in the context of climate change, carbon trading, and Himalayan glaciers melting. The exhibition drew interest among the panel discussion participants, students, researchers, local people and tourists from different countries. It was also covered by the Kantipur TV following with other side events. There is a set of ready-made mobile exhibition boards with 20"X30". We have displayed and distributed several books and flyers to the visitors focussed on the climate change along with the photo exhibition.

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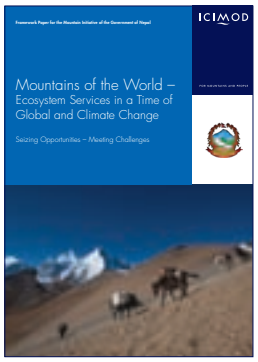
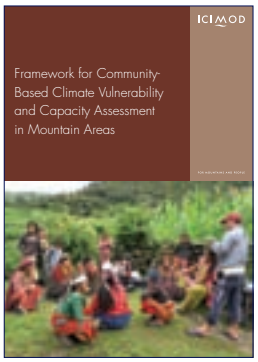
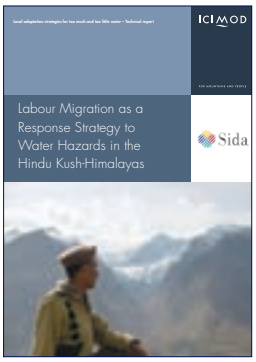
ICIMOD publications

The major documents published by ICIMOD between May - December 2010 are shown below. All publications can be downloaded free-of-charge from **www. icimod.org/publications**. Hard copy publications can be ordered from the Distribution Unit, distri@icimod.org. They can be provided free-of-charge to institutions actively involved in sustainable development of the greater Himalayan region.







Books and booklets

Printed

Framework for Community-Based Climate Vulnerabilty and Capacity Assessment in Mountain Areas* Macchi, M 27p ISBN 978 92 9115 182 0

Labour Migration as a Response Strategy to Water Hazards in the Hindu Kush-Himalayas* Banerjee, S; Gerlitz, JY; Hoermann, B 27p ISBN 978 92 9115 185 1

Mainstreaming Gender in Mountain Development: From Policy to Practice. Lessons Learned from a Gender Assessment of four Projects Implemented in the Hindu Kush-Himalayas* Leduc, B 16pp, ISBN 978 92 9115 179 0

Labour Migration and Remittances in Uttarakhand Jain, A 31p ISBN 978 92 9115 177 6

The Glaciers of the Hindu Kush-Himalayan Region: A summary of the science regarding glacier melt/retreat in the Himalayan, Hindu Kush, Karakoram, Pamir, and Tien Shan mountain ranges Armstrong, R 16p ISBN 978 92 9115 173 8

International Expert Consultation Meeting: Mountain Initiative on Climate Change GoN and ICIMOD 28p

Mountain Initiative Status Paper GoN and ICIMOD. 17p ISBN 978 92 9115 170 7

Mountain Biodiversity of the Hindu Kush-Himalayas: International Year of Biodiversity 2010 ICIMOD 63p ISBN 978 92 9115 168 4

Mountains of the World - Ecosystem Services in a Time of Global and Climate Change: Seizing Opportunities - Meeting Challenges ICIMOD 18p ISBN 978 92 9115 165 3

Integrated Value Chain Development as a Tool for Poverty Alleviation: An analytical and strategic framework Hoermann, B; Choudhury, D; Choudhary, D; Kollmair, M 41p ISBN 978 92 9115 145 5

Labour Migration for Development in the Western Hindu Kush-Himalayas: Understanding a livelihood strategy in the context of socioeconomic and environmental change Hoermann, B; Banerjee, S; Kollmair, M 26p ISBN 978 92 9115 139 4

Climate Change Vulnerability of Mountain Ecosystems in the Eastern Himalayas; Climate Change impact on vulnerability in the Eastern Himalayas – Synthesis report Tse-ring, K; Sharma, E; Chettri, N; Shrestha, A (eds) 103p ISBN 978 92 9115 141 7

Climate Change in the Eastern Himalayas: Observed Trends and Model Projections – Technical Report 1 Shrestha, AB; Devkota, LP 13p ISBN 978 92 9115 153 0

Biodiversity in the Eastern Himalayas: Status, Trends and Vulnerability to Climate Change – Technical Report 2 Chettri, N; Sharma, E; Shakya, B; Thapa, R; Bajracharya, B; Uddin, K; Oli, K P; Choudhury, D 23p ISBN 978 92 9115 147 9

Functions and Services of Wetlands in the Eastern Himalayas – Technical Report 3 Gopal, B; Shilpakar, R; Sharma, E 21p ISBN 978 92 9115 159 2

Modelling Climate Change Impact on the Hydrology of the Eastern Himalayas – Technical Report 4 Gosain, AK; Shrestha, A B; Rao, S 11p ISBN 978 92 9115 150 9

Electronic only (online, CD-ROM, DVD)

Global Climate Financing Mechanisms and Mountain Systems – Working paper prepared for the Mountain Initiative of the Government of Nepal Schwank, O; Bruederle, A; North, N 68p

Kailash Sacred Landscape Conservation Initiative: Target Area Delineation Report ICIMOD 10p

Kailash Sacred Landscape Conservation Initiative: First Regional Workshop ICIMOD 55p

Climate Change Impacts on Hazards in the Eastern Himalayas: Climate Change Impact and Vulnerability in the Eastern Himalayas – Technical Report 5 Pathak, D; Mool, PK 17p ISBN 978 92 9115 164 6

Potential Threats from Climate Change to Human Wellbeing in the Eastern Himalayan Region – Technical Report 6. Fang Jing; Leduc, Brigitte 17p ISBN 978 92 9115 156 1

Biodiversity conservation and management in the Hindu Kush-Himalayan region: Selected publications, films, and others from 1985 to 2010

General Publications

Newsletters

Gender Perspectives in Mountain Development: New challenges and innovative approaches, Sustainable Mountain Development, No. 57 Summer 2010

Asia-Pacific Mountain Courier – Special issue on Youth and Climate Change: Newsletter of the Asia Pacific Mountain Network, Volume 11, No. 2, November 2010

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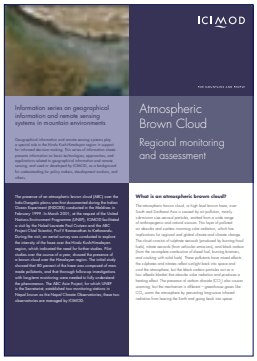
CNICIMOD Newsletter: Newsletter of the Chinese Committee on International Centre for Integrated Mountain Development, (published by CNICIMOD) Volume 4, No. 2, October 2010

Information sheets

Gender Mainstreaming in Biodiversity Conservation and Management in the Hindu Kush-Himalayan Region, IS 4/10

Rural Livelihoods and Adaptation to Climate Change in the Himalayas, IS 5/10

Biodiversity in the Hindu Kush-Himalayas: Frequently Asked Questions (FAQ 2)



GIS/RS Information sheets

Glacier Mapping and Monitoring Tools and Techniques

Atmospheric Brown Cloud Regional Monitoring and Assessment

Implementation the Malé Declaration on Air Pollution in South Asia

Remote Sensing of Snow Cover

Land Cover Mapping Case Studies in Three Protected Areas

Regional Geo-data Sharing Initiative in the Hindu Kush-Himalayan Region

Geospatial and Remote Sensing Resources

Decision Support Toolbox for Mountain Protected Area Management

SERVIR-Himalaya: From Space to Village, Bringing People and Their Environment into Harmony

Space-based Information for Disaster Preparedness and Risk Management

Mountain GeoPortal: A Regional Gateway for Geo-information and Earth Observation Resources

Project and other flyers

Satellite Rainfall Estimation and Rainfall-Runoff Modelling in the Hindu Kush-Himalayan Region

Strengthening Participation of Marginal Mountain Communities in High Value Product Value Chains : *Cinnamomum tamala* (Indian bay leaf) in Uttarakhand, India

ICIMOD: partner in the Asia-Pacific Water Forum

Eco-Tourism for Sustainable Development in the Kailash Sacred Landscape (electronic only)

* 2011, all others 2010

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Aryal, KP; Kerkhoff, E; Maskey, N; Sherchan, R (2010) *Shifting cultivation in the sacred Himalayan landscape: A case study in the Kangchenjunga Conservation Area*. Kathmandu: WWF Nepal.

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Chaudhary, S; Chettri, N (2010) 'The need for linking the CBD and UNFCCC to achieve post-2010 biodiversity target.' Square Brackets: CBD Newsletter for Civil Society (4): 8-9

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Giriraj, A; Babar, S; Jentsch, A; Sudhakar, S; Murthy, MSR (2010) 'Tracking fires in India using advanced along track scanning radiometer (A)ATSR data.' *Remote Sensing* 2(2): 591-610

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Leduc, B; Dhakal, TD (2010) 'Women's knowledge and practices on biodiversity management in the Himalayas: Contributions to climate change adaptation.' In *Biodiversity and climate change: Achieving the 2020 targets,* pp 19-21. Montreal: SCBD

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Rasul, G (2010) 'Policy root in environmental degradation: The case of Chittagong Hill Tracts of Bangladesh'. In McNeill, JR; Padua, JA; Rangarajan, M (eds) *Environmental history: As if nature existed,* pp 220-239. Oxford: Oxford University Press

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New appointments at ICIMOD

The list and profiles of ICIMOD staff are posted on the website at www.icimod.org/?q=44

Mr Kamal Aryal
Agriculture Specialist
ECES, January 2010

Mr Suman Jaiswal
Database and Web Content Manager, Kailash Sacred Landscape Conservation Initiative, ECES, January 2010

Ms Sunita Chaudhary
Research Associate
ECES, January 2010

Mr Hari Krishna Nibanupudi
Action Area Team Leader
Disaster Risk Reduction Specialist IWHM, June 2010

Mr Udayan Mishra
Knowledge Management and Web Associate
IKM, June 2010

Ms Dipshika Gurung (Thapa)
Communication Assistant
Administration
July 2010

Ms Neera Shrestha (Pradhan)
Hazard and Community Adaptation Specialist
IWHM, July 2010

Mr Abdul Azim Doosti
Country Representative
Afghanistan, ICIMOD Country Office, September 2010

Mr Shekhar Ghimire
Director of Administration and Finance
Administration and Finance
October 2010

Dr Ritu Verma
Division Head
Gender and Governance
SLPR, November 2010

Dr Eklabya Sharma
Director of Programme Operations, Directorate
December 2010

Dr Abdul Wahid Jasra
Team Leader
Rangeland Resources Management, ECES
January 2011

Ms Himaa Rai
Programme Assistant
HYCOS, IWHM
January 2011

Mr Vijay Khadgi
Assistant Project Coordinator, HYCOS
IWHM, January 2011

Ms Miriam Lindwer
Senior Human Resources Officer
Recruitment and Capacity Development, Administration
February 2011

ECES – Environment Change and Ecosystem Services
IWHM – Integrated Water and Hazard Management
IKM – Integrated Knowledge Management
SLPR – Sustainable Livelihoods and Poverty Reduction
HYCOS – Hydrological Cycle Observation System

Ukrul, Manipur, India

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Anmol Jain - pp 14, 15; Govinda Joshi - p29
Shiva Hari Khatri - p 47; Joyce Mendez - p25
Giridhar Kinhal - 38; Tika Rai - pp 22, 23
Larry Ramos - p 37; Ujol Sherchan - p 7
Asha Kaji Thaku - pp 1, 47
Alex Treadway - pp 6, 35, 52
Md. Ahsan Ullah - 27; Yan Zhaoli - pp 1, 8
NASA - p 19; Rural Litigation and Entitlement Kendra (RLEK) - p1

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