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ICIMOD's Regional Rangeland Program for the Hindu Kush–Himalayas

Together with its partners and regional member countries, the International Centre for Integrated Mountain Development (ICIMOD) shares a vision of prosperous and secure mountain communities living in peace, equity, and environmental sustainability. This vision defines ICIMOD's overall goal: secure and sustainable livelihoods for mountain peoples. ICIMOD's work as a "Mountain Learning and Knowledge Center" builds on achievements, competence, and lessons that the Centre and its partners have learned over the 2 preceding decades. ICIMOD is mandated to work in the Hindu Kush–Himalayan (HKH) region, including Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

A commitment to mountain peoples

ICIMOD's mission is to develop and provide integrated and innovative approaches, in cooperation with national, regional, and international partners, which foster action and change to overcome the economic, social, and physical vulnerability of mountain peoples. Solutions are created by identifying, testing, and disseminating options. This mission is translated into outcomes by analyzing the causes of poverty and vulnerability in the mountains, which differ in significant ways from what is found in the plains surrounding the HKH. These outcomes are also based on experience with mountain development to date, especially in the areas of greatest opportunity for achieving measurable impact. In overall congruence with relevant aspects of the World Summit on Sustainable Development and the Bishkek Global Mountain Summit Declaration, ICIMOD's strategy has identified 5 long-term outcomes that it is committed to help achieve. These are:

1. Productive and sustainable community-based management of vulnerable mountain natural resources;
2. Decreased physical vulnerability within watershed and regional river basins;
3. Improved and diversified incomes for vulnerable rural and marginalized mountain peoples;
4. Increased regional and local conservation of mountain biological and cultural heritage; and
5. A greater voice and greater influence, social security, and equity for mountain people.

Under ICIMOD's five-year strategic plan, programs are grouped according to 3 thematic areas: Natural Resource Management (NRM), Agriculture and Rural Income Diversification (ARID), Water, Hazards, and Environmental Management (WHEM); and 3 cross-cutting areas: Culture, Equity, Gender and Governance (CEGG), Policy and Partnership Development (PPD), and Information and Knowledge Management (IKM).

The NRM program focuses on institutional, technological, and policy innovations for community-based management to increase mountain productivity, food security, and biological sustainability, while the ARID program deals with specialized mountain agricultural and non-farm products with market linkages that enhance economic security. The WHEM program works to decrease physical vulnerability and increase the environmental security of mountain people and the downstream poor, whereas the CEGG promotes the equality and empowerment of vulnerable mountain peoples to enhance social security and reduce conflict. The PPD provides policy support and strengthens partnerships and ICIMOD's capacity for collaboration in planning, achieving, and monitoring program activities. The IKM focuses on making mountain information and knowledge accessible and usable to partners, policy-makers and advocates, and development practitioners. ICIMOD also hosts the Global Mountain Forum Secretariat and runs the Asia Pacific Mountain Forum regional node to network information sharing globally and in Asia.

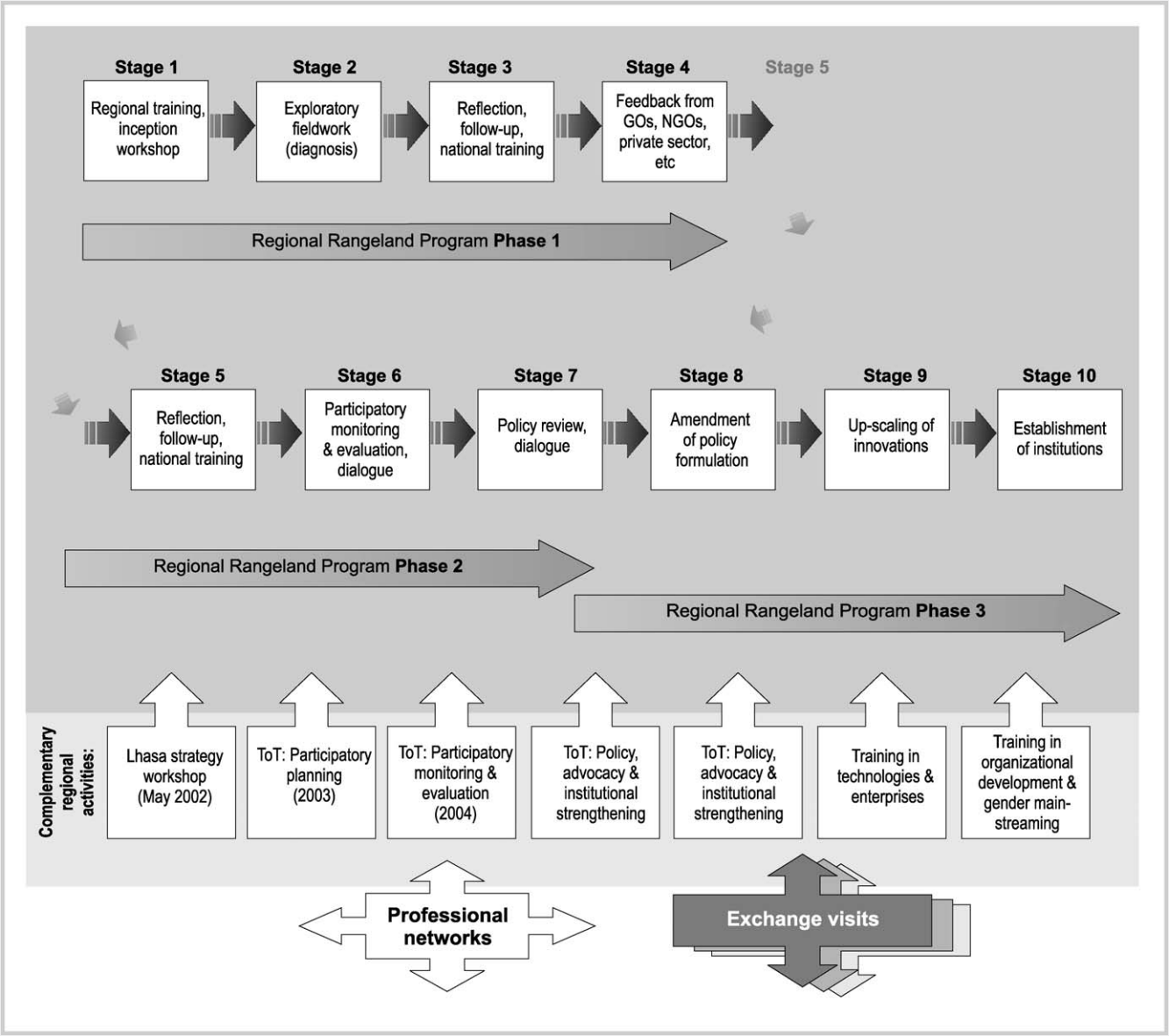
The Regional Rangeland Program (RRP) is a long-term initiative with a multi-dimensional approach that promotes technological, institutional and policy innovations in the management of natural resources to enhance the livelihoods of herder and pastoralist families in an environmentally sustainable manner. The RRP has evolved over the years, as shown in Figure 1.

Why the Regional Rangeland Program (RRP)?

Rangeland covers more than 60% (or about 2 million km^2) of the Hindu Kush–Himalayan (HKH) region, and consists of natural grassland, shrub/scrub land, open woodland that can be used for livestock grazing, tundra, marshland, and sparsely vegetated drylands. Rangelands in the HKH not only support many communities in the high mountains that earn their livelihood from pastoral production, but also capture and regulate water resources, nurture rich biodiversity with many species of fauna and flora endemic to the region, accommodate important ecosystem functions and services, provide a scientific research base, and retain clean air and open spaces for recreational purposes. Rangelands in the HKH also reflect a diverse geographical and cultural landscape, concurrently shaped by historical and present-day physical forces and human use. Despite the importance of rangeland in the HKH, however, it is, as in many other parts of the world, a generally neglected or under-recognized resource in terms of research, legislation, and government development plans for sus-

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FIGURE 1 Stages of the Participatory Action Research Strategy adopted in the Regional Rangeland Program (RRP) for the Hindu Kush–Himalaya.



tainable utilization. Under-recognition of rangeland resources results in poor management decisions, which are increasingly proving to be the key reason for overgrazing and degradation.

Mountain communities that are entirely or partially dependent on rangeland have been managing rangeland for thousands of years in the HKH. Through this age-old association they have accumulated abundant indigenous knowledge of their environment and adaptive production systems. Ironically, pastoralists are barely heard in rangeland management decisions. Instead, they are often blamed by contemporary policy-makers and some researchers for causing rangeland degradation.

Rangeland management in the HKH faces numerous problems, many of which are common across national boundaries and require regionally coordinated efforts to tackle them holistically. ICIMOD, as the regional center dedicated to sustainable mountain development of the HKH, therefore began to address common prominent rangeland management issues in the HKH from 1995, through the Regional Rangeland Program (RRP). The RRP focuses on supporting and promoting proper rangeland management and reducing poverty in the HKH high mountains. Project interventions are mainly concerned with advocating legally supported sustainable rangeland management practices and enhancing institutional capacity to improve rangeland management and the ability of communities to cope with their physical, social, and economic vulnerabilities.

The need for sustainable solutions to energy crises in the rangelands has been revealed more clearly in recent years, when partners from ICIMOD countries identified the lack of alternatives to energy from biomass and dung as one of the main

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causes of rangeland degradation. This led to formulation of a new energy project on Development of Sustainable Energy for Rangeland (DESER) to address the energy needs of people residing in the RRP project sites of Bhutan, China, India, and Nepal. It demonstrated how energy projects are critical to reinforcing the sustainability of the rangelands. The overall objective is to develop sustainable energy program solutions for people living in selected rangeland areas located at high altitudes above the timberline, taking account of access to and affordability of sustainable modern energy resources and piloting of feasible energy technologies and practices.

The RRP has had 4 major phases so far: RRP inception (1995–97), RRP I (1999–2002), RRP II (2003–06), and RRP III (2007–09). Both RRP and DESER are co-financed by the Federal Government of Austria and ICIMOD, and implemented by ICIMOD, together with its partners in Afghanistan, Bhutan, China, India, Nepal, and Pakistan. From its inception, the RRP has focused on situation assessment and has gradually moved towards supporting and promoting processes of continuous learning and collaborative decision-making among the whole range of stakeholders, from local herders to policy-makers. The RRP undertakes continuous self-direction through a participatory action research approach (see Figure 1).

Key concerns addressed by the RRP

Sustainable pastoralism

For millennia, pastoralists in the HKH have been utilizing and managing rangeland through migratory pastoral production and pursuit of livelihoods which are compatible with highly variable rangeland ecosystems. Traditional practices, nevertheless, do not seem favorable to contemporary development drivers, who do not have adequate understanding of environmental processes and dynamics. One of the major concerns of the RRP is therefore how to prove and promote the importance of pastoralism with regard to sustainability. The RRP tries, on the one hand, to empower pastoralists, broadening their knowledge base through community-based participatory action research, thus adding to their capability to defend themselves and to improve their ways of coping with physical, economic, and social vulnerabilities. On the other hand, the RRP also endeavors to ensure that the voices of pastoralists are heard and considered in decision-making.

Ecosystem restoration

As the population of both people and livestock has quadrupled throughout the HKH in the last 5 to 6 decades, rangeland has inevitably come under unprecedented pressure and deterioration. This situation has been made worse by interaction with climate change and more visitors pouring into rangeland areas, especially in fragile semi-arid and arid areas. The RRP is attempting to monitor rangeland ecosystem processes and dynamics and anthropogenic impacts, in order to restore and rehabilitate rangeland ecosystems for commodities and, more importantly, services. RRP initiatives in community-managed rangeland include monitoring plots, and selection of locally adaptable species for revegetation is underway in China (Sichuan), Nepal (Upper Mustang), and Pakistan (Balochistan).

Renewable energy

In cold and dry rangeland areas where plant growth is very slow, causing scarcity in biomass, and in the absence of alternative energy sources, people are uprooting shrubs and scrubs, and using livestock dung as fuel to meet their energy needs. Such practices are threatening the sustainability of natural systems, degrading environmental services, and having impacts on human wellbeing. Climate change is already impacting the rangelands, threatening ecological security and hitting the poor the hardest, with women and children facing the daily burden and drudgery of collecting fuelwood and water from a declining resource base. In the absence of alternatives, rangeland resources are increasingly being over-exploited to fulfill local energy needs for cooking and space heating. DESER is investigating and testing feasible renewable energy supply options to meet the energy needs of rangeland people in ways that fulfill the criteria of sustainability. The long-term objective is to design and support development of environmentally friendly, socially equitable, and economically sustainable energy resources and technologies in rangeland areas to enhance livelihoods as well as the environment. The short-term objective is to assess household energy needs and document good practices with sustainable energy sources and technologies, to implement a pilot demonstration energy system that is sustainable, accessible, and affordable for the rangeland community.

Co-management approach

Rangelands provide a wide range of products and services benefiting many parties in the context of complex traditional and concurrent landholdings, resource utilization, cultural richness, recreational beauty, and conservation goals. The entitlements, responsibilities, and benefits of each party are unfortunately often unclear, resulting in conflicts and the contradictory plight of over-exploitation versus under-management of rangeland. Based on years of participatory action research, ICIMOD, together with its partners, has realized the need to initiate a process of multi-stakeholder collaborative management of

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FIGURE 2 Promoting equitable co-management of rangeland resources through RRP initiatives. (Photo by Yan Zhaoli)

rangeland for multiple purposes, but focusing on a commonly agreed goal. The core of the co-management approach is negotiation and the essence is 'learning by doing.' Co-management of rangeland is taking place at all RRP pilot sites at various administrative levels. The RRP is also facilitating institutional arrangements in all its pilot project countries by applying a co-management approach, using both formal and informal mechanisms.

Addressing rangeland development

Capacity building

Capacity building focuses on partner institutions and on other key stakeholders to engage in a process of co-management of rangeland resources. Training packages are provided in one set of training of trainers (ToT) workshops on various rangeland technical and managerial topics, and another set of tailor-made training courses in pilot project countries. The ToTs equip the participants to train local extension staff and herders in basic participatory research techniques, whereas the local training courses directly support subsequent site-specific program implementation in adaptable ways (Figure 2). The RRP organizes an average of one regional ToT and two national training courses each year.

Knowledge generation

Knowledge generation promotes and supports institutional and technical innovations through local partnership for improved rangeland management in pilot areas, using a co-management approach. The entry points for innovation revolve around natural resource management and livestock productivity improvement, but also include technical and institutional strategies such as diversification of products, renewable energy options, marketing, and value addition. Technical and financial support are provided for promoting winter hay production, fencing of pastures for winter or rotational grazing, rangeland re-vegetation and combating desertification, construction of predator-proof corrals, and livestock improvement. Community-based participatory action research is applied to empower pastoralists to defend and improve their own livelihood, as well as to build capacity among decision-makers and researchers for better understanding of the human–environment integrated rangeland ecosystem. As the innovation process develops, indigenous indicators of success are identified and incorporated into a systematic and internal monitoring and evaluation program. This participatory monitoring and evaluation system also includes a series of reflection exercises designed to help organizations and pilot community groups to identify constraints and opportunities for improving service delivery to pastoral communities. This component is mostly fulfilled through pilot demonstrations and case studies in all 6 RRP project pilot countries.

Policy advocacy

Policy advocacy enables identification of policy context, issues, options, and dialogue processes and commitment to support co-management initiatives on a larger scale. Stakeholder networks and the knowledge generated from the action research and assessment process are shared at national and regional levels, using appropriate outreach mechanisms, and through stakeholder exchanges across national borders. Policy dialogue is conducted to feed the results of stakeholder research and reflections to various levels of government and private sector bodies. These forums are conducted at national and regional scales to address both country-specific and transboundary issues, culminating in appropriate strategy frameworks and agreements to support collaborative efforts. To date, the RRP has organized a regional rangeland policy conference and national rangeland consultation workshops in Bhutan, China, India, Nepal and Pakistan. As a result, the co-management approach is being incorporated in various rangeland management and development plans, such as the Ladakh (India) 2025 Vision document and the Upper Mustang (Nepal) Biodiversity Conservation Master Plan (2007–2012).

RRP strategy and activities are the result of participatory planning, jointly done by ICIMOD, partners from the project countries of Afghanistan, Bhutan, China, India, Nepal, and Pakistan, and donor representatives from the Austrian Coordination Bureau (ACB), Bhutan, and the Austrian Development Agency (ADA) in Vienna. The project is managed in a fully participatory way by generating active involvement and feelings of ownership among all the parties.

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