ICIMOD

FOR MOUNTAINS AND PEOPLE

ICIMOD's Investment Strategy for Engagement in the Sustainable Development Investment Portfolio (SDIP) Phase II: River Basin Programme

Supported by

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About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD) is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalayas (HKH) – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – based in Kathmandu, Nepal. Globalization and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream and downstream issues. ICIMOD supports regional transboundary programmes through partnerships with regional partner institutions, facilitates the exchange of experiences, and serves as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop economically and environmentally-sound mountain ecosystems to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now and in the future.

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The governments of Afghanistan, Australia, Austria, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Norway, Pakistan, Switzerland, and the United Kingdom.

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1. Overview

The International Centre for Integrated Mountain Development's (ICIMOD's) investment strategy for engaging in the Sustainable Development Investment Portfolio (SDIP) Phase II focuses on ICIMOD's River Basin Programme (RBP), which covers three major transboundary river basins in the Hindu Kush Himalayas (HKH), namely, the Indus, Ganga (Koshi) and Brahmaputra. ICIMOD's strategic approach focuses on the interface between science-policy-practice, upstream-downstream relationships, climate change impacts and adaptation, gender transformative change, and the food-water-energy nexus, as they relate to the sustainable development of mountain regions. Huge knowledge gaps and uncertainties, increasing disaster risks in transboundary river basins, and climate change all demand the generation of critical knowledge, an enabling environment, and regional cooperation in the HKH and its downstream river basins.

ICIMOD's RBP, which is in line with SDIP II, intends to address these issues by generating regional knowledge and feeding it into regional networks and forums, while promoting science diplomacy in policy processes. Over a four-year period (2016–2020) ICIMOD would like to see substantial knowledge generated and used by the countries sharing the three river basins, regional networks, and development partners, as well as better cooperation for improved river basin management to enhance the livelihoods of the people living in these transboundary river basins.

2. Background: The RBP and SDIP II

ICIMOD is a regional intergovernmental organization with a mission to promote sustainable and equitable mountain development for improved and equitable livelihoods through knowledge and regional cooperation. Serving the eight countries of the Hindu Kush Himalayas (Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan), ICIMOD aims to promote regional cooperation on issues common across mountain countries and to address issues where resources flow across boundaries. The Centre does this by generating and sharing knowledge and working to bring science into policy and practice. The ownership of ICIMOD is with its eight regional member countries and its plans, programmes, and budget are all accomplished with discussion and approval of the Board, the members of which are high-level government officials from the regional member countries. ICIMOD's close ties with national governments has allowed it to address policy concerns and work across countries in the region.

ICIMOD has engaged with the Australian Government since the beginning of the 'Sustainable Development Investment Strategy (SDIS): Promoting water, food and energy security in South Asia', as a partner implementing the Koshi Basin project under an AusAid agreement. These efforts culminated in the 'Sustainable Development Investment Portfolio' (SDIP) and ICIMOD received core funding to implement SDIP Phase I (2013–2016).

ICIMOD's 2012 strategy and the SDIP strategy were developed at around the same time. In both cases, partner consultations featured as a way of receiving input on national and regional priorities. ICIMOD held consultations with national governments and partners in all of the eight regional member countries it serves, as well as with strategic partners in the region and outside, to develop its long-term (10–15 year) strategy. The SDIP strategy was also developed for a 12-year period. The SDIP strategy for South Asia focuses on the Indus, Ganges, and Brahmaputra basins and matches well with ICIMOD's River Basin Programme, which is complemented by other regional programmes like the Cryosphere and Adaptation.

The SDIP II outcomes match well with ICIMOD's RBP outcomes. There is a strong alignment between ICIMOD's institutional strategy and the SDIP Phase II Investment Strategy on the three river basins, so much so that other initiatives, such as Himalayan Adaptation, Water and Resilience Research (HI-AWARE) and Cryosphere, also similarly contribute to the overall goals and objectives of SDIP II. ICIMOD's SDIP Phase II Investment Strategy is designed to achieve the goal, objectives, and outcomes of SDIP II in line with, and within, the criteria that has been outlined.

The RBP and SDIP also fit very well with the ambitions of the Sustainable Development Goals (SDGs), balancing as they do economic, social, and environmental dimensions. The focus of these programmes on poverty, gender equity, clean water, clean energy, and climate adaptation will help ICIMOD's eight regional member countries to meet their commitments in achieving the SDGs.

3. RBP vision and expected results

The Hindu Kush Himalayas are the source of the three river basins covered by SDIP. The mountains and their water, energy, and food resources are shared across these three river basins. ICIMOD's overall strategy is to improve regional cooperation in order to enhance the benefits accruing from these resources and reduce environmental costs. Knowledge is a critical input into this process, but is not sufficient on its own. Efforts will be made to bring this knowledge into policy and practice, both at the national level and across countries.

As one of six key regional programmes, ICIMOD's Regional Programme on River Basins aligns directly with the intent and motivations of SDIP Phases I and II. The earmarked core funding allows ICIMOD to deepen and extend the reach of this programme, while at the same time contributing to SDIPs overall vision and goal. Importantly, lessons learnt from engagement in SDIP during Phase I have been incorporated into the River Basin Programme – in particular, the focus on gender, partnerships, policy engagement, the interrelations between food, water, and energy, and the dire energy shortages faced by the people in the region. This section outlines the impact, outcomes, intermediary results and expected key outputs of the RBP, which also serve the aims of the SDIP II.

Impact

The desired impact of the RBP is: improved integrated river basin management, to reduce physical vulnerabilities and improve food and energy security for mountain and downstream communities (women and men) in the Hindu Kush Himalayan region while recognizing upstream interests.

Outcome

The desired outcome of the RBP is: actionable proposals for integrated water resource management practices and policies, including measures for risk management and for improved and equitable access, particularly for women and girls, to water for energy and food security, formulated, shared, and used by policy makers, the private sector and service agencies at the basin and community levels.

Intermediary results

The following intermediary results of the RBP also serve the aims of SDIP II:

Result 1: Evidenced-based knowledge including Himalayan Monitoring and Assessment Programme (HIMAP) assessment used by service agencies and policy makers for diplomacy, policy advocacy and regional cooperation

Result 2: Improved understanding of climate change, climate variability, and their impact on women, men, vulnerable groups, and the environment to support the development of adaptation related policy and practices

Result 3: Adaptive capacity of women and men built for risks related to both environmental and socio-economic changes

Expected key outputs

The following key outputs of the RBP also serve the aims of SDIP II:

Key Output 1**:** Regional science-policy-practitioner dialogues, evidence-based policy advocacy, improved communication, forums and networks strengthened for regional, national, and local cooperation

Key Output 2: Cutting-edge integrated knowledge produced and solutions developed and made available on climate change and its impacts on water, energy, and food for communities (women and men), practitioners, and governments at community, national, and regional levels, both upstream and downstream

Key Output 3: Gender sensitive and equitable innovations are promoted to enhance the adaptive capacities of communities to change on the ground benefiting the poor and vulnerable groups, particularly women and girls

4. The changing narrative

ICIMOD's RBP framework, which was written in 2012, continues to be valid; however, it has evolved over the years. Although much of the essence of the RBP impact, outcome, intermediary results, and expected key outputs remain, expressions and interpretations are changing. The RBP is evolving, especially due to the lessons learned from SDIP Phase I. For example, there is increased emphasis and integration of gender considerations, and the RBP has been modified in light of the design of SDIP Phase II, especially in relation to the new elements contained in Outcome 3.

During Phase I of SDIP, the RBP focused more on the Koshi basin, while Phase II is expanding comprehensively to the Indus and some initiatives will be started in the Brahmaputra. Expansion into the Indus is necessary because of the knowledge gap and limited systematic research being carried out on issues of water availability and use in the upper basin. There is a lack of understanding and scientific uncertainties surrounding the hydrological cycle and availability of water resources in the basin under climate change. In SDIP Phase I, the RBP created a network of institutions for scientific cooperation among some of the countries in the upper Indus basin. The interests of both provincial governments of the upper Indus basin and national institutions in Pakistan have been noteworthy. The momentum for collaboration was quite evident at the 'Indus Basin Knowledge Forum', a conference held at ICIMOD in 2016. In Brahmaputra basin RBP intends to extend the spring revival and hydropower benefit sharing related research.

In Phase II, knowledge of climate change and its impacts, both upstream and downstream, will be increasingly made available for policy advocacy and dialogue. On climate change related issues, the RBP will work with national institutions and strategic partners to generate cutting-edge knowledge on relevant topics and then extend the dialogue with environment departments and agencies dealing with national adaptation plans. The Upper Indus Basin Network and Koshi Forum will be used as vehicles for absorbing the knowledge generated in policy advocacy. ICIMOD will also use its focal ministries and Board members in each of the countries to integrate the results of this phase into national strategies, policies, and programmes.

ICIMOD's work in the RBP in Phase II of the SDIP will focus on three major areas, which are interconnected, as described in the theory of change (Annex 1). The first component is facilitating regional dialogues, forums, networks, and policy advocacy. This is the prime mandated work of ICIMOD, whereby scientists, practitioners, and policy makers come together in a regional setting to discuss and share learning related to the socioeconomic and environmental changes happening in the region. ICIMOD will further strengthen the mechanism for regional dialogue related to water, energy, and agriculture in the Indus and Ganges river basins. ICIMOD envisage that its regional member countries (specifically, Afghanistan, Bangladesh, China, India, Nepal, and Pakistan) will participate in this regional mechanism. It is envisaged that the Upper Indus Basin Network will be further strengthened and expanded to other Indus countries, such as Afghanistan, China, and India. The cooperation between China, India, and Nepal in the Koshi basin will be intensified through regional forums. Science and knowledge will be the key basis of such dialogues.

The second envisaged component is the generation of cutting-edge new knowledge at the basin level, both upstream and downstream, on climate change and its impacts on water, energy, and food in Indus and Koshi basins. This will improve understanding of climate change impacts and variability to support adaptation-related policies and practices. At the same time, service agencies and policy makers will be able to use this knowledge for decision making related to future investment strategies in the region for large infrastructure and benefit sharing.

The third component is related to the piloting, testing, evaluating, and promoting of innovations at the community level to strengthen their adaptive capacity in dealing with the risks related to the climatic and non-climate factors that are affecting community-level adaptation practices. In turn these will lead to more effective policies to support communities.

Ultimately, the component activities related to change processes will lead to the preparation of actionable proposals, which will be shared and used to facilitate equitable access, particularly to water, energy, and food, as well as by policy makers, the private sector, and service agencies at the basin and community levels. ICIMOD will use the knowledge products and actionable proposals as input for the government departments responsible for designing the various investment opportunities in each of the countries sharing the three river basins. ICIMOD and its network of experts shall seek opportunities to contribute to national strategies and planning process by influencing them through policy advocacy. At the community level, piloting, exchange, cross learning, and upscaling will be the approaches followed. For example, the community flood early warning system piloted in Assam by another ICIMOD initiative is now being replicated in other districts in Assam, the Koshi basin in Nepal, and the Indus basin in Pakistan.

5. RBP components for SDIP II

The key outputs of the RBP, which are aligned with the SDIP Phase II outcomes, are clustered around three major areas, namely, regional mechanisms, new knowledge, and enabling environment, which will be operationally driven at ICIMOD through the RBP and its three components, which are:

- Develop the basis and mechanisms for regional cooperation
- Create and use critical new knowledge
- Promote best practices, capacity development and innovations to contribute to the creation of an enabling environment

Component I

Develop the basis and mechanisms for regional cooperation (aligning directly with SDIP Outcome One)

Output 1: *Regional mechanism: Regional dialogues and cooperation, policy advocacy, improved communication, multi-stakeholder forums, exchange, science-policy interaction, and networks including HIMAP strengthened for cooperation (see Annex 2 for basin-wise links)*

1.1 Scientific knowledge used for diplomacy, policy and regional cooperation. Foreign policy and diplomacy are often seen through a realist lens, in which 'security dilemmas' tends to hinder cooperation. The risks posed by environmental stressors such as climate change are common to all of the countries sharing the three river basins and can only be tackled with joint efforts to understand, share, and come up with innovations to address these issues. Drawing on the experience gained in Phase I of the SDIP, the facilitation of science and technology in co-basin countries and the promotion of science diplomacy through conferences, panel discussions, and programmes will continue in the Koshi basin and will be initiated in the Indus basin. Engagement in Phase II shall include knowledge forums and panels at major events. The multi-stakeholder knowledge forum will be committed to improving the state of basin management by engaging private sector, political, knowledge, and other leaders of society to shape regional collaborative agendas. The activities will cover the Koshi and Indus basins and to some extent also the Brahmaputra basin. Science for diplomacy will strengthen ongoing efforts to take science initiatives to inform development discussions and create a better knowledge environment for the countries sharing the river basins to collaborate on water, food, and energy security.

1.2 Regional science network in upper Indus basin. The Indus basin lacks proper coordination and cooperation among scientists, at both national and regional levels. ICIMOD will support the Upper Indus Basin Network, which has the mission to "Promote coordination and collaboration among organizations working in the Upper Indus Basin for improved understanding of present and future water availability, demand, and hazards and to

develop solutions for various stakeholders from local to national levels". Under this programme, the network will be further strengthened to create a mechanism to coordinate scientific research in the four countries of the upper Indus basin, as well as platforms for dialogue between scientists. The Upper Indus Basin Network will actively bring scientific knowledge to policy makers, thus ensuring science-based policy development. A regional knowledge hub to act as a clearing-house mechanism for building, sharing, and disseminating water-related information and knowledge resources for research and management will be further developed in coordination with key national and international actors such as the International Water Management Institute (IWMI) and the South Asia Water Initiative (SAWI). Other SDIP partners (e.g., the Commonwealth Scientific and Industrial Research Organisation – CSIRO) have expressed interest in participating in the network. This will enhance scientific cooperation in the basin and streamline efforts to reduce the critical knowledge gap and avoid duplication among agencies, which was reaffirmed at the 2016 Indus Conference held at ICIMOD.

1.3 Himalayan Monitoring and Assessment Program (HIMAP): HIMAP aims to bring together scientists and policy makers from across the region to address a range of policy issues and to develop messages and solutions for policy makers. HIMAP intends to fill key knowledge gaps, enhance regional scientific collaboration, and be a tool for engaging in high-level policy discussion with governments in the region to bring forward the region's issues on a global scale. In 2007, the Intergovernmental Panel on Climate Change (IPCC) Assessment Report 4 (AR-4) announced that climate change will be the most prominent force of global change in the modern era and described the HKH region as 'a data gap' area, lacking consistent long-term monitoring. The report calls for national, regional, and global attention to fill this gap. Unfortunately, not much progress was reported in this regard in IPCC 2014 AR-5. While universities, NGOs, and science organizations made initial progress in assembling and consolidating existing data, the information is too fragmented and incomplete to derive any meaningful conclusions about the trends and scenarios in the region. ICIMOD, which initiated HIMAP to provide an evidence-based assessment, has brought together hundreds of scientists and policy experts for the first assessment, which will be published in 2017. This comprehensive assessment will greatly assist in addressing threats, acting on opportunities, and scaling up cutting-edge approaches, and is expected to be an important tool for engaging policy.

1.4 Establish and enhance gender resources and network. In the HKH region and the three SDIP basins there is a void of gender resource data and very limited gender networking. After the 'Bhutan+10: Gender and Sustainable Mountain Development in a Changing World' conference in 2012, ICIMOD established a Women, Gender, Environment, and Mountains (WGEM) network. This is extremely necessary in order to bring gender issues to the forefront of regional dialogues and policy advocacy. The RBP will promote the development of a regional and basin-wise database containing gender-water-food security related information, establish a dedicated website, and support the WGEM network. Gender resources will be established with the aim to strengthen the understanding of the gender roles in local water use in the Koshi basin. The result will be an increased understanding and awareness of gender differential vulnerabilities eventually leading to the reduced vulnerability of women and men in the basin to natural hazards. This will serve as a catalyst for cooperation to reduce conflicts, create opportunities to meet the challenges, balance conservation with development, and work towards natural hazards management to build resilient livelihoods.

Component II

Creation and use of critical new knowledge (aligning directly with SDIP Outcome Two)

Output 2: *New knowledge: Cutting-edge integrated knowledge is produced and solutions developed and made available on climate change and its impacts on water, energy, and food, for communities (women and men), practitioners, and governments at community, national, and regional levels, both upstream and downstream (see Annex 2 for basin-wise links)*

2.1 Understanding climate change and its implications for rivers, natural hazards, and hydropower and consequences for livelihoods, particularly for women and girls. High resolution climate scenarios generated at the basin, sub-basin, and catchment scales lead to better impact assessments. There is a high level of uncertainty in the climate scenarios for the Indus basin. National, regional, and global collaboration will be formed for long-term collaborative research. Specific case studies will be conducted to understand the monsoon and westerly dynamics

and extreme events. Efforts will be made to bring together various actors to coordinate effective monitoring systems in the basin. The outputs will result in better knowledge and the enhanced capacity of national and regional institutions to assess the impact of climate change and variability to implement appropriate adaptation options.

Downstream water uses in the Indus basin rely predominantly on upstream water generation. Good understanding of current and future water availability and demand is essential to drive the water resources management planning process in the basin. The focus will be on the agriculture system of the upper Indus basin, where irrigation relies on melt-water directly from the glaciers. However, the study will also cover the Indus Basin Irrigation System (IBIS) in the lower Indus basin from the perspective of the water-energy-food nexus. For this, strong sharing mechanisms will be maintained with CSIRO, in particular, as well as with other relevant stakeholders. The generation of improved understanding of current and future water availability and demand scenarios will support policy and decision making, leading to better development, planning, and governance mechanisms for water resources management.

Natural hazards are one of the key drivers of change in the HKH region. At the sub-basin and catchment scale natural hazards can seriously impact on the livelihoods of local communities, while at basin scale they can offset economic growth significantly. Climate change and unplanned socioeconomic development is likely to increase vulnerability to natural hazards in the HKH region. In the Koshi basin, ICIMOD will continue to upgrade the flood outlook system to improve reliability and lead-time. The Indus Regional Flood Information System (RFIS) and Indus Basin Flood Outlook will be piloted to enhance regional cooperation in flood management at the sub-basin and basin levels.

In the Indus basin, efforts will be made to better understand the natural hazards and the ways in which communities have been coping. There is a need to further understand the frequent floods originating from glacial sources. Gender dimensions of risk management will be a major emphasis of these studies. Glacial lake outburst floods (GLOFs) are a major concern to infrastructure development and livelihoods in the Koshi basin. In Phase I, ICIMOD assessed livelihood vulnerability to potential GLOFs from two glacial lakes and opened up an information-sharing process with potential users. In Phase II, efforts will begin to assess a number of other lakes, which will feed into the knowledge hub on GLOFs.

In the Indus basin, activities will be targeted towards supporting national institutions to enhance knowledge on the cryosphere and water-related hazards and their differential impacts on women and men and their capacity to plan and implement disaster risk reduction measures in a gender sensitive and gender responsive manner. Assessments of water-induced disaster risks (floods, droughts, GLOFs, landslides, river bank erosion) and their impacts on local livelihoods, particularly of underprivileged groups, women, and children, will be conducted. Institutional capacity will be built to enhance the adaptive capacity of underprivileged groups, women, and children against all kinds of water-induced disasters. A set of gender-sensitive adaptation options (anticipatory and reactive) will be proposed to reduce vulnerability to floods, droughts, and other water-induced disasters. In both the Koshi and Indus basins, ICIMOD together with its partner organizations, will continue to build the capacity of communities through CBFEWS. Special focus will be given to recognizing the capacity differential of woman and children.

There is a growing body of almost unanimous evidence that climate change will lead to changes to hydrological regimes and to more frequent extreme events. These will affect current and planned hydropower projects. However, in most countries, hydropower planning continues as usual; this needs to be changed. In Phase II, ICIMOD intends to better understand the impacts of changes in hydrological regimes on planned and future hydropower projects by using state-of-the-art modelling to understand the risks associated with the development of hydropower due to extreme weather events and by improving the current environmental assessment norms so that they incorporate climate change. Furthermore, the role of hydropower in, and possible impacts on, ecosystem services will be assessed. The outputs will contribute to the understanding the environmental sustainability of hydropower development. Collaboration with CSIRO on the ecosystem sustainability part is envisaged. The knowledge generated will be shared with the International Finance Corporation (IFC) and World Bank.

2.2 Solutions for food, energy, and ecological security in high-mountain agriculture given the impacts of climate change: Climate change and socioeconomic changes are bound to put pressure on the available water resources and related development sectors, including agriculture. The problem will manifest differently in the

upstream and downstream parts of the basin. Such impacts are already evident in the Koshi and Indus basins.

While the Koshi basin is on average a water surplus basin, water scarcity is a frequent phenomenon, particularly when it comes to agricultural droughts. In Phase I, ICIMOD collaborated with the Ministry of Agricultural Development, Nepal and the World Food Programme (WFP) to produce an agricultural advisory for Nepal. In Phase II, ICIMOD will extend the work to institutionalize a method for agricultural drought outlook in collaboration with the Ministry of Agricultural Development, the Food and Agriculture Organization of the United Nations (FAO), WFP, and the NASA-SERVIR programme.

In the middle hills of Nepal, securing water for drinking and local livelihood activities is a big challenge. However, water scarcity in mountain villages is more about economic scarcity than physical scarcity. Through a participatory process, ICIMOD will build the capacity of local governments and communities to ensure that local water use master plans consider gender and social equity.

In the Indus basin, in the upstream part of the basin, the institutional capacity of farming communities will be built on packages of gender sensitive and responsive innovative adaptation practices that enhance agricultural production, improve overall socioeconomic development, and reduce the workload of women. In the downstream part of the basin attempts will be made to link the decision-making process with knowledge of the upstream processes. As a result of these activities, farmers' awareness of the impact of climate change on mountain agriculture will be increased and they will have better access to water and climate-resilient farming options.

Water conservation and infrastructure are critical to the sustainability of water resources and many stakeholders, including businesses, seek to understand the added value of water projects to ecosystem services. Natural capital and ecosystem services assessment methodologies and tools offer a new opportunity to evaluate projects and help inform business and investment decisions. This will generate some key recommendations on how to achieve maximum ecosystem benefits from water infrastructure and, at a later stage, lead to payment for ecosystem services schemes being endorsed by local governments.

2.3 Improved understanding of groundwater sustainability and spring rejuvenation: narrowing the gap between science, policy, and practice: Groundwater is a key socially-important, common-pool vulnerable resource in the Koshi basin. In Phase II, we will examine groundwater from a local perspective. The aim is to develop groundwater assessment method for the mid-hill areas of the Koshi basin as a tool for better resource management. This will contribute to increased agricultural productivity and food security, while at the same time ensuring the sustainability of groundwater resources.

Springs are sources of water for mountain communities and their livelihoods. Across the HKH region, springs have been drying up. The restoration and recharging of springs is becoming a critical area of work at the local level. ICIMOD has initiated spring studies and is documenting best practices in other initiatives such as landscapes and strengthening mountain agriculture. In this phase, springshed restoration for the recharging and management of springs will be initiated in the Brahmaputra basin. Pilots are expected to bring about innovations in increasing water resources for mountain farmers, which will directly benefit women and children.

2.4 Knowledge base for developing solutions for gender and socially inclusive development: In HKH countries, women are the primary stakeholders in water and sanitation, and increasingly in the agriculture sector. They are the primary providers of water for domestic consumption. With globalisation and lack of livelihood opportunities, male migration has further increased women's overall responsibilities. Lack of access to water and sanitation directly affects women's health, education, employment, income, and empowerment. The gendered dynamics of water underscores the close inter-linkages between poverty, gender, and development. Action research will be conducted in selected areas based on SDIP I learning to pilot adaptation options on water management. In addition, a strong emphasis will be placed on compiling and analysing gender-differentiated data in Nepal that will used to inform policy makers and practitioners so as to benefit women, men, and disadvantaged groups. In addition, knowledge will be compiled on gender mainstreaming in various areas, such as access to water, hazards, early warning systems, and agriculture. A comprehensive knowledge base on gender mainstreaming will enable sound policy advocacy.

Component III

Promoting best practices, capacity development and innovations to contribute to creating an enabling environment (serving SDIP Outcome Three)

Output 3: *Enabling environment: Gender sensitive and equitable innovations are promoted to enhance the adaptive capacities of communities to change on the ground benefiting poor and vulnerable groups, particularly women and girls*

3.1 Socioeconomic outcome assessment of infra development in the Koshi basin. Socioeconomic analysis of water infrastructure development provides some important insights into the economic benefits and trade-offs. Considering that the viability of this option will depend very much on the assured availability (reliability) of clean energy (hydro-electric power), it is important to evaluate the economic benefits and potential consequences (synergy/trade off) of various water infrastructure development scenarios in the Koshi basin. The study should yield improved understanding of river basin management, which could lead to consensus building and influential third-party voices in support of reforms.

3.2 Benefit sharing from hydropower projects at the local level for mountain people. With international financial institutions (IFIs) such as the World Bank and the Asian Development Bank renewing their investments in hydropower, some of the old debates on the environmental impacts are being re-visited. It is important for the long-term sustainability of hydropower projects that mountain people derive fair and equitable benefits and, at the same time, that the hydropower developers have the right incentives to develop their projects. Towards this end, ICIMOD will compile best practices for benefit sharing in hydropower from the Indus, Ganges, and Brahmaputra basins through primary research and literature reviews and use this for policy engagement to improve governance. This research will also draw on best practices in benefit sharing from other sectors. Policy dialogues will be conducted with stakeholders and policy makers with the aim of influencing local benefit sharing policy mechanisms for mountain people. The knowledge generated will contribute to the better planning of benefit sharing in the development of hydropower in the future, which will in turn improve the sustainability of hydropower.

3.4 Enabling innovations in the water sector for sustainable livelihoods through improved water management. Conditions in mountains and hills are changing with climate change, as a result of which different livelihood opportunities are emerging. Hence, the programme will focus on innovations to enhance the adaptive capacity of local communities. Water and agriculture, and the related increase in agriculture production, will be the focus of the programme. The storage of fresh water for irrigation, solar pumps, innovations in water efficiencies for agricultural use, and ICTs for agriculture and weather information are areas of intended innovation.

3.5 Basin-wide gender-responsive knowledge systems that provide development solutions for empowering women and disadvantaged groups. Reliable scientific information and improved technical communication is crucial for well-informed decision-making in environmental contexts. Such information, provides decision-makers with a common factual foundation, which is important for the creation of high-quality policies and to maintain political trust. Exciting new possibilities are opening up for access to data and information for decision making. In the past, ICIMOD has hosted the Koshi Basin Information System and Indus Basin Knowledge Platform. In Phase II, ICIMOD will integrate existing web platforms into the River Basin Information System (RBIS) covering the Indus and Ganges basins. In the Ganges, the focus will be on the Koshi river basin. As reliable, up-to-date data becomes increasingly integral to regional policies, cross-border communication can pave the way for a healthier, more environmental-secure future.

Gender-disaggregated data, is needed to build a comprehensive understanding of the differentiated vulnerability of women and men and to make effective analytical assessments of the comparative situation of women and men in different communities or parts of the region. This type of information can support policy formulation targeted towards increasing the access of women and marginalized groups to resources. The programme will put considerable emphasis on building an extensive knowledge base for mainstreaming gender dimensions into interventions on water management practices, agriculture water productivity, and food and energy security. This will be done by strategically engaging with partners in co-riparian countries. A better understanding of gender-disaggregated vulnerability will help make interventions more targeted.

6. RBP delivery approach

In SDIP II, ICIMOD will use its inter-governmental regional mandate as an entry point to promote its programme of work in each country, using the support and good offices of its Board members and focal ministries. By engaging its Board members, ICIMOD intends to enter into national policy processes and influence policy using evidenced-based knowledge. ICIMOD seeks to intensify its regional cooperation mandate, specifically on the River Basin Programme, where critical knowledge and an enabling environment will be created on the ground and science, diplomacy, networking, and cooperation will be facilitated among partners from different countries sharing the transboundary river basins covered by the programme. Scientific cooperation among partners in the regional member countries in generating critical knowledge on the impacts of climate change and sustainable development will generate regional knowledge systems. Regional networks like the Upper Indus Basin Network and Koshi Forum will use the results of the HIMAP assessment, integrate water-food-energy nexus understandings, and use the various regional knowledge products generated by ICIMOD and partners for policy interventions and diplomacy. Increased cooperation on disaster risk reduction at the regional level using regional flood information systems and basin level flood outlooks will be promoted. Regional capacities on gender issues and river basin management will also be enhanced over the four-year period of the SDIP II to meet the challenges, specifically those related to the inter-linkages between climate change, disasters, and environmental security.

7. Meeting national and regional needs

ICIMOD's RBP is based on the outcome of national consultations undertaken in preparation of its five-year plan (2013–2017), which was developed out of country priorities on regional issues. River basin management has emerged as a top priority for most countries in the region. Therefore, ICIMOD's programme of work is a demand-driven approach combined with regional needs assessment, especially on the impacts of climate change on mountains and the implications for the downstream. Regional cooperation featured very strongly in ICIMOD's consultations, for which the results framework was then designed for six regional programmes including the RBP. In all of the regional member countries, and particularly country clusters sharing river basins (Indus: shared by Pakistan, India, China, Afghanistan; Koshi: part of the Ganges, shared by China, Nepal and India; Brahmaputra: shared by Bhutan, India and Bangladesh), and in other northern river basins, regional issues presented an opportunity to address climate change impacts on livelihoods and disasters. Poverty is a common key constraint on development in the region and, therefore, the water, food, and energy nexus is relevant for all regional member countries.

Gender is a strategic institutional function promoting commitment to gender-transformative change and ICIMOD is working to achieve this change through four pillars: action-oriented gender-integrative and gender-focused research, gender-positive organizational change, capacity strengthening and women's leadership, and gender-inclusive policies and partnerships. ICIMOD has a 'Gender Policy' and conducts external gender audits. The first gender audit was done in 2012 and, after four years, a second gender audit was completed in 2016. ICIMOD's SDIP Phase II Investment Strategy has a strong emphasis on gender in order to reach national, sub-national, and regional targets.

The diplomatic presence of Australia in South Asia is very important, both in national and regional diplomacy. Australia's support for evidence-based policy and regional cooperation furthers regional aspirations to meet the challenges of climate change and for economic cooperation for sustainable development in the mountains and downstream. Australia's participation in ICIMOD's programmes in the HKH region creates positive visibility for regional cooperation. The Phase I experience of such support from high commissions in Kathmandu and Delhi has been rewarding and we foresee more cooperation in Phase II, including the engagement of the Australian High Commission in Islamabad.

8. Partner government approvals

ICIMOD works as intergovernmental organization and is governed by a board. ICIMOD's Board is comprised of government members officially nominated by the eight regional member countries. Along with seven technical experts, these Board members are the highest decision makers. The Board approves the Centre's annual budget and programme plans and the Centre does not need any other approvals from government institutions in its regional member countries. All contributions, like those of SDIP, feature in ICIMOD's annual approved plan and budget, and also in its annual reports and the audit of the institution, which are formally approved by ICIMOD's Board.

For operational contracts with partners in our regional member countries, ICIMOD enters into 'memorandums of understanding' (MoUs) and 'letters of agreement' (LoAs) for strategic cooperation. The Centre does not see any challenge related to work in any of the three basins during Phase II of SDIP. The Centre already has partnership agreements with the Pakistan Water and Power Development Authority (WAPDA), Pakistan Meteorological Department (PMD), Karakoram International University (KIU), Pakistan Council of Research in Water Resources (PCRWR), and others in the Indus basin; the Department of Hydrology and Meteorology (DHM) Nepal, Water and Energy Commission (WECS) Nepal, Institute of Mountain Hazards and Environment (IMHE) in China, Bihar State Disaster Management Authority (BSDMA) in India and others in the Koshi Basin; and ARANAYAK, The Mountain Institute (TMI)-India and others in the Brahmaputra basin. These partnerships will be expanded in Phase II.

ICIMOD's Programme of Work in Phase II envisages a strategic partnership with CSIRO for the Koshi and Indus basins; with the Australian Centre for International Agricultural Research (ACIAR) in the agriculture sector, especially linking upstream and downstream, mostly in the Koshi basin and perhaps also in Brahmaputra basin; and with IFC on hydropower and environmental impact assessment guidelines and related policies. ICIMOD envisages that these strategic partners will obtain government approvals on their own.

9. Monitoring and evaluation

ICIMOD's new Strategic Framework calls for an increased emphasis on the evaluation of impact and learning phases of programmes and projects in order to deliver concrete results. The programme planning, monitoring, and evaluation cycle uses theory of change and impact pathway analysis as a regular practice. It also emphasizes the importance of influencing policy by tracking the use and upscaling of the scientific knowledge generated by ICIMOD at the regional level and beyond. At the same time, ICIMOD will build on its existing strengths and capacity to design and implement participatory, results-based M&E systems that can track progress towards outcomes and impacts involving diverse partners in the region.

ICIMOD has an internal review process whereby all initiatives and programmes are reviewed on a four-monthly basis for learning and accountability. The same will apply to SDIP Phase II. ICIMOD will use the theory of change (Annex1) as the basis for developing its M&E system. ICIMOD will continuously monitor change processes, which are critical for regional cooperation. ICIMOD will also make an effort to capture how various partners and stakeholders are using scientific knowledge. Partners' reports will be used to track results at the basin and sub-basin levels.

For innovation on the ground, ICIMOD will establish good baselines using rigorous methodologies wherever applicable, which will provide an excellent basis for impact evaluations and programme evaluations. ICIMOD will make sure that gender-disaggregated data is collected at all levels for better reporting and analysis.

10. Partner institutional strengthening

The SDIP funding will strengthen ICIMOD in achieving its strategy, vision, and mission, particularly in terms of science-policy-practice delivery in river basins. Critical knowledge generated will be used in policy and practice to meet the challenges faced by the regional member countries and mountain people sharing the three basins and their water resources. Importantly, gender-disaggregated information and syntheses will facilitate better understanding for development in the region. The programme support will also enhance ICIMOD's capacity in diplomacy on regional issues of water and water-induced disasters in the region. The support will sharpen ICIMOD's results framework approach and build on ICIMOD's strategy in linking upstream and downstream. ICIMOD will also benefit from other SDIP partnerships through sharing and expanding the knowledge base for the South Asia region.

11. Diplomacy and Australia's national interests

By virtue of being an intergovernmental organization, ICIMOD primarily works with national governments on strategic and large issues in the regional context and of regional interest – issues such as climate change, drivers like migration, land use cover, and, recently, developing economic linkages in the region. South Asia is an important region for diplomacy for the regional member countries and also for international interests, like those of Australia, in many areas, including poverty and populations, water and natural resources, water-induced disasters (humanitarian), conflict resolution, equitable development for all countries (both poor and developing[1]), and water, food, and energy security, just to name a few. Addressing gender issues and the empowerment of women in decision-making is another critical issue for the region. ICIMOD will soon be formalizing its relationship with the South Asian Association for Regional Cooperation (SAARC) through the signing of an MoU. Australia is an observer in the SAARC forum. ICIMOD's work on hydropower sustainability in the Ganga and Brahmaputra basins can feed into implementation of the Bangladesh-Bhutan-India-Nepal SAARC 2015 energy agreement.

SDIP is facilitating a progressive partnership by fostering unique regional cooperation among institutions in Australia and the South Asian region, addressing regional issues covering the broad dimensions of the water-food-energy nexus in important river basins. The programme also demonstrates strong links between knowledge, policy, and practice on the ground. SDIP is possibly the best strategy any government from outside could imagine for the region and, therefore, is an excellent instrument for the Australian Government to meet the aspirations of the region. ICIMOD sees SDIP as the most appropriate, timely, and inclusive investment strategy for this region and finds significant overlap between SDIP's and ICIMOD's strategies, making DFAT and ICIMOD natural partners for the region.

12. Sustainability

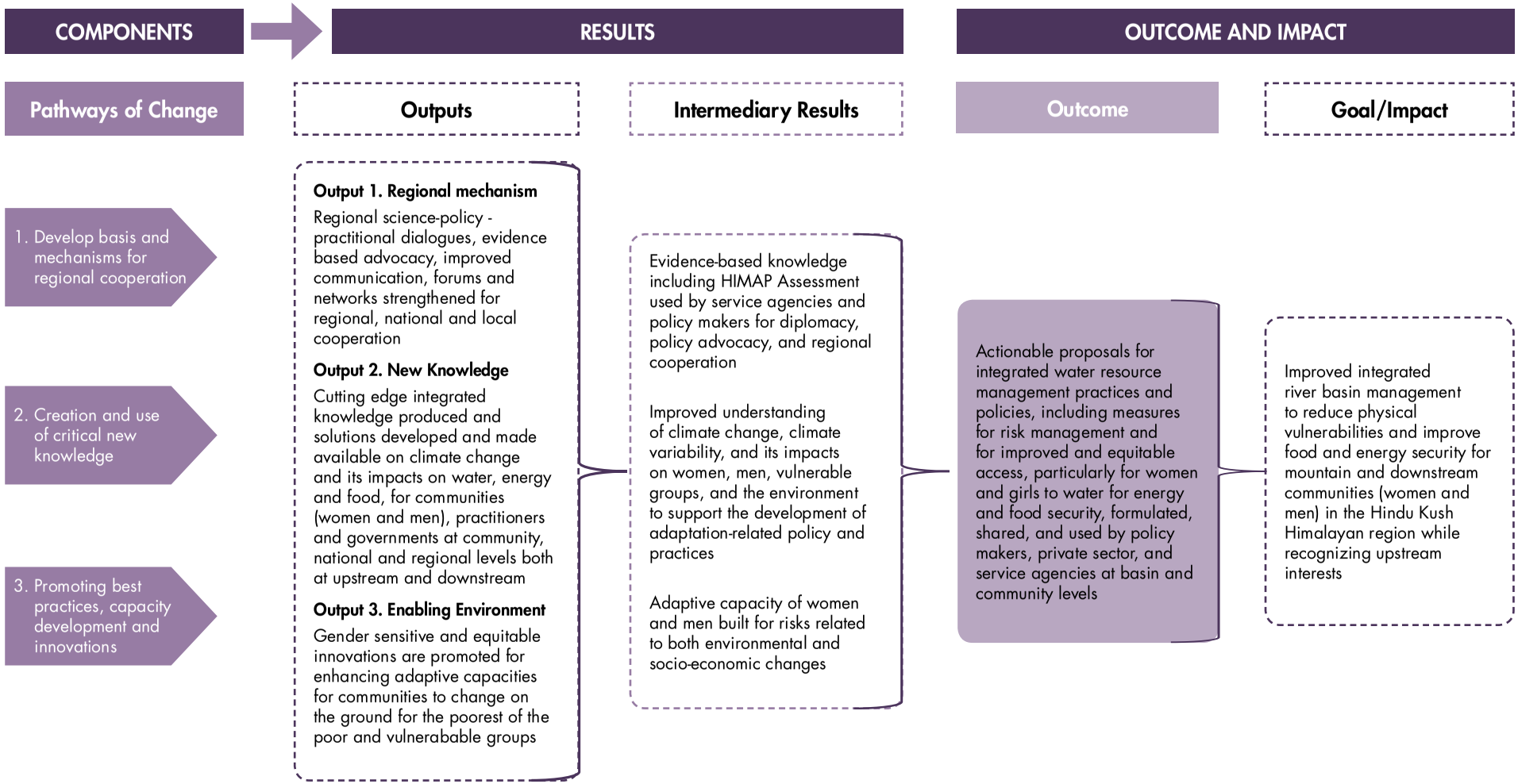
The programme of work designed in ICIMOD's SDIP Phase II Investment Strategy supports ICIMOD's River Basin Programme, which is institutionally embedded in the long-term strategy and medium-term plan of the Centre. If Australian support was to conclude at the end of SDIP Phase II, the RBP would continue (seeking other sources of funding). ICIMOD works with national institutions and governments, therefore, it will endeavour to mainstream the concepts and results of SDIP and the RBP in national strategies and plans to give continuity. ICIMOD will consciously try to include SDIP/RBP results in the design of new investment projects coming to the regional member countries through ICIMOD's focal ministries and Board members, and working closely with strategic partners.

[1] Out of ICIMOD's eight regional member countries five are least developed countries (LDCs).

13. Risks

The geopolitical situation in the region is very sensitive and may change at any time. This can affect the achievement of expected outcomes. However, ICIMOD works very closely with all partners, including technical institutions in the region, which helps to keep the momentum for scientific exchange. Another major risk foreseen is limited sharing of crucial data at the regional level, which may affect the pace of scientific knowledge generation. To overcome this challenge, ICIMOD is working in partnership with academic and research institutions to co-produce scientific outputs and share results. Furthermore, the Hindu Kush Himalayan region is prone to natural disasters, including floods, landslides and earthquakes, which can also potentially hamper the progress of the programme.

Annex 1. Theory of Change: SDIP PHASE II ICIMOD Investment Strategy



Critical Assumptions

1. National and regional geopolitical stability is critical for regional cooperation
2. Partners are willing to use and share information and data across the region for different uses
3. Participating countries recognize the importance of the water-energy-food nexus as a solution for sustainable development in their countries

Annex 2. Summary of ICIMOD's Four-Year SDIP Investment Strategy

Dimensions	The following three SDIP Outcomes serve the objectives and goal of SDIP Phase II:		
	1. Strengthened mechanisms for regional cooperation	**2. Critical new knowledge generated and shared**	**3. Improved regional enabling environment including for private sector engagement**
Indus river basin	**a. Intended sets of activities** • Use scientific knowledge for diplomacy, policy, and regional cooperation • Support the Upper Indus Basin Network for regional and sub-regional scientific cooperation • Conduct HIMAP scientific assessment focusing on policy outcomes (all basins) • Establish and enhance gender resources and network **b. Key points of engagement** (many points also valid for Koshi and Brahmaputra basins) • Strengthen and expand Upper Indus Basin Network and Basin Knowledge Forum • Use ICIMOD's focal ministries and Board members • Strengthen engagement with Australian high commissions • Facilitate dialogues related to water, energy, and agriculture in the Indus • Participate in knowledge forums and panels at major events, create a virtual library, and develop innovative research platforms • Develop a multi-stakeholder knowledge forum by engaging with private sector, political, knowledge, and other leaders of society to shape regional collaborative agendas • Work with the International Water Management Institute (IWMI), South Asia Water Initiative (SAWI), and CSIRO to enhance scientific cooperation **c. The regional orientation** (also valid for Koshi and Brahmaputra basins) • ICIMOD will use its intergovernmental regional mandate to foster regional cooperation at various levels. Being a regional organization, ICIMOD provides various regional technical and strategic platforms for policy makers and scientists to come together, share ideas and find opportunities to work together in regional collaborative programmes that foster regional cooperation. • Strengthening mechanisms for regional cooperation will strengthen ongoing efforts to take science initiatives to inform development discussions and create a better knowledge environment for the river basin countries to collaborate on water, food, and energy security.	**a. Intended sets of activities** • Conduct research on the impacts of climate change and variability in mountains to support better impact assessment • Conduct research on current and future water availability and demand and its implications for water, energy, and food security • Develop the Indus Regional Flood Information System (RFIS) and Indus Flood Outlook (IFO) and link to district level • Develop community-based flood early warning systems (CBFEWS) and link with RFIS and IFO • Assess off-grid renewable energy solutions for the water, food, and energy security of underprivileged groups, women, and children • Evaluate climate change impacts on the hydrological risks and opportunities in hydropower projects • Develop a knowledge base for developing solutions for gender and inclusive development **b. Key points of engagement** • Coordinate effective monitoring systems in the basin • Study the agriculture system of the upper Indus basin, where the irrigation relies on melt-water directly from the glaciers • Study the Indus Basin Irrigation System (IBIS) in the lower Indus basin from the perspective of the water-energy-food nexus; for this strong sharing and engagement is needed with CSIRO • Engage with the World Meteorological Organization (WMO) on RFIS • ICIMOD, together with its partner organizations, will continue to build the capacity of communities and local organizations. • ICIMOD will engage with national agencies such as PMD, WAPDA, the Ministry of Environment and Water (MEW), Chinese Academy of Sciences (CAS), National Institute of Hydrology (NIH), etc. **c. The regional orientation** • Work with networks of science partners in Pakistan, China, India, and Afghanistan to conduct multidisciplinary research and share knowledge at the regional level, thereby reducing critical knowledge gaps and avoiding duplication among agencies, which also helps to understand the situation at the transboundary level using common approaches and methodologies	**a. Intended sets of activities** • Develop mechanisms and capacity building for benefit sharing from hydropower projects at the local level for mountain people • Develop innovations in water and agriculture, irrigation, water efficiencies, and ICTs for agriculture and weather information • Implement basin-wide gender responsive knowledge systems that provide development solutions for empowering women and disadvantaged groups **b. Key points of engagement** • Citizen observatories will provide fundamental information • Focus on low-carbon climate-resilient economic development • Promote benefit sharing from hydropower projects • Establish basin-wide gender-responsive knowledge systems • Engage with the Pakistan Disaster Management Authority (PDMA), PCRWR, FOCUS Humanitarian, and Aga Khan Rural Support Programme (AKRSP) **c. The regional orientation** • In order to show good practices and set examples, ICIMOD will work with local and national partners to pilot and demonstrate development solutions, which will help in building credibility and creating enabling environments for national policy makers to be convinced of the effectiveness of regional approaches.

Ganges river basin (Koshi)	• Use scientific knowledge for diplomacy, policy, and regional cooperation • Develop regional capacity: Co-riparian countries will be capacitated to evaluate the economic benefits and trade-offs of regionally coordinated development of water infrastructure. • Develop GLOF knowledge hub Build the regional capacity of co-riparian countries to evaluate economic benefits and trade-offs • Conduct a study on hydropower benefit sharing mechanisms	• Strengthen the Koshi Flood Outlook and link it to local level DRR systems • Link CBFEWS with RFIS • Take a mountain hazard outlook and focus on resilient livelihoods • Evaluate climate change impacts on the hydrological risks and opportunities of hydropower projects • Focus on climate change impacts on high mountain agricultural land use, drought, and adaptation • Address water scarcity through planning and action at the local level • Account for the ecosystem services provided by water infrastructure • Study groundwater and spring sustainability and the groundwater-energy nexus	• Recognize communities as stewards of freshwater ecosystem management • Socioeconomic outcome assessment of infra development Promote benefit sharing from hydropower projects at the local level for mountain people • Enable innovations in the water sector, improve water management, and livelihoods • Develop basin-wide gender responsive knowledge systems that provide development solutions for empowering women and disadvantaged groups
Brahmaputra river basin	• Use scientific knowledge for diplomacy, policy, and regional cooperation • Testing of methodologies form revival of springs in mid-hills	• Explore off-grid renewable energy solutions for the water, food, and energy security of underprivileged groups, women and children – conduct rigorous impact evaluations of some piloted technologies • Key points of engagement • Secure energy access where grids have not reached The regional orientation • Learning shall be useful at the regional scale	• Develop mechanisms and capacity building for benefit sharing from hydropower projects at the local level for mountain people Key points of engagement • Possible engagement with IFC and private sector The regional orientation • Learning shall be useful at the regional scale
Integrating gender	The core approach for integrating gender in Phase II activities will be: Social and gender disparity issues related to access to and control over water resources management will be addressed through critical review of all the planned activities with gender perspective and will be reflected in implementation. Gender will be integrated in all the three core activities. Specifically, capacity building through networking, resource generation and trainings (considering the diversity in the learning capacity of different sections of society) and by ensuring the active effective participation of woman and disadvantaged groups in planned activities such as local water use planning formulation and implementation piloted by ICIMOD will be achieved. On a larger and higher level, advocacy and awareness raising campaigns will be undertaken to reform public policy formulation and initiate and institutionalize gender equity and social inclusion (GESI)-responsive budgeting in water sector planning.		
Integrating the nexus	The core approach for integrating the water-energy-food nexus in Phase II activities will be to: • Generate knowledge that enhances understanding about the nexus perspective, inter-linkages and interdependencies among the three sectors (water-energy-food), trade-offs, and synergies among them • Develop approaches, mechanisms, and instruments for strengthening integration among the three sectors at local, national, and basin levels • Support key partners and strengthen their capacities to mainstream the nexus approach in decision-making and development-planning processes		

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