

Regional training on springshed management for socioecological resilience in the Hindu Kush Himalaya



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 Himalaya (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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Proceedings

Regional training on springshed management for socioecological resilience in the Hindu Kush Himalaya

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in collaboration with the Advanced Center for Water Resources Development and
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Acknowledgements

A regional training programme on springshed management for socioecological resilience in the Hindu Kush Himalaya was organized by the International Centre for Integrated Mountain Development (ICIMOD) in collaboration with the Advanced Center for Water Resources Development and Management (ACWADAM), India, and Hydrosolutions, Switzerland, with financial support from the Swiss Agency for Development and Cooperation (SDC) through its Indian Himalayas Climate Adaptation Programme (IHCAP) under the Global Programme Climate Change and Environment (GPCCE).



Abbreviations and acronyms

ACWADAM	Advanced Center for Water Resources Development and Management
FGD	Focus group discussion
GPCCE	Global Programme Climate Change and Environment
HKH	Hindu Kush Himalaya
HUC	Himalayan University Consortium
ICIMOD	International Centre for Integrated Mountain Development
IHCAP	Indian Himalayas Climate Adaptation Programme
MKAN	Mountain Knowledge and Action Networks
RMC	Regional member country
WASH	Water, sanitation, and hygiene

Executive summary

The International Centre for Integrated Mountain Development (ICIMOD) is an intergovernmental organization working with partners from its regional member countries (RMCs): Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. The Himalayan University Consortium (HUC) – an Initiative under ICIMOD’s regional programme on Mountain Knowledge and Action Networks (MKAN) – organized a 13-day regional training on springshed management for socioecological resilience in the Hindu Kush Himalaya (HKH) from 24 March–5 April 2019 in Kathmandu. The training was organized with the support of the Swiss Agency for Development and Cooperation (SDC) through its Indian Himalayas Climate Adaptation Programme (IHCAP) under the Global Programme Climate Change and Environment (GPCCE).

The 13-day training programme on springshed management for socioecological resilience in the HKH was one of the most comprehensive trainings on springs till date. It had both theoretical (nine days) as well as field-based (3 days) components; the theoretical training was conducted at the ICIMOD headquarters in Khumaltar (Lalitpur, Nepal), while the field training was conducted at Godavari, Lalitpur. The uniqueness of this training programme lay in the nature of its participants who came from varied educational backgrounds and diverse geographical locations. A total of 27 resource persons were involved in training 23 participants – 9 of them women – from the HKH countries.

The knowledge and experience that were shared among the participants resulted in enriching discussions during the programme. Since most of the participants were from academia, a lot of scope has been created for further research to take place in this domain. It also opened up doors for collaborations and partnerships amongst the academia, NGOs and government departments. Overall, the training programme was a great success.

Background

Springs are the major source of water for millions of people in the hills and mountains of the HKH; they are a reliable and sustainable source of fresh water in the region. Though the Himalaya are the source of numerous perennial rivers, communities in this region largely depend on springs to meet their drinking, domestic and agricultural water needs. Springs are also important for ecosystem services as they improve the base flow in rivers, support biodiversity, and provide cultural and spiritual services. The Himalayan region has a large number of springs but unfortunately, they are drying up or their discharge is reducing in many places. The drying up of springs is an emerging issue in the region as a result of which communities are facing unprecedented water stress, and thereby, new challenges to sustain livelihood.

The Himalaya represent the tallest, largest and youngest mountain system in the world. Stretching over 2,500 km from west to east, the region is home not only to millions of people but is also an eco-diverse system. With the larger focus and debates being on glaciers, rivers and the changes therein, especially with regard to climate, the aspect of spring water in the region, constituting the main source of water for a majority of the population, have been ignored for many decades.

Natural springs and their sustainable development have not been given due importance at both policy and practice levels despite their critical role in ensuring water security. The present gaps in data and understanding need to be filled regarding the level of dependence of the local populations on springs and the roles these resources play in building resilience and nurturing cultural services. This will allow for the development of innovative solutions for the sustainable management of these traditional sources of groundwater. There is also a need to raise awareness among the academia and relevant policy and decision makers, and to develop skills and share knowledge on this critical topic with field practitioners and community members.

ICIMOD, in its role as a regional learning centre, in collaboration with the Advanced Center for Water Resources Development and Management (ACWADAM), has developed a six-step protocol on springshed management. This [six-step protocol](#) is essentially an outcome of various interdisciplinary partnerships and participatory field experiences. The protocol has been sharpened through a detailed methodology of springshed management developed under a collaboration between ICIMOD and ACWADAM over the past few years.

Capacity building in relation to the protocol will play a significant part in implementing a common methodology for springshed development and management in the HKH region. The regional training programme was hence organized to build capacity on an integrated approach to springshed management for researchers and academicians in the HKH region.

Objectives

The main objective of the training was to provide an interdisciplinary learning approach to understand spring systems in the HKH region, which, in turn, can translate into knowledge and skills on springshed management for socioecological resilience of the local communities. The training aimed to build capacity for springshed management activities on the basis of sound concepts, analysis, and field experience; it lay down a systematic methodology based on the subject of hydrogeology and disciplines such as climate, ecosystems, and water governance; also, to understand and analyse the experiences and impacts of springshed management in different conditions across the HKH region.

The training imparted theoretical learning and exercises as well as practical instructions so that the participants could understand the theoretical background and then apply the knowledge on the field. The outcome was that the participants gained more awareness about the importance of springs and springshed management in the HKH region and were able to build skill sets in analysing springs and springsheds.

Resource persons and participants

The training was conducted with the support of 27 resource persons, amongst whom were senior professionals from ICIMOD; Himanshu Kulkarni and other senior staff from ACWADAM; and Beatrice Marti from Hydrosolutions. There were also guest lecturers affiliated to HUC member institutions and ICIMOD's key partners from Nepal and Bhutan. The details of the resource personnel are attached in Annex 1.

A total of 23 participants from the HKH countries attended the training, among whom 9 were women (Annex 2). The majority of the participants were early- and mid-career faculty members of HUC member institutions who specialize in the geo-sciences and social sciences, and who teach courses or modules on water resources and their management. A selected number of practitioners and local government officials experienced in water resource management also joined the training.

Contents and proceedings of the training

The 13-day training programme had two components: class learning and exercises (9 days); and field studies (3 days). While the classes were held at the ICIMOD headquarters in Khumaltar, Lalitpur, the field study participants were taken to Godavari, Lalitpur. The details of the training programme, consisting of seven modules, are attached in Annex 3. The modules were:

Module 1: Introduction to springs and conceptual frameworks

Module 2: Spring mapping and data monitoring systems

Module 3: Social and governance systems related to springs

Module 4: Hydrogeological mapping and conceptual layout

Module 5: Developing springshed management and governance protocols

Module 6: Measuring and analysing the impact of spring revival activities

Module 7: Cross-learning and action planning

The major topics covered in the training included:

- Background on springs and spring water systems; basic concepts of hydrogeology, water quality, ecosystem management, GIS mapping, and interpreting rainfall data; linkage between springshed management and socioecological resilience in the HKH; introduction to ICIMOD's "Protocol for Reviving Springs in the Hindu Kush Himalaya"
- Understanding the methods of field geology, through hands-on learning, to demarcate spring types and recharge areas
- Understanding the social, ecological and governance aspects of springshed management
- Identifying possible interventions for spring revival

Day 1 (24 March 2019)

The training commenced with an orientation day which involved the introduction of courses and its objectives, as well the faculty and participants introducing themselves. After the introductory remarks by Chi Huyen Truong, Philippus Wester, Regional Programme Manager – MKAN, ICIMOD began his address by welcoming all the participants. He then shared a summary of the Hindu Kush Himalaya Assessment report, highlighting Chapter VIII – "Water in the Hindu Kush Himalaya". He emphasized on the need for holistic research on water, which is not limited to physical aspects. Sanjeev Bhuchar, Theme Leader, Water and Air, Ad-interim, ICIMOD, spoke about the objectives and outcomes of the training. He mentioned that millions of people in the mid-hills of the HKH depend on springs for water security.

David Molden, Director General, ICIMOD, emphasized the utmost importance of extensive field research. He stated that those present needed to be mountain leaders and convey the message of mountain sustainability to connect with and influence others.

Udayan Mishra, Knowledge Management and Networking Officer, and Santosh Raj Pathak, Partnership Officer, ICIMOD, in their address, spoke about the vital role of leadership in implementing any programme/activity on the ground. Leadership, they said, was not about managing, but about involving – about “Interest”, “Inspiration”, “Involvement”, and “Insight”. Pathak underlined the importance and role of leadership in managing springs and said that this would involve building teams, allocating tasks, and motivating fellow team members.

Day 2 (25 March 2019)

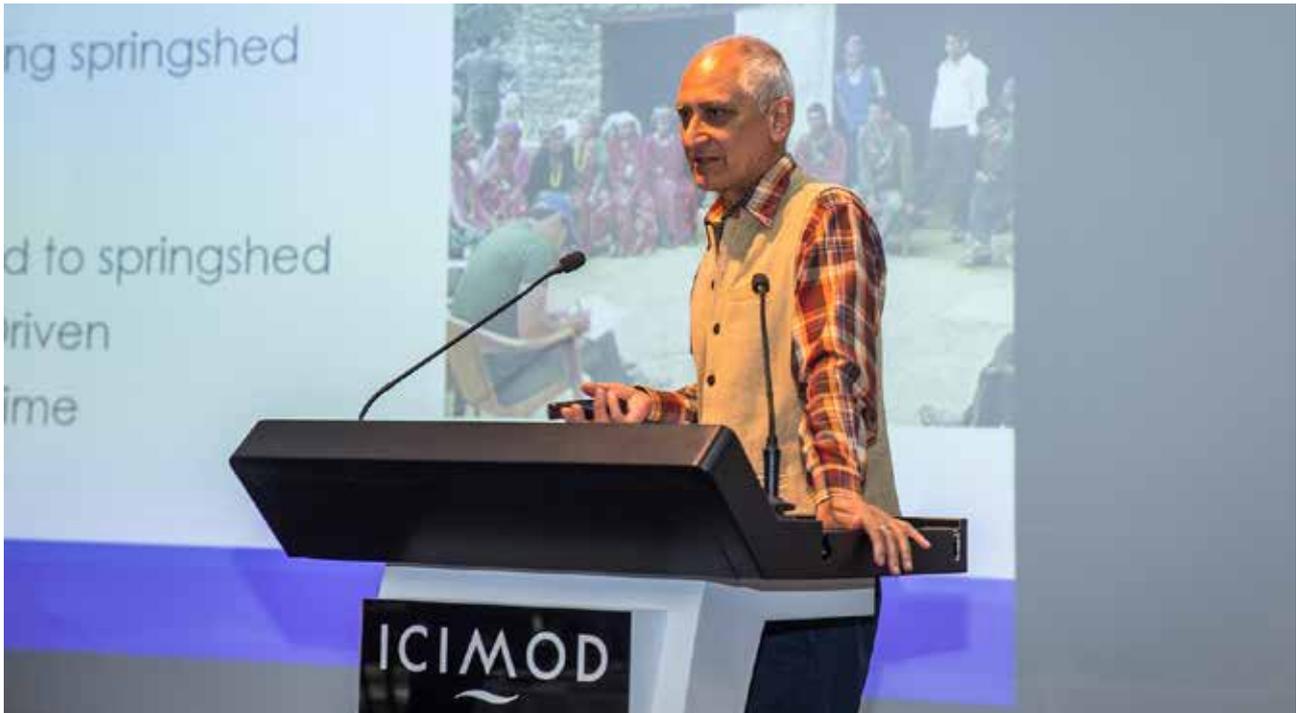
The module for Day 2 was about introduction to springs and the conceptual framework required for springshed management in the HKH region. Sanjeev Bhuchar and Nawraj Pradhan from ICIMOD spoke about the rationale and relevance of springs in the HKH region. They stressed the importance of springs and said that the crisis revolving around them was causing serious concern across the region. The session was able to set the context of the training for the participants.

The next session saw a presentation by Himanshu Kulkarni of ACWADAM on the importance of groundwater and aquifers in the mountains; this proved to be an eye-opener for most of the participants. He spoke about the history of groundwater and how it became the most extracted resource in the world today. He also stated that despite its importance, the subject of groundwater was the most ignored one in the study of mountains. He gave examples and introduced the process of springshed management in the mountains.



Himanshu Kulkarni of ACWADAM speaking about the importance of groundwater and aquifers.

Rajan Kotru from ICIMOD spoke about the relevance of socioecological resilience while practising springshed management in the HKH region. As the HKH region is predominantly mountainous, he said, it has a very different socioeconomic setting from the plains. He placed various examples to establish certain facts that were linked to springshed management in the region. By analysing a case study on the Bhodi-Popdi Springshed in Himachal Pradesh (India) through group exercises, the participants deepened their understanding about assessing socioecological resilience, stakeholder identification, and consensus building among the up/mid/downstream communities.



Rajan Kotru from ICIMOD speaking about the relevance of socioecological resilience in springshed management.

Himanshu Kulkarni delivered an interesting lecture on hydrogeology and the concepts that needed to be applied while implementing a springshed management programme. He spoke about the connection between aquifer and springs in the mountains and about various hydrological properties that should be considered while studying spring behaviour. He also dwelt upon the concept of SAD – Sources, Access and Distribution – wherein the focus was only on these three components while the resource “aquifer” itself was left out, and so there is a need for a paradigm shift in focus from source to resource.

The next session was led by Beatrice Marti from Hydrosolutions where she spoke about the various aspects of water quality and the characterization of waterbodies based on water quality parameters. She explained about the various sources of contaminants that can get into groundwater and their implications on health.

Following this, Vinay Sinha from the TERI School of Advanced Studies, Delhi, spoke about studying the “surface water budgeting” of springsheds and land-use changes using a spatial model, a remote sensing tool developed by him and his research team. He went on to explain the various aspects of remote sensing and their applications in mapping water sources in the mountains.

Day 3 (26 March 2019)

Day 3 saw a continuation of deliberations on the conceptual framework of springshed management. The first session began with an exercise wherein three groups were formed and were given the task to model a participatory management plan among upstream, middle and downstream communities within a watershed/springshed. The groups came up with various ideas and strategies and presented their plans using various forms of schematics.

The next session, led by Jayesh Desai and Clinton Fernandes of ACWADAM, focused on geology; they explained about rocks, rock formations, and structures, and their importance in understanding groundwater accumulation and movement.

The next session on water quality was conducted by Beatrice Marti wherein she introduced methods and techniques of water sampling on the field. She listed a few examples of errors that were more likely to occur while sampling. Beatrice emphasized the importance of timely calibration of the testing instruments and also presented various methods of testing pH, electrical conductivity, bacterial contamination using the H₂S kit, etc.



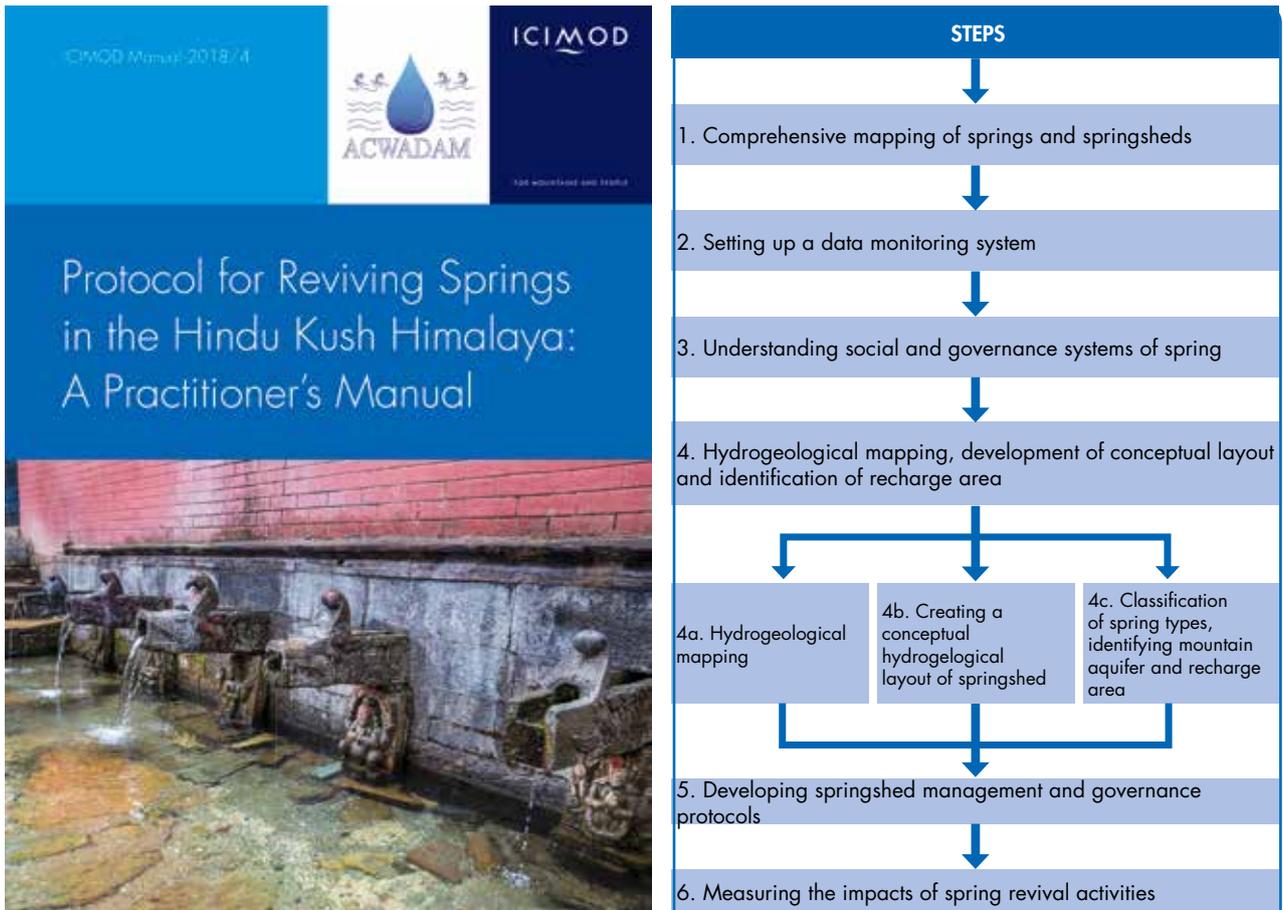
Participants presenting their participatory springshed management plan.

Following this session, Deep Narayan Shah from Tribhuvan University, Kathmandu, conducted an interesting and useful session on ecological assessment using bioindicators. He presented the ways of understanding water quality based on microbes, flora–fauna and other living organisms present in it. According to him, certain microbes thrive only in a particular quality of water. He listed numerous examples of such bioindicators to ascertain the quality of water and the ecology supported by it.

The next session led by Karishma Khadka of ICIMOD was an introduction to the six-step protocol for reviving springs in the HKH. This was the core area of focus in the entire training programme. She presented details and the methodology involved at each step of the protocol for reviving and managing springs in the HKH region.



Clinton Fernandes from ACWADAM speaking on rock structures and their importance in water science.



The six-step protocol for spring revival included in *Protocol for Reviving springs in the Hindu Kush Himalaya: A practitioner's manual*.

Later, Nawraj Pradhan and Pradyumna Rana from ICIMOD presented a "Participatory Community Training Manual for Springshed Management". The manual seeks to demystify springshed science and governance. Here the participants were divided into three groups and taught how to use the community manual through a participatory exercise. This tool has been developed for the training of trainers and caters to ground-level staff and water user groups and communities.



Presenting the participatory community training manual for springshed management.

Day 4 (27 March 2019)

The module for Day 4 was a field visit to ICIMOD's Godavari Knowledge Park site. The first half of the day was assigned to mapping the learnings of the first three days as a part of practical learning and understanding. The participants in their respective groups went around the knowledge park area to gather information based on the learnings gained in the initial three days. After completing the walk, each group presented their observations and inferences in a session coordinated by Sanjeev Bhuchar.



A participant presenting his observations after the walk around Godavari Knowledge Park.



Participants observing a 3D model of the Godavari Springshed at Godavari Knowledge Park.

Post-lunch, the three groups were taken to three different sites for carrying out the geological mapping exercise, spring inventory preparation and water quality measurements. Each group covered all the three sites. The water quality measurements were coordinated by Beatrice Marti of Hydrosolutions and Karishma Khadka of ICIMOD. The spring inventory was prepared by Jayesh Desai of ACWADAM and the geological measurement exercise was conducted by Clinton Fernandes of ACWADAM and consultant Rajendra Shrestha.



Exercise in geological mapping at Godavari.



Spring inventory exercise at Godavari Knowledge Park.



Measuring the discharge of a spring at Godavari Knowledge Park.



Beatrice Marti from Hydrosolutions explaining about water quality measurement.

These activities were essentially precursors to the steps that are a part of the six-step protocol for reviving springs. Each group was introduced to the fundamentals of geological mapping on the field, preparation of spring inventory and the parameters of measuring water quality. This part of the module was critical as it was the building block for the upcoming part of the training.

Day 5 (28 March 2019)

Day 5 began with Step 1 (comprehensive mapping of springs and springsheds) of the six-step protocol for reviving springs. A technical session was conducted by Nawraj Pradhan wherein he introduced the approaches and methods involved in this step. He spoke about the concept of water tower and the valley-to-valley approach required for springshed management in the context of the HKH region. He also highlighted the importance of delineating recharge areas and of preliminary data collection.

Following this session, Rajesh Bahadur Thapa of ICIMOD and Jayesh Desai of ACWADAM gave a demonstration of plotting the field information on the GIS platform; the participants were simultaneously practising in their respective workstations.

The next session was conducted by Madhav Dhakal of ICIMOD on Step 2 involving setting up of data monitoring systems; he explained the ways in which various hydrological data related to springshed need to be collected. He also gave examples of data collection and represented them through various graphical formats. Taking up from this session, Beatrice Marti introduced the methods of establishing a system for monitoring water quality data. She emphasized certain points that needed to be considered while monitoring water quality parameters. Later, she specifically dwelt on various water quality data parameters and their significance. She also made a brief presentation on analysing water quality data.



Jayesh Desai explaining significance of drainage analysis in springshed management.

The next session was conducted Jayesh Desai on the links between drainage, geology and springs; here, he covered the significance of drainage analysis in interpreting certain components of the springshed. He also presented details about various drainage patterns and their importance in interpreting sub-surface geology. Post-tea, a practical workshop on drainage analysis was conducted which covered the process of morphometric analysis and its application in understanding the relationship between surface hydrology and geology.

The day ended with a session on leadership which was coordinated by Santosh Raj Pathak. He talked about the difference between a “leader” and a “boss”, and the qualities that were required to become a successful leader.

Day 6 (29 March 2019)

The module for Day 6 in the first half was on Step 3 – understanding the socio-governance aspect of a springshed. This was coordinated by Nawraj Pradhan and Sanjeev Bhuchar. They explained the various critical components of socio-governance in the context of the HKH region and how socio-governance could be used as a tool in the management of a springshed. They highlighted the importance of social surveys and the collection of units of socioeconomic data. Speaking on the criteria for the surveys (focus group discussions, key informant interview and questionnaire survey) related to the local context and springs, they also mentioned the need for holding these surveys. They also demonstrated with examples, how knowledge and data from a single Excel sheet could be packaged into info graphs and posters. The session also saw a short skit performed by the participants to demonstrate the actual socio-governance dynamics in a typical mountain village.



Sanjeev Bhuchar presenting Step 3 of the spring revival protocol.

Following this presentation, Sanhita Sahasrabudhe of ICIMOD conducted a session on the ways of communicating with the communities. She listed out the various points that should be considered while entering into any dialogue with the local community.

The next module in the second half was conducted by Himanshu Kulkarni on aquifer mapping. He introduced the various ways and methods of undertaking aquifer mapping. He presented examples of aquifer mapping exercises carried out by ACWADAM. Later, he conducted a small exercise wherein he distributed two drainage basins each to three groups for interpretation. Based on the learnings from the previous session on drainage analysis, each group came up with various observations and inferences.

Following this session, Clinton Fernandes made a presentation on the classification of springs; he explained about various spring types and the basis for their classification. He gave examples of spring types and how they could be linked to the identification of recharge areas.

Post-tea, a small session was conducted by Beatrice Marti and Karishma Khadka where they demonstrated some analytical examples of interpreting water quality.

Day 7 (30 March 2019) – Free day

Day 8 (31 March 2019)

The module for Day 8 was entirely technical in nature and the most critical component of the springshed management training programme. The opening session was conducted by Himanshu Kulkarni on aquifers and their links with spring behaviour. He introduced the concepts of aquifer “transmissivity” and “storativity”, and how these two properties control the behaviour of springs. The session was quite enriching for the participants as they had not known about these concepts.

Following this session, Jayesh Desai made a presentation on hydrogeological mapping wherein he demonstrated the steps involved in it. This session covered the various fundamentals of geology that are applied while mapping hydrogeology on the field. He demonstrated the way in which field data is plotted and then converted into a hydrogeological map. He also spoke about the ways in which a 3D conceptual layout could be developed using a hydrogeological map prepared for a particular area.

The participants were provided with a dummy data set to practise the above exercise so that they could acquire hands-on experience in actually generating a map and a 3D hydrogeological conceptual layout in order to eventually identify and demarcate spring recharge areas.

As a follow-up to this practical session, a small exercise was conducted by Himanshu Kulkarni wherein he gave schematics of different springs to each group for interpreting spring types and recharge areas. Based on their learnings, each group came up with observations and inferences on spring type and recharge area for each spring schematic. Later, he opened the floor for discussions wherein each schematic was discussed in detail and conclusions arrived at on its type and recharge area.

The last session was conducted by Vinay Sinha on “groundwater modelling and justifications by a morphometric analysis of the Ramgarh Lake Catchment”, a project on which he had worked in the past. Here, he demonstrated the use of the GIS platform for groundwater modelling.

Day 9 (1 April 2019)

Day 9 was spent entirely in the field wherein the participants were made to apply the concept of hydrogeological mapping: developing skill sets in measuring the strike and dip of rocks; understanding how groundwater would move through the system to the spring; and learning about how recharge areas could be identified on the field.

The participants were split into three groups led by ICIMOD and ACWADAM teams, and each of them visited one of these three spring locations: Godavari Kunda, Naudhara, and Sungure Khola. Each group was given the exercise of following Step 1 of the six-step spring protocol; this involved mapping and the preparation of a spring inventory. Some additional information was procured by talking to members of the community that directly benefit from the spring. Later, the groups selected their own traverses for hydrogeological mapping. By the end of the day, each group had some level of field data which they were going to synthesize in the upcoming sessions.



Participants conducting discharge and water quality measurements at Sungure Khola spring.



Participants carrying out geological measurements in the field.



Interaction with a spring beneficiary to understand the usage of spring water.

Day 10 (2 April 2019)

The module on Day 10 specifically dealt with Step 5: developing springshed management and governance protocols. The day began with a practical exercise wherein the participants were involved in synthesizing the data they had collected from the field.

Post-tea, Madhav Dhakal conducted a session on developing management and governance protocols based on the first four steps. He explained about the various physical and biological measures that could be adopted to identify recharge areas for the revival of springs. He also cited examples from an actual field implementation programme undertaken in two of ICIMOD's pilot sites.

The second half of this session was coordinated by Sanjeev Bhuchar wherein he presented various examples of socio-governance protocols in managing springsheds. He stated that apart from these socio-governance protocols, physical interventions, too, were of vital importance in sustaining any springshed programme.

Post-lunch, guest speakers from Bhutan and Nepal were invited to share their experiences while working on springshed management in their respective



Sonam Choden from the Department of Forests and Park Services, Bhutan making her presentation.

countries. Sonam Choden of the Department of Forests and Park Services (Ministry of Agriculture and Forests, Royal Government of Bhutan) highlighted the importance and relevance of spring water to Bhutan. She emphasized the fact that, despite a good forest cover, her country still faced water scarcity. She also presented details about the initiatives undertaken by Bhutan towards managing and reviving its springs.

Mohan Raj Bhatta of HELVETAS Swiss Interco-operation, Nepal, gave a presentation about the scenario and status of springs in Nepal and how Helvetas was addressing the issue of drying springs in collaboration with ICIMOD and ACWADAM through pilot projects in the country. He also introduced the WUMP (Water User Master Plan) tool which helps in developing an integrated plan of water resources to achieve effective, equitable and efficient use of water at the local level. WUMP is essentially a process through which the local authorities and communities interact, exchange knowledge, acquire ownership of the water management plan, and execute roles and responsibilities for its implementation and monitoring. Later in the day, Sami Ullah, one of the participants, shared his research work on springs in the Kashmir Valley.

Day 11 (3 April 2019)

The morning session on Day 11 began with a practical exercise wherein the participants continued to synthesize the field data in their respective groups. A lot of discussions went into the actual plotting of data to generate a hydrogeological map and a cross-sectional layout.



Participants synthesizing the field data to generate maps and layouts.

This session went on for around two hours after which a session on measuring and analysing the impact of springshed management was conducted by Jayesh Desai. He mentioned certain criteria along which the impact assessment could be carried out both in terms of hydrology as well as sociology.

Some case studies on pilot springshed management programmes were presented by the resource persons from ICIMOD and ACWADAM. Pradyumna Rana presented a case study from a pilot site in far-west Nepal and Uttarakhand, India, where springshed management was jointly executed by ICIMOD and ACWADAM. The next case study was presented by Nabina Lamichhane of ICIMOD from sites in mid-western and central Nepal where participatory springshed management was undertaken by ICIMOD in collaboration with ACWADAM and Helvetas.

Another case study was presented by Jayesh Desai from a site in Himachal Pradesh which was a classic case of local-level institutionalization for management of springs. The next case study was presented by a participant from Afghanistan, Osama Qanit, on the ancient and traditional groundwater system in Afghanistan known as “karez or qanat”. He made an insightful presentation that explained the process of creating and maintaining a qanat.

The last session of the day was on “Communicating Results and Delivering an Effective Presentation” which was coordinated by Sanhita Sahasrabudhe. She gave some key pointers that needed to be considered while making any kind of effective presentation.

Day 12 (4 April 2019)

Day 12 was about giving the participants hands-on exercises on developing a springshed management plan through a quick appraisal of the springsheds in the field sites. During the first half, the groups went to their respective field sites for conducting a socio-governance survey. They interacted with the communities from these. A short survey form had been distributed to the groups for interacting with the communities. The expected outcome of this exercise was to understand the supply and demand scenarios around the spring, along with various other critical information like spring ownership and details of village-level institutions that manage the spring water.

During the second half, the participants continued working on their data sets for developing a springshed management plan based on the data and information acquired through two field visits. Each group was also asked to prepare a PowerPoint presentation for the next day. The expected outcome of this exercise was to get a springshed management plan from each group for their respective spring, based on the six-step protocol.



Participants conducting an FGD with the community that uses the Godavari Kunda.

Day 13 (5 April 2019)

The module for the last day was essentially about cross-learning and the preparation of a future action plan based on what transpired during the first 12 days of the training programme on springshed management for socioecological resilience in the HKH region.

The first part of the day saw some experts working in Nepal sharing their experiences. Tripti Rai (Country Director) of WaterAid Nepal shared the activities undertaken by WaterAid for clean water and sanitation under its flagship water, sanitation, and hygiene (WASH) initiative. She presented some examples of how the health of the people in the mountains was getting affected due to poor water quality and sanitation in the villages. Talking further about WaterAid Nepal's WASH initiative (2017–2021), she said that the goal was to ensure that all the marginalized groups and individuals, and people living in vulnerable situations in Nepal, would get access to clean water and sanitation. The next session was led by Ram Singh Thapa of the Department of Soil and Water Conservation (Government of Nepal) wherein he explained about his research project on understanding and identifying the recharge areas of springs through an isotopic analysis. He also described the methodology applied for carrying out this research.

Following these two interesting sessions, a panel discussion on “Springshed Management and Its Significance in the Context of the Himalaya and Water Security” was hosted by Nawraj Pradhan. The panel was chaired by Ram Singh Thapa, Sanjeev Bhuchar, Tripti Rai, and Jayesh Desai. The panel was open to questions from the participants.



Panel discussion on springshed management and its significance in the context of the Himalaya and water security.

After this, each group showcased their springshed management plan based on all the steps covered over the first 12 days of the training. All the three groups presented their data and analysed them step-wise in both tabular and graphical forms. The recharge area identification by all the three groups was interesting and close to the actual recharge areas. A lot of analysis was seen in terms of water quality data and the FGD socio-governance survey. The overall outcome of this exercise was certainly positive and met the expectations of the resource organizations.

After the group presentations, the participants were requested to provide an overall feedback on the training through the online platform created by HUC and ICIMOD. This online feedback exercise was followed by another feedback session on how the knowledge and skill set acquired during the programme would be applied by the participants in their respective geographies and thematic areas of work. Some participants gave their response based on their experiences with current projects on springs funded by HUC.

Further, a quick round of feedback/experience sharing was held to understand the level of success of the overall training programme. Some participants provided entirely positive feedback, while a few mentioned actual challenges; they also gave suggestions for improvement in certain sections of the training programme. A few of the suggestions were about arranging for more hands-on exercises in mapping resilience in the ecological setup; providing guidelines on how exactly policies should be framed; and training on infrastructural development in the mountains.

Another feedback was about how the groups were not really able to communicate with each other as they were busy with their own intra-group tasks. Thus, it was felt that there should have been some time and scope for the groups to interact with each other so that they could learn more from the entire exercise.

All the participants and resource persons received a certificate of course completion with a USB flash drive containing all the course materials.



Feedback and experience sharing by the participants.



Closing session being addressed by Philippus Wester, Regional Programme Manager – MKAN, ICIMOD.

Evaluation of the training

The overall training programme was evaluated by the participants (Annex 4). In various categories, the trainees were asked the following questions:

1. Does the training meet your expectation?
2. List three key takeaways that you are ready to apply in your current work upon returning to your home institution.
3. How would you describe the extent to which each of the following areas was covered by the programme?
 - Hydrogeology
 - Social and governance
 - Ecology/Biodiversity
 - GIS
 - Water quality
 - Field training
4. How would you describe the time allocation for each of the following?
 - Time for hands-on instructions
 - Time for on-site group work
 - Time for extra-curriculum building
 - Knowledge sharing by participants
 - Overall duration of the programme
5. How would you rank the following features of the programme?
 - Mountain focus
 - Hindu Kush Himalaya specific
 - Interdisciplinary
 - Field research
 - Leadership
6. How would you rank the following organizational and logistics aspects of the training?
 - Pre-arrival communication
 - Hotel accommodation
 - Foods
 - Provision of learning materials
 - On-site facility
 - On-site support
7. How would you rank your overall satisfaction about the following aspects of the programme?
 - Knowledge/content
 - Research skills
 - Networking
 - Soft skills (communication, feedback, team building, etc.)
 - Logistics

Each module was evaluated by the participants using the following questions:

- How would you rank the content of this module?
- How would you rank the method of delivery of this module?
- List three things you value the most about this module.
- What do you dislike about this module or what needs to be improved?

The majority of the participants responded that the training exceeded their expectations. On the key takeaways that they were ready to apply in their current work after returning to their home institution, 32 of the participants said that they would apply the same immediately, while 68 per cent responded by saying that they would be ready in two years' time. Most of the participants stated that more time needed to be allotted for hydrogeology, GIS, and

field training. As for the social and governance part covered by the programme, the participants felt that it was just right in terms of the different topics that were addressed. The participants were also happy with the duration of the programme. Ranking the different features of the programme (Mountain focus, Hindu Kush Himalaya-specific, interdisciplinary, field research and leadership), a majority responded excellent for Mountain focus, HKH specific and Interdisciplinary; sufficient for Leadership and inadequate for Field research. Most of the participants responded with an “excellent” for the organizational and logistics aspects of the training. They were also highly satisfied with the knowledge/content of the training, the research methodology, networking opportunities, and the imparting of soft skills.

Conclusion

The 13-day training programme on springshed management trained 23 participants from diverse backgrounds of the HKH region – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. The participants were introduced to the “Protocol for Reviving Springs in the Hindu Kush Himalaya” whereby they learnt about the spring systems in the HKH and developed skills on springshed management: mapping of springs; monitoring; understanding socio-governance systems; conducting hydrogeological studies to identify the recharge areas; and learning about overall springshed management and governance protocols.

Recommendations

The springshed management training should be extended to researchers, relevant practitioners, and community members who can play a key role in scaling out springshed development and management methodology, and integrate conceptual and field experiences into their areas of work and portfolios. The water quality module of the springshed management protocol should be refined in the future and include WASH basics.

Annex 1: Resource persons

SN	Country	Given name	Middle name	Surname	Gender	Place	University/Institution
1	Bhutan	Sonam		Choden	Female	Thimphu	Royal Government of Bhutan
2	India	Himanshu	Chandrakant	Kulkarni	Male	Pune	ACWADAM
3	India	Jayesh	Nandakumar	Desai	Male	Pune	ACWADAM
4	India	Clinton		Fernandes	Male	Pune	ACWADAM
5	India	Vinay	Shanker Psd	Sinha	Male	Delhi	TERI School of Advanced Studies
6	Nepal	Ram	Singh	Thapa	Male	Pokhara	Basin Management Centre
7	Nepal	Mohan	Raj	Bhatta	Male	Surkhet	Helvetas
8	Nepal	Tripti		Rai	Female	Kathmandu	WaterAid Nepal
9	Nepal	Rajendra		Shrestha	Male	Kathmandu	Consultant
10	Switzerland	Beatrice		Marti	Female	Zürich	Hydrosolutions Ltd
11	Nepal	Chi	Huyen	Truong	Female	Kathmandu	ICIMOD
12	Nepal	Gunanidhi		Pokhrel	Male	Kathmandu	ICIMOD
13	Nepal	Karishma		Khadka	Female	Kathmandu	ICIMOD
14	Nepal	Madhav		Dhakal	Male	Kathmandu	ICIMOD
15	Nepal	Nabina		Lamichhane	Female	Kathmandu	ICIMOD
16	Nepal	Nawraj		Pradhan	Male	Kathmandu	ICIMOD
17	Nepal	Pradyumna	J.B.	Rana	Male	Kathmandu	ICIMOD
18	Nepal	Rajan		Kotru	Male	Kathmandu	ICIMOD
19	Nepal	Rajesh		Thapa	Male	Kathmandu	ICIMOD
20	Nepal	Sanjeev		Bhuchar	Male	Kathmandu	ICIMOD
21	Nepal	Santosh	Raj	Pathak	Male	Kathmandu	ICIMOD
22	Nepal	Udayan		Mishra	Male	Kathmandu	ICIMOD
23	Nepal	Sanhita		Sahasrabudhe	Female	Kathmandu	ICIMOD
24	Nepal	Bhawana		Syangden	Female	Kathmandu	ICIMOD
25	Nepal	Achala		Sharma	Female	Kathmandu	ICIMOD
26	Nepal	Teng		Geer	Male	Kathmandu	ICIMOD
27	Nepal	Ayush		Sharma	Male	Kathmandu	ICIMOD

Annex 2: Participants

SN	Country	Given name	Middle name	Surname	Gender	Place	University/Institution
1	Afghanistan	Mohammad	Haroon	Hairan	Male	Kabul	Kabul University
2	Afghanistan	Asghar		Ghaforzai	Male	Jalalabad	Nangarhar University
3	Afghanistan	Mohammad	Yasin	Karimzai	Male	Kabul	MAIL, Government of Afghanistan
4	Afghanistan	Osama		Qanit	Male	Kabul	Ministry of Rural Rehabilitation and Development
5	Bangladesh	Sara		Nowreen	Female	Dhaka	Bangladesh University of Engineering and Technology
6	Bangladesh	Syed Mohammad	Shamsul	Huda	Male	Chittagong	University of Chittagong
7	Bhutan	Tsheten		Dorji	Male	Thimphu	Royal Society for Protection of Nature
8	Bhutan	Kausila		Timsina	Female	Thimphu	Royal University of Bhutan
9	Bhutan	Ugyen		Dorji	Male	Lobesa	Royal University of Bhutan
10	China	Xing		Ma	Female	Kunming	Kunming Institute of Botany
11	India	Sumit		Rai	Male	Almora, Himachal Pradesh	G.B. Pant National Institute of Himalayan Environment & Sustainable Development
12	India	Neetu		Tyagi	Female	Dehradun	State Climate Change Centre, Uttarakhand
13	India	Himani		Singh	Female	New Delhi	TERI School of Advanced Studies
14	India	Sami	Ullah	Bhat	Male	Srinagar	University of Kashmir, Srinagar
15	Myanmar	Khin	Chan Myae	Cherry Maung	Female	Yangon	University of Yangon
16	Nepal	Nabin		Dhungana	Male	Pokhara Office	CARE Nepal
17	Nepal	Prakash	Singh	Thapa	Male	Kathmandu	Department of Forests and Soil Conservation, Watershed and Landslide Management Division
18	Nepal	Susmina		Gajurel	Female	Kathmandu	The Small Earth Nepal
19	Nepal	Deep	Narayan	Shah	Male	Kathmandu	CDES, Tribhuvan University
20	Nepal	Menuka		Maharjan	Female	Hetauda	Tribhuvan University
21	Pakistan	Areej		Sabir	Female	Islamabad	Pakistan Agriculture Research Council
22	Pakistan	Kifayatullah		Khan	Male	Khyber-Pakhtunkhwa	University of Swat

Annex 3: Detailed training programme

Day 1 (Sunday, 24 March 2019) – Venue: Hotel Himalaya		
Orientation and opening session		
Time	Activity	Resource persons
15:00–15:15	Registration	<i>Achala Sharma</i> , Programme Associate, HUC, ICIMOD
15:15–17:30	Welcome remarks (5 mins)	<i>Chi H Truong (Shachi)</i> , Programme Coordinator, HUC, ICIMOD
	Opening speech (10 mins)	<i>Philippus Wester</i> , Regional Programme Manager-Mountain Knowledge and Action Networks, ICIMOD <i>David Molden</i> , Director General, ICIMOD
	Objectives of the course (10 mins)	<i>Sanjeev Bhuchar</i> , Theme Leader, Water and Air Ad-Interim, ICIMOD <i>Nawraj Pradhan</i> , NRM Specialist, Ecosystem Services, ICIMOD
	Introduction of participants (30 mins)	<i>Udayan Mishra</i> , Knowledge Management and Networking Officer, ICIMOD <i>Santosh Raj Pathak</i> , Partnership Officer, ICIMOD
	Leadership (30 mins)	<i>Santosh Raj Pathak</i> , Partnership Officer, ICIMOD <i>Sanhita Sahasrabudhe</i> , Knowledge Management and Communications Officer, ICIMOD <i>Udayan Mishra</i> , Knowledge Management and Networking Officer, ICIMOD
	Short survey of knowledge and skills of participants (30 mins)	<i>Himanshu Kulkarni</i> , Founder Trustee and Executive Director, ACWADAM <i>Beatrice Marti</i> , Senior Consultant, Water Resources Management, Hydrosolutions <i>Sanhita Sahasrabudhe</i> , Knowledge Management and Communications Officer, ICIMOD <i>Udayan Mishra</i> , Knowledge Management and Networking Officer, ICIMOD
	Discussion (10 mins)	<i>Sanjeev Bhuchar</i> , Theme Leader Water and Air Ad-Interim, ICIMOD <i>Beatrice Marti</i> , Senior Consultant, Water Resources Management, Hydrosolutions
Day 2 (Monday, 25 March 2019) – Venue: ICIMOD		
Module 1: Introduction to springs and the conceptual framework		
Time	Activity	Resource persons
08:30–09:00	Departure of participants from Hotel Himalaya to ICIMOD	HUC Secretariat
09:00–10:00	Introduction to springs: Rationale and relevance (20 mins)	Sanjeev Bhuchar, Nawraj Pradhan
	Importance of groundwater and aquifers in the region (40 mins)	Himanshu Kulkarni
10:00–10:30	Basic concepts of socioecological resilience and its links to springshed	Rajan Kotru, Pradyumna Rana, Nawraj Pradhan
10:30–10:45	Tea break and group photo	
10:45–12:30	Basic concepts of socioecological resilience and its links to springshed (continued)	Rajan Kotru, Pradyumna Rana, Nawraj Pradhan
12:30–13:30	Lunch	
13:30–14:30	Hydrogeological concepts for springshed management	Himanshu Kulkarni
14:30–15:30	Groundwater quality concepts for springshed management	Beatrice Marti
15:30–15:45	Tea break	
15:45–17:00	Surface water budget of springshed and its impact due to land-use change using the spatial model	Vinay Sinha

Day 3 (Tuesday, 26 March 2019) – Venue: ICIMOD		
Module 1: Conceptual framework (continued)		
Time	Activity	Resource persons
08:30–09:00	Departure of participants from Hotel Himalaya to ICIMOD	HUC Secretariat
09:00–09:15	Reflections from Day 2	Beatrice Marti, Nawraj Pradhan
09:15–10:45	Social dimensions (participatory modelling)	Rajan Kotru, Pradyumna Rana, Suman Bisht
10:45–11:00	Tea break	
11:00–12:30	Classification of rocks and the importance of rock structures in water science	Jayesh Desai, Rajendra B. Shrestha, Gunanidhi Pokhrel
12:30–13:30	Lunch	
13:30–14:30	Introduction to groundwater quality	Beatrice Marti, Karishma Khadka
14:30–15:30	Introduction to the six-step protocol for reviving springs in the HKH	Madhav Dhakal, Karishma Khadka
15:30–15:45	Tea break	
15:45–16:30	Participatory Community Training Manual for springshed management	Pradyumna Rana, Nawraj Pradhan
16:30–17:00	Field visit and group work orientation	Madhav Dhakal, Jayesh Desai, Santosh Raj Pathak
Day 4 (Wednesday, 27 March 2019) – Venue: ICIMOD Godavari Knowledge Park		
Module 1: Field visit and practical		
08:00–09:00	Departure of participants from Hotel Himalaya to Godavari Knowledge Park, ICIMOD	HUC Secretariat
09:00–09:15	Reflections from Day 3 Group photo	Chi H Truong, Sanjeev Bhuchar
09:15–12:30	Mapping the learnings of the first three days to a landscape (socio-ecological resilience)	Rajan Kotru, Madhav Dhakal, Karishma Khadka, Pradyumna Rana, Sanjeev Bhuchar, Nawraj Pradhan, Rajesh Bahadur Thapa, Santosh Raj Pathak
12:30–13:30	Lunch	
13:30–15:30	Observing rocks and springs, and learning the basic skills of mapping and monitoring a springshed	Jayesh Desai, Himanshu Kulkarni, Gunanidhi Pokhrel, Rajendra Shrestha
15:30–17:00	Practical on water quality sampling	Beatrice Marti, Nawraj Pradhan, Karishma Khadka, Madhav Dhakal
17:00	Return to Hotel Himalaya, Kathmandu	HUC Secretariat

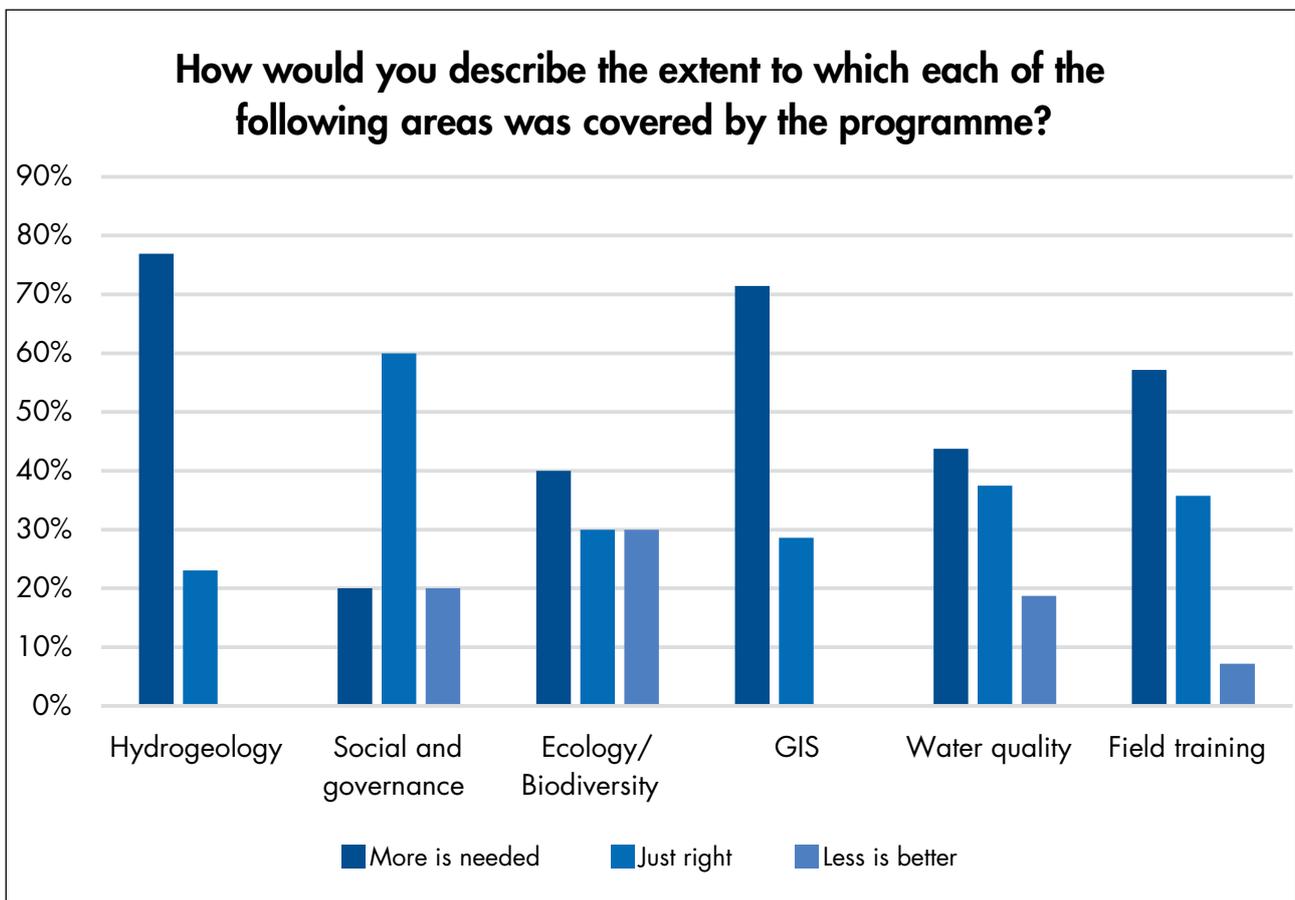
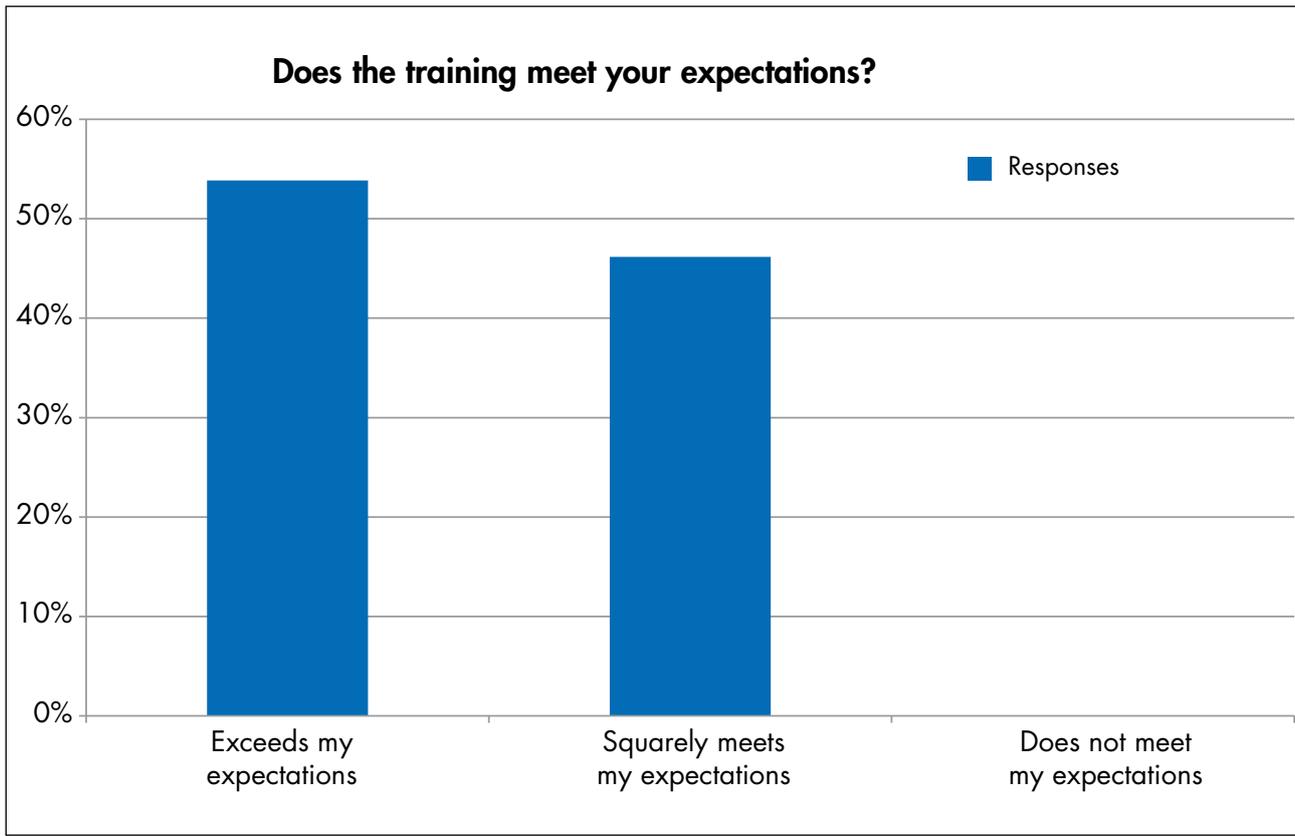
Day 5 (Thursday, 28 March 2019) – Venue: ICIMOD		
Module 2: Springs mapping and data monitoring systems		
Time	Activity	Resource persons
08:30–09:00	Departure of participants from Hotel Himalaya to ICIMOD	HUC Secretariat
09:00–09:15	Reflections from the field visit	Himanshu Kulkarni, Beatrice Marti
09:15–10:45	Comprehensive mapping of springs and springsheds Delineation of a springshed – concept and process (Protocol – Step 1)	Nawraj Pradhan Jayesh Desai, Rajesh Bahadur Thapa
10:45–11:00	Tea break	
11:00–12:00	Setting up a data monitoring system (Protocol – Step 2) Rainfall and spring discharge	Madhav Dhakal, Jayesh Desai
12:30–12:30	Setting up a data monitoring system (Protocol – Step 2) Groundwater quality	Beatrice Marti, Karishma Khadka
12:30–13:30	Lunch	
13:30–14:30	Water quality sampling and analysis (Protocol – Step 2) Basic statistical tools	Beatrice Marti, Karishma Khadka
14:30–15:30	Theory session on relation between drainage, geology and springs	Madhav Dhakal, Jayesh Desai
15:30–15:45	Tea break	
15:45–17:00	Practical exercise: Drainage analysis; and watershed demarcation of springshed using concepts of geology	Madhav Dhakal, Jayesh Desai
Day 6 (Friday, 29 March 2019) – Venue: ICIMOD		
Module 3: Social governance and hydrogeology mapping		
08:30–09:00	Departure of participants from Hotel Himalaya to ICIMOD	HUC Secretariat
09:00–09:15	Reflections on leadership	Santosh Raj Pathak
09:15–10:30	Step 3: Understanding social and governance systems related to springs Data collection instruments and process	Pradyumna Rana Nawraj Pradhan, Karishma Khadka, Suman Bisht
10:30–10:45	Tea break	
10:45–12:30	Step 3: Understanding social and governance systems related to springs (continued) Using socioeconomic information for spring revival activities Communicating with communities (20 mins)	Pradyumna Rana, Nawraj Pradhan, Karishma Khadka, Suman Bisht Sanhita Sahasrabudhe
12:30–13:30	Lunch	
Module 4: Hydrogeological mapping and conceptual layout		
13:30–16:30	(Step 4 a): Hydrogeological mapping	Himanshu Kulkarni, Clinton Fernandes, Jayesh Desai, Rajesh Bahadur Thapa
13:30–13:45	Tea break	
16:30–17:00	Water quality field assessment report	Beatrice Marti, Karishma Khadka

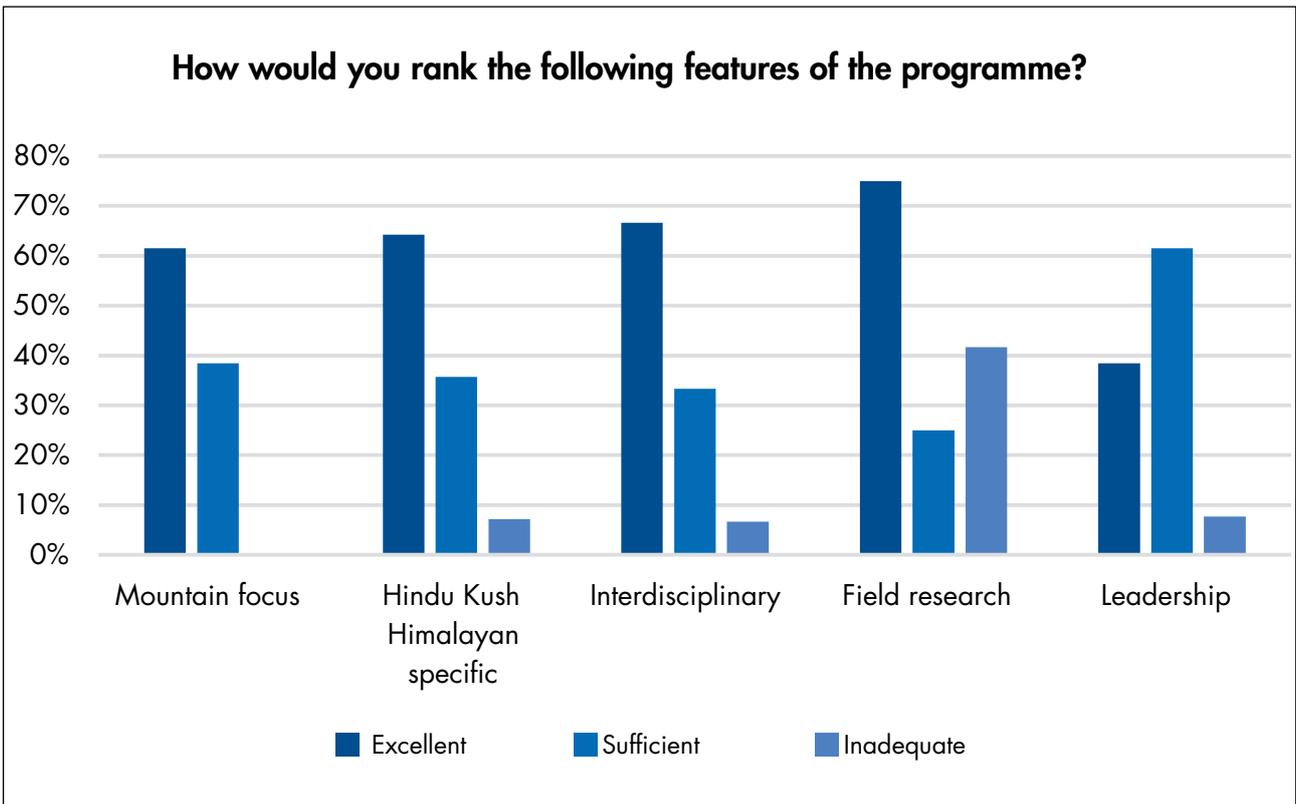
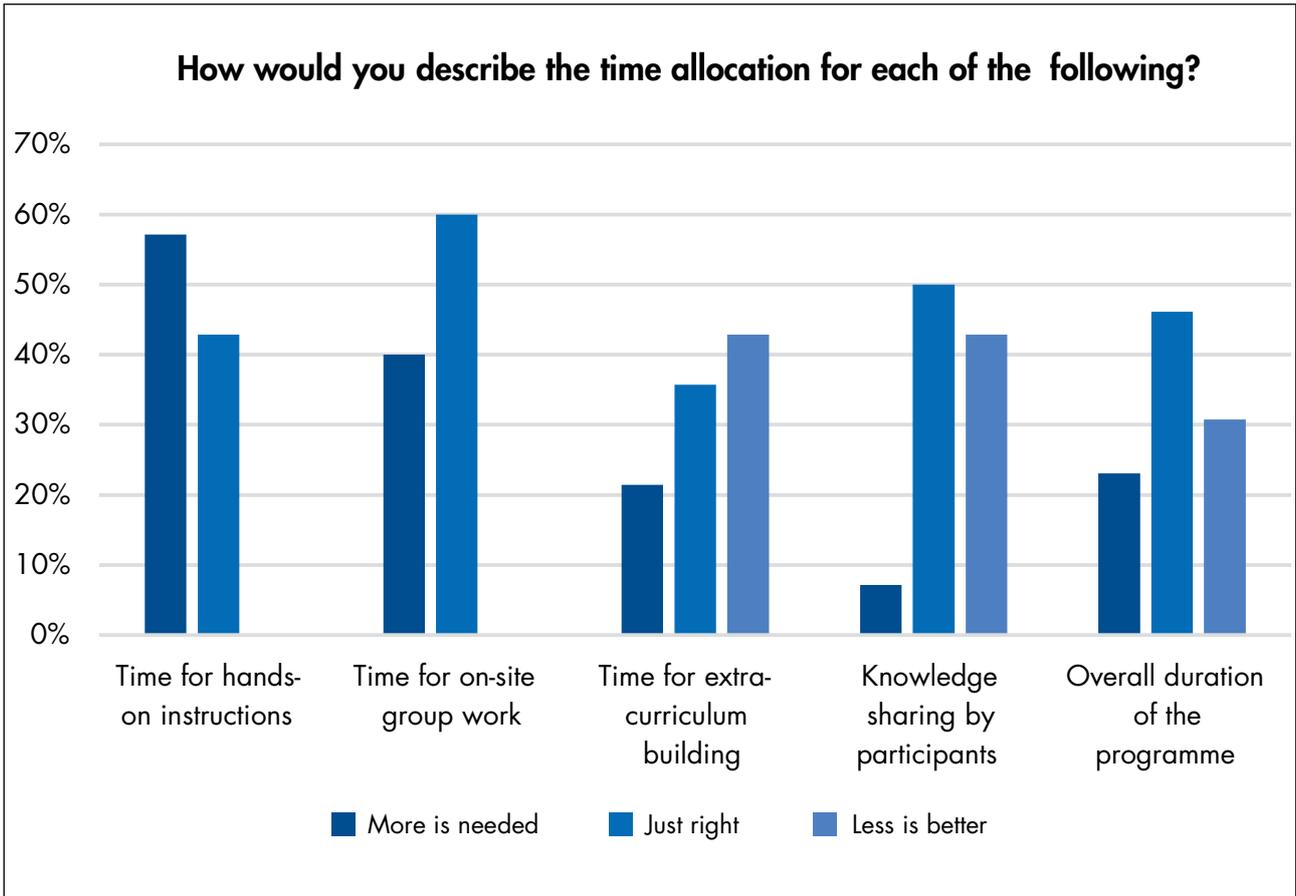
DAY 7 (Saturday, 30 March 2019)		
Free day		
Day 8 (Sunday, 31 March 2019) – Venue: Hotel Himalaya		
Module 4: Creating conceptual layout; classification of spring types		
Checkout by noon and move to Hotel View Bhrikuti (Godavari)		
Time	Activity	Resource persons
09:00–09:15	Reflections from Day 7 (15 mins)	Chi H Truong, Sanjeev Bhuchar
09:15–12:30	Step 4 (b): Creating a conceptual layout of the springshed Step 4 (c): Classification of spring type, broad aquifer understanding, demarcating the recharge area, and its analysis Converting hydrogeological information into a conceptual layout of the springshed, including the underlying aquifer system (15 mins tea break)	Jayesh Desai, Clinton Fernandes, Rajesh Bahadur Thapa, Gunanidhi Pokhrel
12:30–13:30	Lunch	
13:30–15:30	To classify a spring on the basis of the above steps and demarcate the recharge area; also understand the relation between aquifer properties and spring behaviour	Himanshu Kulkarni, Rajendra Shrestha,
15:30–15:45	Tea break	
15:45–16:30	Step 4 (c): Classification of spring type, broad aquifer understanding, demarcating the recharge area, and its analysis	Himanshu Kulkarni, Rajendra Shrestha
16:30–17:00	Knowledge sharing by participants	Santosh R. Pathak, participants
Day 9 (Monday, 1 April 2019) – Venue: Hotel View Bhrikuti, Godavari		
Module 4: Field/Practical		
09:00–09:15	Reflections from Day 8	Nawraj Pradhan
09:15–12:30	Applying the concept of hydrogeological mapping on the field – developing skill sets around measuring the strike and dip of rocks, and understanding how groundwater would move through the system to the spring; also, understanding how recharge areas could be identified in the field.	Rajendra Shrestha, Madhav Dhakal, Karishma Khadka, Gunanidhi Pokhrel, Jayesh Desai, Clinton Fernandes, Himanshu Kulkarni, Rajesh Bahadur Thapa
12:30–13:30	Lunch	
13:00–17:00	Group and field Work continued	Rajendra Shrestha, Madhav Dhakal, Karishma Khadka, Gunanidhi Pokhrel, Jayesh Desai, Clinton Fernandes, Himanshu Kulkarni, Rajesh Bahadur Thapa

Day 10 (Tuesday, 2 April 2019) – Venue: ICIMOD		
Module 5: Developing management and governance protocols		
Check-out from Hotel View Bhrikuti in the morning and check into Hotel Himalaya		
Time	Activity	Resource persons
09:00–09:15	Reflections from Day 9	Nawraj Pradhan, Chi H Truong
09:15–12:30	Step 5: Developing springshed management and governance protocols (15 mins tea break)	Nawraj Pradhan Madhav Dhakal, Rajan Kotru
12:30–13:30	Lunch	
13:30–15:00	Experiences from the HKH region Case studies and expert opinions	Sonam Chedon
15:00–15:30	Tea break	
15:30–17:00	Cross-learning from participants	Santosh R. Pathak, participants
18:00 onwards	Reception dinner at Hotel Himalaya	
Day 11 (Wednesday, 3 April 2019) – Venue: ICIMOD		
Module 6: Measuring and analysing impact		
09:00–09:15	Reflections from Day 10	Sanjeev Bhuchar, Chi H Truong
09:15–12:30	Step 6: Measuring and analysing impact from spring revival activities	Jayesh Desai
10:30–10:45	Tea break	
10:45–12:30	Step 6: Measuring and analysing impact from spring revival activities (continued)	Jayesh Desai
12:30–13:30	Lunch	
13:30–14:30	Communicating results and delivering an effective presentation	Sanhita Sahasrabudhe
14:30–17:00	Experiences and research findings Kailash Sacred Landscape – Nepal HI-AWARE, Teesta Basin – India WLE/DFAT Energy, Nepal ACWADAM case study	Pradyumna Rana, Nawraj Pradhan, Nabina Lamichhane, Jayesh Desai, Clinton Fernandes
Day 12 (Thursday, 4 April 2019) – Venue: Godavari Knowledge Park		
Module 6: Fieldwork		
Day commute from Hotel Himalaya and back		
09:00–09:15	Reflections from Day 11	Chi Huyen Truong, Sanjeev Bhuchar
09:00–13:00	Hands-on exercises for participants to develop a springshed management plan through a quick appraisal of the springsheds in the field sites	Madhav Dhakal, Pradyumna Rana, Karishma Khadka, Gunanidhi Pokhrel, Jayesh Desai, Clinton Fernandes, Rajendra Shrestha, Nawraj Pradhan
13:30–14:00	Lunch	

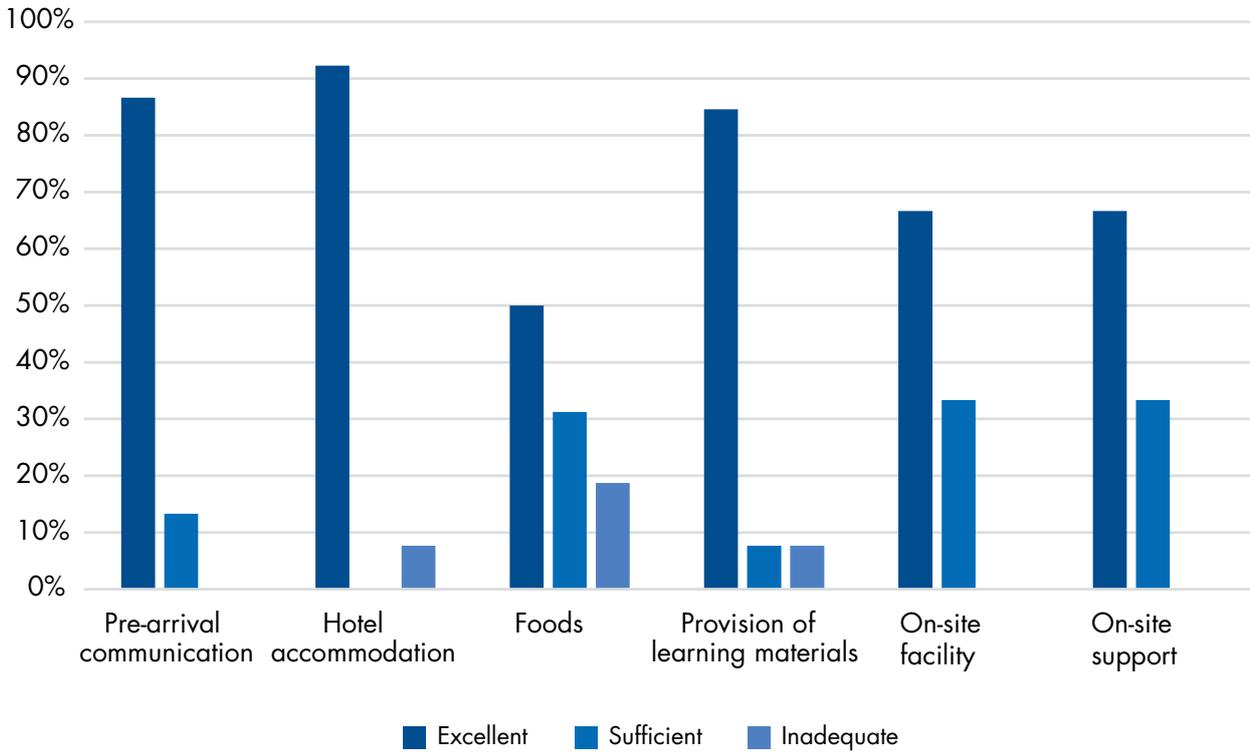
Time	Activity	Resource persons
14:00–16:30	Classroom at Godavari to prepare a springshed management plan Participants to develop a springshed management plan and understand water governance in Godavari Knowledge Park and surrounding areas	Madhav Dhakal, Pradyumna Rana, Karishma Khadka, Gunanidhi Pokhrel, Jayesh Desai, Clinton Fernandes, Rajendra Shrestha, Nawraj Pradhan
16:30	Depart for Hotel Himalaya	
Day 13 (Friday, 5 April 2019) – Venue: ICIMOD		
Module 7: Cross-learning and action planning		
09:15–09:30	Reflections from Day 12	Nawraj Pradhan
09:30–11:00	Panel Discussion: Springshed Management and Its Significance in the Context of Himalaya and Water Security Faculty, participants and external experts	Sanjeev Bhuchar, Brij Rathore, Ram Singh Thapa, Tripti Rai, Jayesh Desai
11:00–11:15	Tea break	
11:15–12:30	Group work, preparing for group presentations	
12:30–13:30	Lunch	
13:00–15:00	Participants' presentations and discussions on group work, including steps 5 and 6.	Sanjeev Bhuchar, Nawraj Pradhan, Madhav Dhakal, Jayesh Desai, Sanhita Sahasrabudhe
15:00–15:15	Tea break	
15:15–16:30	Evaluation The way forward: Integrating the content of the six-step methodology into teaching, research, practice, and policy Summary and synthesis preceded by a quick feedback session on how the training, knowledge and skill set would be applied by the participants in their respective geographies and thematic areas of work	Chi H Truong, Sanjeev Bhuchar, Santosh Raj Pathak, Sanhita Sahasrabudhe
16:30–17:00	Closing session and certificate distribution	Nawraj Pradhan, Philippus Wester

Annex 4: Training evaluation

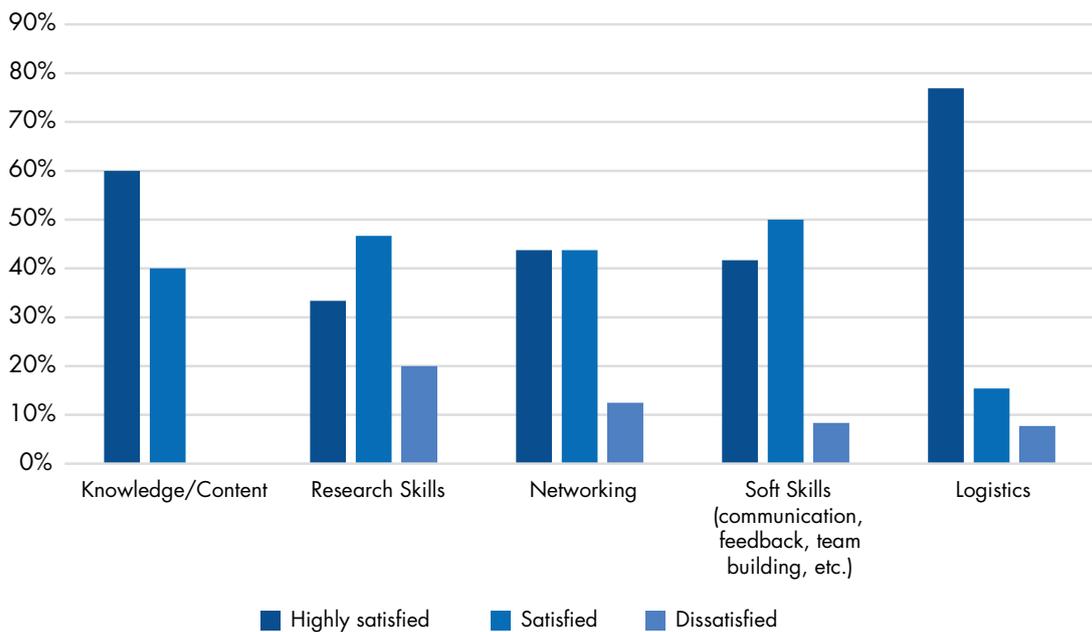




How would you rank the following organizational and logistical aspects of the training?



How would you rank your overall satisfaction of the following aspects of the programme?





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