

Regional Orientation Training on Data Compilation and Management

5–6 April 2016, Kathmandu, Nepal



Austrian
Development Agency



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 – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation 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-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



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the United Kingdom.

Internal Report

Kangchenjunga Landscape Conservation and Development Initiative (KLCDI)

Regional Orientation Training on Data Compilation and Management

5–6 April 2016, Kathmandu, Nepal

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Background

The Hindu Kush Himalayan region (HKH), endowed with rich biodiversity, is a living laboratory for scholars of all fields. Yet there is a deficit of data on this region. Nonetheless, a substantial amount of information is available — though scattered and often inaccessible — that can be used for the conservation and development of the HKH. This knowledge has been created by processing and analyzing existing data, which can be reused and reanalyzed to produce more knowledge. High quality data is key to producing accurate and meaningful information and decisions. Ideally, such data should be shared and cited, promoting scholarly collaboration and impact. However, in general, there is a lack of data sharing practices in the HKH, thereby preventing the utilization of data to their maximum potential. In this context, there has been an increased emphasis by policy makers and practitioners on managing, compiling, and sharing data produced through different research and development processes.

The International Centre for Integrated Mountain Development (ICIMOD), as an intergovernmental regional learning and knowledge centre, believes that timely access to high-quality data is essential to promote and accelerate the study of challenges faced by mountain ecosystems and their people; to enable independent research and scientific enquiries; to catalyze the development of knowledge products and innovations that improve the wellbeing and livelihoods of mountain communities; and to empower critical and urgent decision making in times of regional humanitarian crises. As a result, ICIMOD has established a regional database system (RDS) that acts as a central data repository for different thematic areas on the HKH and provides easy access to data through a web-based portal.

The Kangchenjunga Landscape Conservation and Development Initiative (KLCDI), facilitated by ICIMOD, is a collaborative transboundary programme that is being implemented by national partners in Bhutan, India, and Nepal. With the end of its preparatory phase in March 2015, the KLCDI entered its implementation phase in



January 2016. Its five-year implementation plan (2016 to 2020) places special emphasis on three core themes: i) sustainable livelihoods, ii) ecosystems management, and iii) regional cooperation for transboundary landscape conservation and development.

Currently, the KLCDI partners in the member countries are collecting baseline information on socioeconomic and ecological conditions in their selected pilot areas. In addition, there are plenty of data already collated by these partners while preparing programme documents such as country-level feasibility assessment reports as well as conservation and development strategies.

In this context, ICIMOD organized a two-day regional orientation training on 'data compilation and management' from 5 to 6 April 2016 at ICIMOD's office in Kathmandu. The training was designed for technical staff from implementing partner institutions that are working on collecting, collating, and managing data for ICIMOD's Kangchenjunga and other transboundary landscape programmes. The training consisted of intensive theory and hands-on sessions. Altogether, there were 16 participants.

Objectives

The main objective of the training was to build and strengthen the participants' capacities to compile and manage data for conservation and development processes.

Specifically, the training aimed to help participants to:

- Create metadata for datasets, feed the data into the RDS, and access it for use and reference.
- Manage socioecological data collected from household surveys using the appropriate software – Census and Survey Processing System (CSPPro)

Outputs

The major outputs of the training were:

- Enhanced capacity of participants in relation to documenting, preserving, and managing high-quality data to ensure accessibility and usefulness for decision-making processes.
- Skills for creating metadata for datasets, feeding data into the institutional repository, and accessing data for future use and reference.
- Enhanced capacity for managing data collected from household surveys.



Day 1: Tuesday, 5 April 2016

Opening Session

Welcome Address

The opening session started with the introduction of all participants. Dr Nakul Chettri (Programme Coordinator, KLCDI) gave the welcome remarks. He welcomed all participants and expressed ICIMOD's pleasure in hosting participants from Bhutan, China, India, Nepal, and Pakistan. Chettri then emphasized the importance of organizing the two-day regional orientation training on data management and compilation by highlighting the importance of data for researchers, policy makers, implementers, and various agencies. He also talked about ICIMOD's transboundary landscape programmes – with a specific focus on the KLCDI – and their importance in addressing environmental issues in the mountains. Chettri concluded his remarks by thanking the participants and wishing them success for the training period.



Pratikshya Kandel (Research Associate-biodiversity, ICIMOD) gave a brief overview of the training, including background, objectives, and expected outputs. She explained the long-term environmental and socioecological monitoring framework designed and developed by ICIMOD for its regional programmes on transboundary landscapes, which has played an important role in filling biological and socioecological data gaps in the HKH region.

Dr Eklabya Sharma (Director Programme Operations, ICIMOD) re-emphasized the importance of data in getting people interested in the HKH. He pointed out that data is more effective than words in convincing people about various ideas. He then reiterated the challenges in collecting and collating data from the region. He also emphasized the need for a multidisciplinary, systematic approach towards data collection and management. Sharma concluded by highlighting the importance of each and every partner organization in making ICIMOD's database robust enough to enable stakeholders to observe the changes and progress in the HKH region over a given period of time.



Dr David Molden (Director General, ICIMOD) dropped by to wish the participants success. In his remarks, he expressed great pleasure in welcoming participants that represent various transboundary landscape initiatives from different countries. He mentioned that plenty of data has already been collected from the HKH, for they have been studied over a very long period. However, the data is not properly managed and somewhat inaccessible. Molden concluded by mentioning that the training was quite timely and relevant, as organizing and managing data through a centralized platform is crucial in making it accessible for decision-making processes.

Technical Session I

Concepts of database: Mr Kiran Shakya, Remote Sensing Database Specialist, ICIMOD

The technical session started with Kiran Shakya's presentation on concepts of database, during which he covered various topics such as some types and sources of data, best practices for managing tabular and spatial data, and the advantage of using a database management system. He introduced the Microsoft Structured Query Language (SQL) Server, a relational database management system, and the use of SQL to create databases/tables, inject data into tables, and query them. He added that database servers are good platforms to enable multiple users to search and update records using SQL queries. At the same time, high level of data security can also be achieved through this method. A hands-on exercise followed the presentation. The exercise asked participants to use the Microsoft SQL Server to write queries and execute them.

Introduction to metadata: Sameer Bajracharya (Research Associate-GIS, ICIMOD)

Sameer Bajracharya gave an overview of metadata management. In his presentation, he covered the key concepts, importance, and various components of metadata. He explained different global standards of metadata, placing special focus on ICIMOD's standard. He then proceeded with a few examples of metadata using ICIMOD's template. A hands-on exercise followed the presentation, during which participants used the template to create their own metadata.

Standards for biodiversity data: Sudip Pradhan (Programme Coordinator, Regional Database Initiative, ICIMOD)



Sudip Pradhan gave a presentation on standards for biodiversity data. During his talk, he covered the Darwin Core format, a standard that is used globally for sharing information on biological diversity. He also gave an overview of the Global Biodiversity Information Facility (GBIF), an international organization focused on making biodiversity data available via the Internet. Pradhan explained how the data provided by various institutions around the globe is made available through the GBIF portal. He ended by giving an example of a GBIF metadata template.

Introduction to the Regional Database System: Sudip Pradhan

Sudip Pradhan gave an overview of ICIMOD's regional database system (RDS). He explained that the RDS provides the data management and sharing mechanisms essential for the efficient and effective

use of data. He also added a few points on the regional database framework and major components of the RDS. Pradhan illustrated how data can be shared and accessed using web services and how the RDS can be used to find data by initiative, programme, or subject. Explaining ICIMOD's data policy, he ended his presentation with a hands-on exercise for learning how to use the RDS.



Day Two: Wednesday, 6 April 2016

Technical Session II

Managing data from household surveys using CSPro software: Sabarnee Tuladhar (Research Associate-statistics, ICIMOD)

The second day was dedicated to theoretical and hands-on sessions on data management using CSPro.

Sabarnee Tuladhar was the main resource person for the second day. She started her presentation with the introduction of CSPro, a software tool that is used to manage data collected from household surveys. She emphasized the fact that the program has been widely used since 2000 and is used in over 160 countries. Underscoring its importance in ensuring data quality, she explained the benefits of using CSPro over similar software.

Tuladhar gave a general overview of CSPro, covering details on various components like the dictionary, form, data file, and application. She also talked about ways to create data-entry templates. Balancing theory with hands-on exercises, she demonstrated methods to create a data-entry mask, make a new data dictionary, and record data. She also explained double data entry, which is a verification method to reduce data entry errors. Tuladhar provided guidelines for exporting data from CSPro into formats for other software, including SPSS, Stata, and R. She illustrated how to analyze data using CSPro. She added, however, that this software is suitable only for simple analyses and not preferable for complex analyses.

Concluding Session

Way forward: Nakul Chettri

Nakul Chettri reiterated the importance of collecting and managing data from the HKH region. There is already a huge amount of data collected from the region, but it is not organized properly. In this context, Chettri emphasized the importance of reorganizing the available data and making it accessible. Therefore, the training programme was as an important platform, in his opinion, to bring partners together to understand the significance of data management and to showcase ICIMOD's data repository. Chettri concluded by stressing the importance of managing data on ICIMOD's standard format for it to be comparable, to see the progress or changes over a period of time.

Remarks from country representatives

The representatives from the participating countries – Bhutan, China, India, Nepal, and Pakistan – made their concluding remarks towards the end. They thanked ICIMOD for organizing the training and providing a platform for learning basic concepts in database and data management. They acknowledged the informative nature of the training and added that CSPro would be useful in the future. Overall, the participants said that they would implement what they had learned during the training in the projects that they were working on.

Vote of thanks

Basant Pant thanked the participants, on behalf of the KLCDI's programme coordinator, for their active participation during the training. He also acknowledged the important role of the focal persons of partner institutions in supporting the training from the beginning. Finally, he thanked ICIMOD's supporting team for their contribution.

Pre- and post-training assessment results

Pre- and post-training assessments were conducted to determine the impact of the training in terms of the participants' knowledge on database management. Participants were asked to answer various questions with the

following responses: no idea, basic idea, general working knowledge, and expert knowledge. The questions were grouped into the following categories: concept of database, Microsoft SQL Server, concept of metadata, GBIF standard data format, the regional database system, and CSPro.

Figures 1 and 2 depict the changes in the participants' knowledge on database management. Initially, none of the participants reported that they had 'expert knowledge' on any of the topics. All participants reported that they had no idea about CSPro. After the training, however, 43 per cent said that they had expert knowledge on CSPro and another 43 per cent reported that they had general working knowledge. Similarly, there was a considerable rise in the number of participants (7 to 64 percent) who reported that they had general working knowledge on the regional database system. Regarding metadata, 36 percent of the participants said that they had gained expert knowledge as a result of the training. Similarly, after the training, 57 per cent said that they had general working knowledge on the GBIF standard data format, compared to none before the training.

Figure 1: Pre-training assessment of the participants

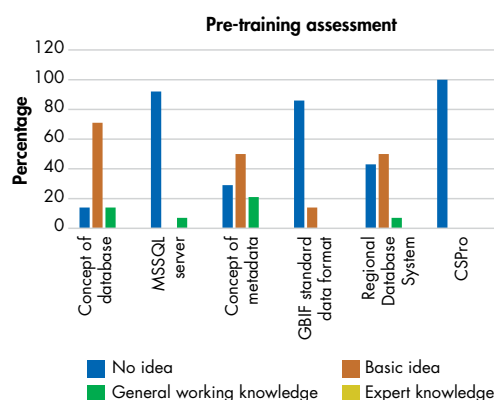
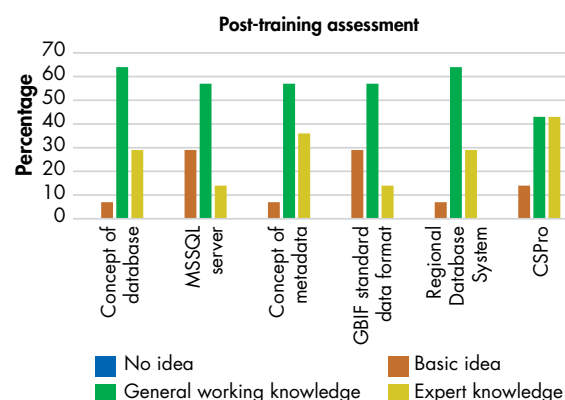


Figure 2: Post-training assessment of the participants



Annex 1: Programme Outline

Monday, 4 April 2016 – Arrival and check-in of all participants in Kathmandu

Day 1: Tuesday, 5 April 2016

Opening Session

09:00–09:15	Registration	Ms Rekha Rasaily
09:15–09:30	Participant's introduction	All
09:30–09:45	Welcome remarks including the importance of KLCDI in the transboundary landscape conservation and development	Dr Nakul Chettri
09:45–10:00	Background, objective and expected outputs of the programme	Ms Pratikshya Kandel
10:00–10:15	Remarks	Dr Eklabya Sharma
10:15–10:25	Remarks	Dr David Molden
10:25–10:45	Photo session and refreshment	

Technical Session I: Understanding the concept of database

10:45–11:15	Presentation on concepts of database	Mr Kiran Shakya
11:15–11:45	Hands-on-exercise on database	" "
11:45–12:15	Introduction to metadata	Mr Sameer Bajracharya
12:15–12:45	Hands-on-exercise on metadata	" "
12:45–13:45	Lunch break	
13:45–14:15	Standards for biodiversity data	Mr Sudip Pradhan
14:15–13:45	Hands-on-exercise on data preparation	Mr Sudip Pradhan, Mr Kiran Shakya, Mr Sameer Bajracharya
15:15–15:45	Tea break	
15:45–16:15	Introduction to Regional Database System (RDS)	Mr Sudip Pradhan
16:15–17:00	Hands-on-exercise on RDS	" "

Day 2: Wednesday, April 2016

Technical session II: Managing data from household surveys using CSPRO software

09:00–09:15	Introduction to CSPRO software	Ms Sabarnee Tuladhar
09:15–10:00	Creating data mask in CSPRO– data dictionary	" "
10:00–10:30	Creating data mask in CSPRO– logic	
10:30–10:45	Tea break	
10:45–11:00	Guidelines for creating data masking	
11:00–12:00	Hands on exercise in creating data mask	" "
12:00–12:30	Data entry guidelines, Hands on exercise–Data entry	" "
12:30–13:30	Lunch	

13:30–14:00	Hands on exercise–Data entry	" "
14:00–14:15	Double data entry–Training	" "
14:15–15:00	Hands on exercise–Double Data entry	" "
15:00–15:15	Data export from CSPRO (presentation and practical)	
15:15–15:30	<i>Tea break</i>	
15:30–16:00	Analysis using CSPRO	

Concluding session

16:00–17:00	Way forward	Dr Nakul Chettri
	Remarks	Representatives from countries
	Vote of thanks	Mr Basant Pant
18.00 onwards	Reception Dinner	

Annex 2: List of participants

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