

Water and Erosion Studies of PARDYP NEPAL  
**WATER DEMAND AND SUPPLY SURVEY**



People and Resource Dynamics in Mountain Watersheds  
of the Hindu Kush-Himalayas



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Water and Erosion Studies of PARDYP Nepal

# The Water Demand and Supply Survey

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**People and Resource Dynamics in Mountain Watersheds  
of the Hindu Kush-Himalayas**

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## **FOREWORD**

Water is crucial for sustaining life. In the middle mountains of the Hindu Kush-Himalayas water is often in short supply during the winter months and in excess during the monsoon.

The Water Demand and Supply Survey carried out in the Jhikhu Khola and Yarsha Khola watersheds provides insights into community management issues of an increasingly scarce and increasingly polluted resource. In terms of water, the survey area is typical of much of the middle mountains of Nepal and reflects issues and problems faced by thousands of families.

Improved water supply management is crucial, particularly in the context of expanding population and increasing per capita consumption. But proper management means first knowing about needs and farmers' priorities and strategies. We can learn much by understanding how families cope with current shortages, and how they respond to increasing shortages. Equally demand management is important, as agriculture intensifies so demand for water increases. At the same time water quality is becoming an issue, both in terms of microbiological contamination and pollution from ever increasing use of agro-chemicals.

This survey clearly shows trends in water use patterns and how changing scenarios will impact on water availability; it will be used to link hydrology, climate, and land use in an attempt to further understand these complex interactions and processes. Similar surveys have been conducted in the PARDYP watersheds in China, India, and Pakistan, and these will allow a comparison of water issues throughout the middle mountains of the Hindu Kush-Himalayas.

Roger White  
Regional Coordinator  
PARDYP/ICIMOD

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## **SUMMARY**

Water remains one of the major issues in the middle mountains of the Hindu Kush-Himalayas as in this region people depend to a large extent on rainwater for their supply, and rainfall is highly seasonal. In Nepal, the middle mountain area is the most populated region. Around 85% of the annual rainfall is expected during the monsoon season, which lasts for about four months from June to September, and the major concern at this time is flooding and surface erosion. During the remaining eight months people are consistently faced with problems of water shortage for both domestic and agricultural purposes.

This publication describes the results of a detailed survey of the water demand and supply situation in two watersheds in the middle mountains of Nepal. The survey was designed to discover people's perceptions, requirements, and priorities, as well as to look at the existing situation. The survey revealed the most critical sites within the watersheds and the major concerns of the local residents. The comparison between the two watersheds is particularly interesting in view of their position in relation to Kathmandu, a major market opportunity for vegetable farmers.

Various field programmes were initiated by the People and Resource Dynamics of Mountain Watersheds in the Hindu Kush-Himalayas (PARDYP) project in response to the survey results. These include a closer investigation of water quality aspects of public water sources with the aim of identifying, testing, and recommending simple methods to assess water quality; a training course on roof water harvesting in collaboration with other projects; and implementation of test and demonstration sites for surface runoff harvesting and alternative irrigation methods within the watersheds.

The main results are summarised in this brochure, details and illustrations are provided on the enclosed CD-ROM.

## **ACRONYMS AND ABBREVIATIONS**

FAO	Food and Agriculture Organization (United Nations)
HKH	Hindu Kush-Himalayas
IDRC	International Development Research Centre (Canada)
ICIMOD	International Centre for Integrated Mountain Development
PARDYP	People and Resource Dynamics in Mountain Watersheds of the Hindu Kush-Himalayas project
RRA	rapid rural appraisal
RWSSSP	Rural Water Supply and Sanitation Support Project
SDC	Swiss Agency for Development and Cooperation
VDC	village development committee

## **GLOSSARY**

bari	rainfed agricultural land
chauri	cross-breed between yak and zebu cattle
gagri	local water vessel
khet	irrigated agricultural land



## ABOUT THE CD-ROM

The enclosed Water Demand and Supply CD-ROM is an integral part of this publication. It contains the detailed results and information from the surveys together with additional background information and photographs illustrating the issues.

The CD-ROM is divided into the following sections.

- **Introduction** – provides a background to the research work conducted under PARDYP across the region and introduces the collaborators and supporters of the project
- **Methodology** – provides an insight into the methodology of the survey including a discussion of georeferencing with the help of orthophotos, and the full questionnaires in Nepali and English
- **Yarsha Khola watershed** – provides the results from the survey in the Yarsha Khola watershed including a report in \*.doc format
- **Jhikhu Khola watershed** – provides the results from the survey in the Jhikhu Khola watershed
- **Comparison** – the two watersheds are compared in terms of agricultural water use, domestic water use, and other aspects
- **Follow-up** – the proposed follow-up is discussed with a few slides
- **Conclusion**
- **Databases** – all the data from the survey is included in the form of an MSAccess database and shape files

## Minimum Requirements

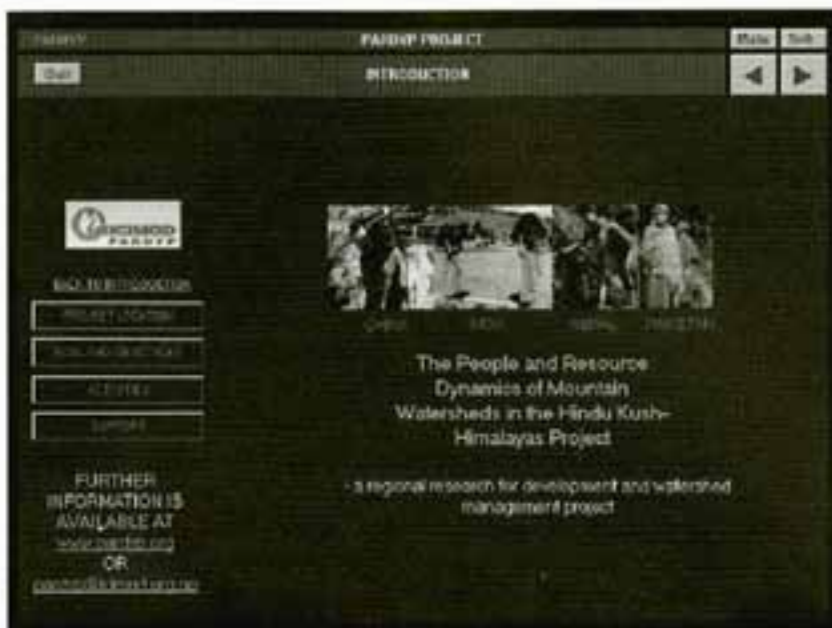
Windows 95 or higher, Pentium 90MHz processor or higher, 16MB RAM, 190 MB free hard disk space (for typical installation), 4 speed CD-ROM drive, SVGA monitor with thousands of colours at 800x600 resolution, sound card and speakers.

## How to install the CD-ROM

Set the display to at least 800x600 (small fonts) and high colour (16 bit) (minimum). At this resolution the programme takes up the entire screen. If your display is set to less than 800x600 you will not be able to view the hypermedia document properly. To install, insert the CD-ROM in your CD-ROM drive. Using Windows Explorer, select the drive that corresponds to your CD-ROM drive. In the root directory find the file SETUP.EXE and double-click it. Follow the on-screen instructions. You have two setup options: Typical and Custom. Typical installs all the files onto your hard drive, it runs much faster but requires approximately 190 MB of free space (CD-ROM no longer required to run the programme); Custom allows the user to leave the application files on the CD and only requires 25 MB of free space. To run other programmes at the same time, press CTRL+ESC.

## How to navigate in the CD-ROM

All pages of the CD-ROM can be accessed through mouse clicks. Different buttons perform different actions (Figure).



Screen capture of the enclosed CD-ROM

Quit	QUIT	closes the programme and leaves the CD-ROM
Main	MAIN	returns to the main page from which all other pages are directly accessible
Sub	SUB	returns to the sub page from which all pages of this section are accessible
◀	back	moves one page back
▶	forward	moves one page forward

Hyperlinks (e.g. [BACK TO METHODS](#)) perform specific actions as described on the link. The same is true for normal buttons.

NOTE: the use of data from this CD-ROM must be acknowledged in any publication and one copy of the publication sent to:

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