

# THE WATER DEMAND AND SUPPLY SURVEY

## Introduction

Water security for the entire global population is one of the major challenges for the 21<sup>st</sup> century. Even in areas that are primarily known for flooding and erosion, water scarcity is becoming a problem. In many parts of the Hindu Kush-Himalayas (HKH), both water quantity and water quality issues are of increasing concern. The pressure on water resources is increasing as the population grows and needs more water for both household and agricultural use. Rising temperatures and more extreme events due to climate change might also add to the pressure on water resources in the future, although the pressure might be reduced if there is increased precipitation and sound management systems are employed (FAO 1995). Water quality from the micro to meso watershed scale is being reduced as a result of the impact of more intensive farming with increased use of chemical fertilisers and pesticides. The influence on big river systems in the region is not yet well understood, but the problems in local watersheds are already clear: the great majority of the population are dependent on agriculture but as productivity is raised local water sources are more likely to become polluted, and local sources are the only means of getting water.

The People and Resource Dynamics of Mountain Watersheds in the Hindu Kush-Himalayas Project (PARDYP) is a regional 'research for development' project active in watershed and natural resources management in five pilot watersheds in China, India, Nepal and Pakistan. Aware that water is likely to be one of the major issues in the future, PARDYP started a comprehensive assessment of water resources. PARDYP Nepal is focusing on the Jhikhu Khola and Yarsha Khola middle mountains watersheds for its activities. In these watersheds, interlinked approaches were used to obtain a comprehensive view of water related issues. They included

- **a household survey of the present water demand and supply situation** – the survey focused on the constraints and issues related to water as perceived by the local residents;
- **a survey of public water sources in the watersheds** – with the support of the local authorities, a selected number of springs, taps, and wells was mapped and physical parameters were measured; the local residents selected the locations to be monitored, and the field staff responsible for the mapping added some locations of special interest;
- **regular monitoring of meteorological and hydrological parameters** – a measurement network of hydrological and meteorological stations is regularly monitored in the watershed, the monitoring network is described briefly in Merz et al. (in press). The data is currently being analysed according to different aspects. All data is available in the form of a yearbook for each watershed (PARDYP 2002a; PARDYP 2002b).

The overall aim of these activities is to contribute towards a balanced, sustainable, and equitable development of mountain communities and families in the Hindu Kush-Himalayan region, the aim of the PARDYP project. The water-related activities focus on the generation

and exchange of information on water as a resource and its role in land degradation, and on the identification and testing of options to support and improve water management decisions.