

Himalayas – Water for 1.3 billion people



Water is a finite resource, essential to sustain life, development and the environment. Water resources can be harnessed not only for overall economic growth, but also to reduce poverty and improve the livelihood of communities in the Hindu Kush-Himalayan region. The quality and flow of water resources is determined mostly by climate and the management of land resources. Traditional management of both water supply and water hazards is now being questioned as a result of the impacts of global climate change. Planning and management of the water sector in the region is not well linked with planning and management of other closely related sectors like land use. A holistic approach is required to manage water resources and ensure environmental security. ICIMOD is focusing on upstream and downstream linkages, and has initiated assessments of the socioeconomic benefits of sharing flood information and of the benefits of developing hydropower, with a regional perspective. ICIMOD is also developing a framework for the payment of environmental services including water, in the region.

Principal rivers of the Himalayan region – basin statistics

River	River		River basin			
	Annual mean discharge m³/sec ^a	% of glacier melt in river flow ^b	Basin area (km²)	Population density (pers/km²)	Population x1000	Water availability (m³/person/year)
Amu Darya	1,376 ^a	not available	534,739	39	20,855	2,081
Brahmaputra	21,261 ^a	~ 12	651,335	182	118,543	5,656
Ganges	12,037 ^a	~ 9	1,016,124	401	407,466	932
Indus	5,533	up to 50	1081,718	165	178,483	978
Irrawaddy	8,024	not available	413,710	79	32,683	7,742
Mekong	9,001 ^a	~ 7	805,604	71	57,198	4,963
Salween	1,494	~ 9	271,914	22	5,982	7,876
Tarim	1,262	up to 50	1,152,448	7	8,067	4,933
Yangtze	28,811 ^a	~ 18	1,722,193	214	368,549	2,465
Yellow	1,438 ^a	~ 2	944,970	156	147,415	308
Total					1,345,241	

^a Data were collected by the Global Runoff Data Centre (GRDC) from the following most downstream stations of the river basins: Chatly (Amu Darya), Bahadurabad (Brahmaputra), Farakka (Ganges), Pakse (Mekong), Datong (Yangtze), Huayuankou (Yellow)

^b Estimation of the meltwater contribution is difficult and varies in an upstream and downstream situation; approximates are given here.

Sources: IUCN et al. 2003; Mi and Xie 2002; Chalise and Khanal 2001; Merz 2004; Tarar 1982; Kumar et al. 2007; Chen et al. 2007

Note: The hydrological data may differ depending on the location of the gauging stations. The contribution of glacial melt is based on limited data and should be taken as indicative only.



The Hindu Kush-Himalayan region* and its major river basins

*The geographic term 'Hindu Kush-Himalayas' is not very precise. ICIMOD's target area includes the Karakorum, the Pamir and other neighbouring ranges. Some of the analyses encompass impact areas that include the watersheds of the rivers originating in these ranges.

The Himalayan region has the largest reserves of water in the form of ice and snow outside the polar regions and is the source of ten of the largest rivers in Asia. The river basins are transboundary and the rivers meet the needs for drinking water, irrigation, hydropower, fishery, inland navigation and others for more than 1.3 billion people (2003 dataset) living downstream. The river basins also support wetlands and varied habitats that contribute to the maintenance of biodiversity that benefits all.