

RIVER BASIN

KARNALI

[NEPAL]

SCHEDULE A
ASSESSMENT OF RIVER BASINS (RBs) IN SOUTH ASIA

S.No.	Details		Remarks	
Physical features - General information				
1	Total area (km ²)	41179	Taken from various sources and water resource strategy	
2	Geographical location of place of origin	Nepal (Higher Himalayas) and Tibet (south of Mansarovar and Roka lakes)	Taken from various sources and water resource strategy. Also see attached basin map.	
3	Population (million)	1.8	Taken from the district profile published by . The figures have been adapted from the district information. In some cases the basin boundary fall in two districts and therefore the figures could vary to some extent.	
4	Area covered (%)	Nepal	94	Taken from water resource strategy
		India	-	
		China	6	

Hydrological and landuse features				
5	Average rainfall (mm)		1775	Due to topographical variation within the basins precipitation varies substantially from one location to another. The figures have been taken as average of high and low rainfall records of two stations representing the basin.
6	Temperature (°c)	Min.	2.8 (average)	Temperature also varies within the basin due to topographical variation. The climate within the basin changes from tropical in the plains to alpine in the high himalayas. We have taken average lowest and average highest temperature within the basin.
		Max.	26.2 (average)	
7	Average annual yield in (m3)		44.15 billion	Average annual water yield has been calculated based on the information given in various sources including feasibility reports and others.
8	Major tributaries		Seti river, Bheri river, Mugu karnali, Humla karnali, Tila river and Sinja khola	
9	Cropping pattern		Paddy, maize, wheat	due to topographical variation cropping pattern varies considerably from lower areas to the upper areas of the basin. We have taken major crops as reported in the district profile and feasibility reports of hydropower and irrigation projects.

10	Cultivated area (ha)	294342	Taken from the district profile.
11	Non-cultivated area (ha)	153356	
Ecosystem features			
12	Agro climatic zones	Alpine, tropical, sub-tropical, temperate, cool temperate and mild temperate	Taken from district profile.
13	Major sub ecosystem (zoogeographical zones)	There are multiple ecological regions within the basin. The basin is also known for suitable habitat for river dolphin and gharials.	
14	Major soil type	NA	Soil types vary from
15	National parks, sanctuaries, lakes, wet lands	Khaptad national park, She-Phoksundo national park, Royal Bardia wildlife reserve, Royal Dhorpatan hunting reserve	ACAP, Langtang National Park, Makalu Barun, National Park, Sagarmatha National Park, Kanchanjanga Conservation Area are in the high himalayas. Sukla Phant Wildlife Reserve, Bardia Wildlife Reserve, Chitawan National Park and Kosi Tappu Wild life Reserve are in the lower part of the basins.
16	Stretches in km	507	

Current status of the resource development and potential for				
17	Water availability	Per capita	23733 m3	Calculated on the basis of population and the total flow
		Per hectare	10721 m3	Calculated on the basis of basin area within Nepal and the total flow
		Environmental flows	NA	
18	Structures	Major dams / barrages	--	Taken from Involuntary Displacement and Livelihood: An analysis of Nepal's proposed five high dam projects and various other reports.
		Proposed dams	Karnali-Chisapani Multipurpose project	
		Inter basin transfer system	None	
19	Live storage	Major dam	NA	
		Proposed dam	16.2*10 ⁹ m ³	
20	Command area of major dam		NA	
21	Agencies functioning in the basin	Forest department, watershed management department, wildlife, irrigation, drinking water		

Key issues and supporting features				
22	Key issues		Erosion, GLOF, extreme events	Major environmental issues are seen in all basins. Similarly, disputes about sources, water sharing, urban river pollution, water allocation, depleting groundwater resources in the valleys have become the key water issues in various places within the basins.
23	Enabling instruments		The laws and acts are for all basins.	
24	River basin organisations		None	All governmental departments and orgnaizaion related to water and environemnt are present in the basins. In additon, there are several NGOs and INGOs working in the area. There is no River Basin Organization (RBO) in Nepal to take up basin management activities. However, the basin and its resources are managed by agencies as mentioned.

25	Current use of water			Water is used for power generation, navigation, fishery, aquatic life (wildlife) reserves
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SCHEDULE B
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Nil

SCHEDULE C
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Nil