

RIVER BASIN

GHAGARA

[INDIA]

SCHEDULE A
ASSESSMENT OF RIVER BASINS (RBs)

Sr. No.	Details	Response
1	Physical Features - General Information	
1.1	Name of River basin (also indicate regional names.	Ghagara. Gogra or the Karnali in Tibet and upper Nepal. (The river flows south through Nepal as the Karnali River)
1.2	Relief Map and Index Map of RB with Country/ State/ Province boundary marked to be attached.	Refer Annexure 1 _ (http://en.wikipedia.org/wiki/Image:Ghagra-River.png)
1.3	Geographical location of the place of origin (Country/District.)	It rises in the southern slopes of the Himalayas in Tibet, at an altitude of about 13,000 feet (3962 metres) above sea level.
1.4	Area (in Sq. Kms.),	Its total catchment area is 127,950 sq km of which 45% is in India. It flows to about 917 kilometres before its confluence with Ganga
1.5	Population (in Millions); Name of population centers/ Cites (duly marked on the map: refer 1.2) having Population -	Important towns on the river include Faizabad-Ayodhya, Dohrighat, and Tanda.
	(a) More than 0.5 Million - 1 Million	
	(b) More than 1 Million – 10 Million	
	(c) More than 10 Million	
1.6	Approximate areas of upper regime, middle regime and lower regime;	Course of the river: rising in the Himalayas, SW Tibet region of China, and flowing generally S through Nepal (where it is called the Karnali) and SE through Uttar Pradesh state to join the Ganges in Bihar state, in India

1.7	Country and States (Province) in which the basin lies (indicate % area covered);	The river flows through Tibet, Nepal and India.
2	Hydrological and Land use Features:	
2.1	Average annual rainfall (in mm);	
2.2	Maximum-minimum temperatures in Degree Centigrade	
2.3	Average annual yield (discharge) of water in Cubic Meter and the average yield for last past five years	
2.4	Major tributaries	Rapti, Little Gandak, Sarda and Sarju are the major tributaries of this river
2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages-Convert into Table (a.) Agriculture,	
	(b.) Industries,	
	(c). Domestic,	
	(d). urban,	
	e). environmental flows.	
2.6	Major cropping pattern	
2.7	Cultivable area under irrigation	
2.8	Cultivable area not under irrigation	

2.9	State other Water Uses- eg. Navigation, power, recreation etc.	The river is one of the most important commercial waterways of Uttar Pradesh.
3	Ecosystem Features	
3.1	Agro-climatic zones	Major crops include wheat, paddy, barley, potato, sugarcane, gram, maize, jwar, mustard and oil seeds.
3.2	Major sub ecosystems (zoogeographical zones)	
3.3	Major soil types	Mainly alluvial flood plain soils
3.4	National parks/sanctuaries, lakes, wetlands, etc.	
3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	Does not form a delta, but joins Ganga at Chapra district in Bihar
4	Water Quality	
4.1	Prevailing water quality standards (e.g. Class I, II, III.etc, indicating permitted uses)	Ghagara River Water status near Chapra (near its confluence with Ganga). Ph: A, DO: A, BOD: A, Conductivity: A, E Coliform: C. (Source: Central Pollution Control Board of Government of India. http://www.cpcb.nic.in/oldwebsite/Watdata2002/gangacri.htm)
4.2	Stretches (along the River) in Kms. with water quality classes indicated.	
4.3	Sources of Pollution, with data indicating quantum and/or severity.	
4.4	Prevailing abatement techniques e.g: ETP, STP, legislation, etc.	
5	Current status of the resource development & potential for development	

5.1	Water availability:	
	a. Per capita water availability (in lpcd)	
	b. Per hectare water availability (in Cubic meters for cultivable command area):	
	c. Availability of environmental flows (Current reserve, if any):	
	d. Availability of ground water/ Average annual ground water abstraction/recharge.	
5.2	Structures:	
	a. Major dams/barrages (with utilization categories):	
	b. Proposed dams:	
	c. Live storage of major dams:	
	d. Live storage through proposed dams:	
	e. Inter basin transfer systems:	Kosi Ghaghra link has been planned. (Source: National water Development Authority)
	f. Any Other:	
5.3	Command area of major dams	
5.4	Agencies functioning in the basins:	
	a. Public agencies/ CSOs which construct/ implement the infrastructures projects:	
	b. Private agencies/ CSOs involved in infrastructure development	
6	Existence of National/State/Provincial Laws or Notifications relating to water- Management / use/development/opportunity	

	for private sector participation or for privatization of water resources	
7	Key Issues:	1. Deforestation in the upper reaches has significantly increased the sediment load on the Ghaghara (and the downstream Ganges). .The Gangetic dolphin or <i>susu</i> , frequently sighted on the Ghaghara in earlier times, is rare today, possibly due to difficulties in navigating shallow waters 2. Flood Management is a key issue in Indian states like Bihar and UP
8	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	Water sector Improvement Project in the Uttar Pradesh where it is planned to set up a Ghaghara Rive Authority can be a good starting point. Comprehensive Flood Management Plan for Ghaghara has been prepared by the Ministry of Water Resources This can also serve as an opportunity to introduce IWRM. (http://wrmin.nic.in/writereaddata/linkimages/CHAPTER%20-%20153404628491.pdf)

SCHEDULE B
ASSESSMENT OF RIVER BASINS ORGANIZATIONS (RBOs) IN SOUTH ASIA

Sr. No.	Details	Response
1	Legal / Political Mandate	
1.1	Is there any RBO? If yes, Give Name.	The Uttar Pradesh Irrigation Department has plans for setting up Gomati Ghaghra Basin Authority as a part of the Water Sector Restructuring Project.(more details: http://irrigation.up.nic.in/wsrp_project.htm)
1.2	How has it been constituted? (Statutory/ Voluntary/ Any other form).	Statutory body, a part of the Uttar Pradesh Irrigation Department. (through a project supported by the World Bank)
1.3	State objectives and organizational structure of the RBO in outline & enclose brochures	Program to be implemented through series of overlapping and interlinked project phases, in a period of 12-15 years; WB supporting policy and institutional reforms, capacity building and infrastructure investments in the sector, total cost being (Usm\$): 1300.00. Stated Objectives: Increase productivity through effective allocation of water resources amongst sectors by integrated and environmentally-sustainable river basin planning, development and management process, including conjunctive use of surface and ground water. Establishment of water sector apex institutions; State Water Planning Office (SWPO), State Water Resources Data and Analysis Center (WRDAC) and State Water Tarrif Regulatory Commission (WTRC). Setting up of Ghaghra-Gomti river basin entity.

		Preparation and use of environmentally sustainable river basin development plan for the selected basins
1.4	Functioning level of the RBO	
1.5	What are the major activities carried out by the RBO since inception?	
1.6	What are the proposed activities of the RBO?	
1.7	Details of Contact person/s (Name, designation and contact numbers, address, & emails).	
1.8	Presence of a regulatory framework wherein national or regional supra basin authority regulates the functioning of the RBO.	
1.9	Legal/political mandate wherein stakeholders can appeal for redress/decision and conflict resolution	No
1.10	Does the RBO have an appellate authority?	No
1.11	Is the RBO an autonomous body?	

1.12	Is it regulated by a supra basin authority, if so, how?	No
1.13	Is the RBO authorized to raise capital for management and/or implementation in open market ?	\no
1.14	Does the RBO receive direct budgetary grants? (From Govt./ Statutory Bodies/ Public donations/ Any Other Agencies.)	Yes, through World Bank support
1.15	Nature of mandate for delegation of powers and/or functions (within RBO's constitution) to the lowest possible scales so as to encourage stakeholder participation. (Kindly elaborate the mode of delegation).	
1.16	Policy of the RBO on – (i) Water allocation between users/sectors/sub-basins; and	
	(ii) Procedures and processes for determining the above.	
1.17	Presence of Trans-boundary Water Agreement or Treaty in case of a trans-boundary basin,	
1.18	Presence of a 'Tribunal' appointed in case of intra basin or inter basin	
1.19	Is the RBO responsible for preparing Basin Management Plan.	Yes, though the process has not started as yet
2	Processes of community/stakeholder participation in the functioning of the RBO	

2.1	Are the stakeholders from the basin included in the governing body of the RBO ?	Not clear , but one of the stated objectives of the Sector reform is : Improvement in basin stakeholder income levels in pilot areas Improvement in equity in distribution of incomes and level of stake holder's participation in pilot areas
2.2	Elaborate the nature and frequency of public consultation initiated by the RBO.	
2.3	Elaborate efforts at outreach/communication by the RBO.	
2.4	Elaborate efforts made for creation of participatory platforms at minor/major tributary or watershed levels for encouraging participation .	
2.5	Interaction of the RBO with organizations working in water management at different watershed/ micro basin, sub-basin or basin level	
2.6	Stakeholder participation sought by the RBO for preparing Basin Management Plan	
3	Conflict resolution and negotiations	
3.1	Involvement of the RBO in negotiations between stakeholders at various levels through an appellate authority mentioned above;	
3.2	Negotiation and participation encouraged at mini/micro basins for consensus building and/or conflict management.	

SCHEDULE C
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nil

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