

RIVER BASIN

MAHANADI

[INDIA]

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

Sr. No.	Details	Response
1	Physical Features - General Information	
1.1	Name of River basin (also indicate regional names used in different countries, states along its course);	Mahanadi
1.2	Relief Map and Index Map of RB with Country/ State/ Province boundary marked to be attached.	Refer Annexure 1
1.3	Geographical location of the place of origin (Country/District)	The Mahanadi rises in Raipur District of Chhattisgarh (Source- http://en.wikipedia.org/wiki/Mahanadi_River)
1.4	Area (in Sq. Kms.),	1,41,589 Sqkm (Source-Water Sector at a Glance 2006)
1.5	Population (in Millions); Name of population centers/ Cites (duely marked on the map: refer 1.2) having Population -	34,21,612-River basin population(Source-\River Basins of Orissa.htm)
	(a) More than 0.5 Million - 1 Million	Sambalpur-935,613 (2001) Bhuvaneshwar-Cuttack-- http://en.wikipedia.org/wiki/Sambalpur)
	(b) More than 1 Million – 10 Million	
	(c) More than 10 Million	
1.6	Approximate areas of upper regime, middle regime and lower regime;	There are four well defined physical regions in the basin viz., i) The Northern plateau, ii) The Eastern ghats, iii) The Coastal plains and iv) The Erosional plains of the Central table Land. The Northern plateau and Eastern Ghats are well forested hilly regions. The coastal plains stretching over the districts of Cuttack and Puri cover the large delta formed by the river

		Mahanadi and is a fertile area well suited for intensive cultivation. The erosional plains of the Central Table Land are traversed by the river Mahanadi and its tributaries.(Source- http://nwda.gov.in/writereaddata/sublink2images/104.pdf)
1.7	Country and States (Province) in which the basin lies (indicate % area covered);	Orissa:65628, Jharkhand:132 Chhtisgarh:75136,Maharashtra:238 (Source-River Basins of Orissa.htm)
2	Hydrological and Land use Features:	
2.1	Average annual rainfall (in mm)	1360 mm (Source- http://www.int-res.com/articles/cr/2/c002p215.pdf)
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	48732 mcm(Source- http://www.orissawater.com/SWFs/WaterResources.htm)
2.4	Major tributaries	Seonth, the Jonk, the Hasdeo, the Mand, the Ib, the Ong, and the Tel.(Source- http://en.wikipedia.org/wiki/Mahanadi_River)
2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages- Convert intoTable	66.88mcm-surface water potential & 16.46mcm-Ground Water (Source-Water Sector at a Glance 2006)
	(a.) Agriculture,	
	(b.) Industries,	not available
	(c). Domestic,	not available
	(d). urban,	70 Lpcd -urban, 40 lpcd-rural (Source-State of Environment

		Report Orissa)
	e). environmental flows.	not available
2.6	Major cropping pattern	rice, oilseed, and sugarcane are grown(Source- http://en.wikipedia.org/wiki/Mahanadi_River)
2.7	Cultivable area under irrigation	1938Th Hcts (Source- Water Sector at a Glance 2006)(Only Orissa)
2.8	Cultivable area not under irrigation	not available
2.9	State other Water Uses- eg. Navigation, power, recreation etc.	The hydropower potential of the basin has been assessed as 627 MW at 60% load factor.(Source- http://en.wikipedia.org/wiki/Mahanadi_River)
3	Ecosystem Features	
3.1	Agro-climatic zones	Eastern Plateau and Hill Region(Source- http://agricoop.nic.in/Farm%20Mech.%20PDF/05024-01.pdf)
3.2	Major sub ecosystems (zoogeographical zones)	not available
3.3	Major soil types	soil types found in the basin are red and yellow soils, mixed red and black soils, laterite soils and deltaic soils.(Source- http://en.wikipedia.org/wiki/Mahanadi_River)
3.4	National parks/sanctuaries, lakes, wetlands, etc.	wildlife Sanctuary at Badrama (Ushakuthi), Khalasuni and Debrigadh (wildlife sanctuary in the Barapahad mountain range - Chourasimal), (Source- http://en.wikipedia.org/wiki/Sambalpur) Chilka Lake, a brackish water coastal lake on the Bay of Bengal, south of the mouth of the Mahanadi River, is the largest coastal lake in India. It is protected by the Chilka Lake Bird Sanctuary, which harbors over 150 migratory and resident species of birds. (Source- http://en.wikipedia.org/wiki/Orissa)
3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	Mahanadi River Delta extends over an area of 141,589 km ² . (Source- http://en.wikipedia.org/wiki/Mahanadi_River)

4	Water Quality	
4.1	Prevailing water quality standards (e.g. Class I, II, III.etc, indicating permitted uses)	See attachment
4.2	Stretches (along the River) in Kms. with water quality classes indicated	see attachment
4.3	Sources of Pollution, with data indicating quantum and/or severity.	See attachment
4.4	Prevailing abatement techniques e.g: ETP, STP, legislation,etc.	See attachment
5	Current status of the resource development & potential for development	
5.1	Water availability: a. Per capita water availability (in lpcd)	70 Lpcd -urban, 40 lpcd-rural (Source-State of Environment Report Orissa)

	b. Per hectare water availability (in Cubic meters for cultivable command area):	40 lpcd-rural (Source-State of Environment Report Orissa)
	c. Availability of environmental flows (Current reserve, if any):	not available
	d. Availability of ground water/ Average annual ground water abstraction/recharge.	
5.2	Structures: a. Major dams/barrages (with utilization categories):	Hirakud Dam, Sunder Dam. Hasdeo Bango Dam,etc (Source-Integrated Hydrological Databook 2006)
	b. Proposed dams:	Govt. of Orissa proposed Manibhadra project (Source- http://nwda.gov.in/writereaddata/sublink2images/103.pdf) and through other proposed dams--- 10.09 Cubic meters (Source - Integrated Hydrological Databook 2006)
	c. Live storage of major dams:	Hirakud Dam-5818 M. Cum (Source- http://sambalpur.nic.in/hirakud%20dam.htm) 12.33Cubic meters (Source - Integrated Hydrological Databook 2006)
	d. Live storage through proposed dams:	4290 Mm3(Source- http://nwda.gov.in/writereaddata/sublink2images/103.pdf) 1.87Cubic meters (Source - Integrated Hydrological Databook 2006)
	e. Inter basin transfer systems:	Mahanadi (Manibhadra) – Godavari (Dowlaiswaram) link canal, Salia project, Manibhadra project. (Source- http://nwda.gov.in/writereaddata/sublink2images/103.pdf)
	f. Any Other:	The link canal power-house with an installed capacity of 70 MW will generate 197 million units.((Source- http://nwda.gov.in/writereaddata/sublink2images/103.pdf)

5.3	Command area of major dams	not available
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	Irrigation Department of Orissa, National Hydro Power Corporation,
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	National Water Policy, Orissa State Water Policy,
7	Key Issues:	In the upper drainage basin of the Mahanadi River, centered on the Chhattisgarh Plain, periodic droughts contrast with the situation in the delta region where floods may damage the crops.
8	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	National Water Policy, Orissa State Water Policy

SCHEDULE B
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NIL

SCHEDULE C
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