

RIVER BASIN

VAMASADHARA

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);	Vamsadhara, Vansadhara(also called Bansadhara in Orissa) is an important east flowing river between Mahanadi and Godavari, in Southern Orissa and North Eastern Andhra Pradesh states in India.)
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 river originates near Lanjigarh village in Kalahandi district of Orissa and runs for a distance of about 254 kilometers and joins the Bay of Bengal at Kalingapatnam.
1.4	Area (in Sq. Kms.),	The total catchement area of the river basin is about 11,377 square kilometers.(Source: Department of Water Resources, Government of Orissa)

1.5	Population (in Millions); Name of population centers/ Cites (duely marked on the map: refer 1.2) having Population - (a) More than 0.5 Million - 1 Million	Population (2001): 10,23,338, Density: 114 / Sqkm (Source: http://www.orissawater.com/BasinMaps/IndexofBasins.htm) Note: Major urban centres in the basin are: Urban Centres: Srikakulam, Narasannapeta, Patapatnam, tekkali, Palasa, Sompeta, Parlakhemundi, Gunupur, Kashinagar, Bissam Cuttack are the important towns in the basin.(Integrated Hydrological Data Book, CWC, 200_)
	(b) More than 1 Million – 10 Million	
	(c) More than 10 Million	
1.6	Approximate areas of upper regime, middle regime and lower regime;	The basin is divided in upper and lower Vamsadhara basins, lower basin lies in Andhra Pradesh. Though the areas of upper and lower basins could not be found
1.7	Country and States (Province) in which the basin lies (indicate % area covered);	890 Sq, Kilometers in Orissa and 228 sq km in Andhra Pradesh (Source: Orissa Water Resource Department) Andhra Pradesh. Total length is 230 kilometers, with 150 kilometers in Orissa and 80 in Andhar Pradesh
2	Hydrological and Land use Features:	

2.1	Average annual rainfall (in mm); (Support with distribution)	Annual Rainfall: Max:2591 mm, Min:410 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	In Orissa: Average water resources from the Vamsadhara are estimated to be 5083 MCM
2.4	Major tributaries	Major Tributaries:Badanalla, Harbhangi, Mahendranaya, Sananadi
2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages-Convert intoTable (a.) Agriculture,	Data not found
	(b.) Industries,	Current industrial Water Demand in Orissa: 16.90 MCM (Source :State of Orissa's Environment)
	(c). Domestic,	Data not found
	(d). urban,	Data not found
	e). environmental flows.	Data not found
2.6	Major cropping pattern	The Vamsadhara valley is a region dominated by sugarcane cultivation. Rayagada stands at the centre of this zone. Oilseeds are also widely cultivated to the east of the Vamsadhara and thus a separate region is formed.(Source : http://www.webindia123.com/orissa/economy/agriculture%202.htm) As per the National Water Development Agency,, the cropping pattern suggested for streams in between Rushiklya and

		Vamsadhara is 45% paddy, 15% pulses, 15% oilseed, 15% fodder (Kharif). In the coastal region, there are plantations of jackfruit, cashew, coconut, mango and almond
2.7	Cultivable area under irrigation	Data not found
2.8	Cultivable area not under irrigation	Data not found
2.9	State other Water Uses- eg. Navigation, power, recreation etc.	Vamsadhara, especially in Andhra Pradesh has a very good hydropower potential (Source: Environmental Information System: ENVIS: http://www.envis.nic.in/soer/ap/waterresources.htm)
3	Ecosystem Features	
3.1	Agro-climatic zones	Climate is tropical
3.2	Major sub ecosystems (zoogeographical zones)	Vamsadhara originates in the forested hills of Niyamgiri with Rushikulya and flows down to the fractured and undulated terrain.
3.3	Major soil types	Data not found
3.4	National parks/sanctuaries, lakes, wetlands, etc.	Niyamgiri Wildlife Sanctuary where Vamsadhara and Rushikulya originate, Telineelapuram Bird Sanctuary in Srikakulam, Andhra Pradesh

3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	<p>Though the river does not form a notable delta region, Vamsadhara Estuary in the Srikulam District houses 35 hectares of wetland area. (Source: Toolkit for establishing coastal Bioshield, V Selvam) Kalingapatnam is a village and panchayat located in the Gara Mandal of Srikulam district, where the River Vamsadhara meets the Bay of Bengal. It is one of the nearest beach resorts to Srikulam town.</p> <p>Kalingapatnam was one of the ancient Andhra's harbor towns. Perfumes, textiles and so on were exported to other countries from the port. Kalingapatnam port was closed during British rule of India, but the light house constructed by the British at Kalingapatnam port still exists. (Source:http://en.wikipedia.org/wiki/Kalingapatnam). It is also a nesting site for Olive Ridley Turtles (Source: Important nesting habitats of olive ridley turtles <i>Lepidochelys olivacea</i> along the Andhra Pradesh coast of eastern India, Basudev Tripathi)</p>
4	Water Quality	
4.1	Prevailing water quality standards (e.g. Class I, II, III.etc, indicating permitted uses)	Though water quality standards for the entire river could not be found, some data found is given below

4.2	Stretches (along the River) in Kms. with water quality classes indicated (may be marked on the map)	Water samples from 113 wells in the lower Vamsadhara(, spreading over an area of 817 sq.km in northern Andhra Pradesh) were analysed for Ca, Mg, Na, K, Cl, SO4, HCO3, F, NO3 and PO4. The results indicate the presence of phosphate in the groundwater ranged from 0.72 to 7.07 mg/l, which is beyond the limits recommended for domestic and water treatment purposes.Presence of nitrate in groundwater is also detected. (Source: Phosphate pollution in the groundwater of lower Vamsadhara river basin, India, Springer Link, 1997)
4.3	Sources of Pollution, with data indicating quantum and/ or severity.	Major sources of pollution are mining, agricultural runoffs and domestic sewage
4.4	Prevailing abatement techniques e.g: ETP, STP, legislation,etc.	Data not found
5	Current status of the resource development & potential for development	
5.1	Water availability: a. Per capita water availability (in lpcd)	In Orissa: Current per capita dependable Water availability of the Vamsadhara basin is: 3792 CM. 2051 scenario: 2580 CM (Source: State of Orissa's Environment)
	b. Per hectare water availability (in Cubic meters for cultivable command area):	Data not found
	c. Availability of environmental flows (Current reserve, if any):	Data not found

	d. Availability of ground water/ Average annual ground water abstraction/recharge.	Data not found
5.2	Structures: a. Major dams/barrages (with utilization categories):	Pratappur (Effective Storage Capacity: 830 MCM), Bada Nalla: 67140 MCM, Tanagarakana: 580 MCM, (Source: http://www.orissawater.com/DamSafety/NRLD_Corrected_11.08.06(1).pdf)
	b. Proposed dams:	Data not found
	c. Live storage of major dams:	Please refer to 5.2
	d. Live storage through proposed dams:	Data not found
	e. Inter basin transfer systems:	Manibhadra- Godavari link will pass through the Vamsadhara. (Source: nwda.gov.in/writereaddata/sublink2images/110.pdf) Orissa had plans to link Vamsadhara and Rushikulya through canal systems.
	f. Any Other:	Data not found
5.3	Command area of major dams	Vamsadhara Phase I and Vamsadhara Phase II: Ultimate Potential: 59990 hecatres and 25150 hecatres. Vamsadhara Phase II, Stage II: 18270 hecatres(Source: http://planningcommission.nic.in/data/wrdiv/wr_details.xls)
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	Orissa water Resources department, Andhra Pradesh Water Resources Department, National Water Development Agency (NWDA: Proposed Interlinking)

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	Orissa State Water Policy (2006), Andhra Pradesh Water Policy
7	Key Issues:	<p>Transboundary water conflicts between Orissa and Andhar Pradesh over the construction of Vamsadhara-Rushikulya link by Orissa (Source:http://www.hindu.com/2006/02/26/stories/2006022618360100.htm)</p> <p>Mining of Bauxite in Orissa is polluting the Vamsadhara river and its tributaries.</p>
8	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	<p>Orissa State Water Policy as well as the proposed Water Policy for Andhra Pradesh support basin wise management of water resources. There are initial discussions of creating a Water Resources Regulatory Authority on the lines of Maharashtra water Resources Regulatory Authority in Andhra. Through this Authority, River Basin Agencies/ Organisations will be set up in each basin of the state. (Source: Personal communication with Andhra Pradesh Irrigation Department and http://www.hindu.com/2006/04/17/stories/2006041709630400.htm)</p>

SCHEDULE B
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nil

SCHEDULE C
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Nil