

**RIVER BASIN**

**NARMADA**

**[ INDIA ]**

**SCHEDULE A**  
**ASSESSMENT OF RIVER BASINS ORGANISATIONS (RBOs) IN SOUTH ASIA**

Sr. No.	Details	Response
<b>1</b>	<b>Physical Features - General Information</b>	
1.1	Name of River basin (also indicate regional names);	Narmada, Narbada , or Nerbudda (source- <a href="http://www.britannica.com/eb/article-9054858/Narmada-River">http://www.britannica.com/eb/article-9054858/Narmada-River</a> )
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)	rising in the Maikala Range in east-central Madhya Pradesh state. Following a tortuous course through the hills of Mandla, it enters the structural trough between the Vindhya and Satpura ranges at Marble Rocks Gorge and then flows westward across Madhya Pradesh and Gujarat states, entering the Gulf of Cambay through an estuary 13 miles (21 km)(Source- <a href="http://www.britannica.com/eb/article-9054858/Narmada-River">http://www.britannica.com/eb/article-9054858/Narmada-River</a> )
1.4	Area (in Sq. Kms.),	97,410 square kilometer(Source- <a href="http://www.sardarsarovardam.org/">http://www.sardarsarovardam.org/</a> )
1.5	Population (in Millions); Name of population centers/ Cites ( duly marked on the map: refer 1.2) having Population - (a) More than 0.5 Million - 1 Million	Jabalpur- 1,117,200 (2001),Barwani,- 73,222 (2001) Hoshangabad- 97,357 (2001), Maheshwar- 19,646.Omkareshwar-NA, Bharuch- 19,646.(2001) Devas-NA (Source- <a href="http://en.wikipedia.org/wiki/Narmada_River#Major_Towns_and">http://en.wikipedia.org/wiki/Narmada_River#Major_Towns_and</a>

		Cities_along_the_river)
	(b) More than 1 Million – 10 Million	
	(c) More than 10 Million	
1.6	Approximate areas of upper regime, middle regime and lower regime;	19,646.00
1.7	Country and States (Province) in which the basin lies (indicate % area covered);	85,858 square kilometer in Madhya Pradesh, 1658 square kilometer in Maharashtra and 9894 square kilometer in Gujarat. (source- <a href="http://www.sardarsarovardam.org/">http://www.sardarsarovardam.org/</a> )
<b>2</b>	<b>Hydrological and Land use Features</b>	
2.1	Average annual rainfall (in mm); ;	The average annual rainfall in the basin is 674 to 1623 mm (Source-Hydrological Data Book 2006)
2.2	Maximum-minimum temperatures in Degree Centigrade	7.5 to 42 degree Centigrade (Source-ibid)
2.3	Average annual yield (discharge) of water in Cubic Meter and the average yield for last past five years	45.64cubic km(Source-ibid)
2.4	Major tributaries	Burhner, Banjar, Hiran, Tawa, Chhota Tawa, Orsang and Kundi(Source- ibid)
2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages-Convert intoTable (a.) Agriculture,	Surface water-45.64bcm, Ground water-10.83bcm (Source-Water sector at a glance. Report of the Ministry of Water resources 2006) For Agriculture- 9.17bcm
	(b.) Industries,	8bcm(Source-ibid)

	(c). Domestic,	42bcm (Source-ibid)
	(d). urban,	not available.
	e). environmental flows.	not available.
2.6	Major cropping pattern	wheat, rice other cereals, pulses, oil seeds, potato, sugarcane. (Source- <a href="http://envfor.nic.in/unccd/chap-3.pdf">http://envfor.nic.in/unccd/chap-3.pdf</a> )
2.7	Cultivable area under irrigation	5776285Ha(Source-Integrated Hydrological Databook. 2006)
2.8	Cultivable area not under irrigation	1051252Ha (source- In=bid)
2.9	State other Water Uses- eg. Navigation, power, recreation etc.	Hydro Power generation and Navigation at the mouth of the river or in the port areas, where it empties into the Arabian Sea in the Bharuch District of Gujarat.(Source- <a href="http://en.wikipedia.org/wiki/Narmada_River">http://en.wikipedia.org/wiki/Narmada_River</a> )
<b>3</b>	<b>Ecosystem Features</b>	
3.1	Agro-climatic zones	Zone VII : Eastern Plateau and Hill Region (Districts Shahdol, Balaghat, Durg) Zone VIII : Central Plateau and Hills Region (Including Districts Mandla, Jabalpur, Narsingpur, Raisen, Hoshangabad, Chindwara, Sagar, Sehore, Betul) Zone IX : Western Plateau and Hill Region (Districts Dhar, Khandwa, Jhabua, Khargone (all M.P.) and Dhule, Maharashtra) Zone XIII : Gujarat Plains and Hills Region (Vadodara, Bharuch ) (Source- <a href="http://www.narmada.org/ALTERNATIVES/alt/docs/vision.doc">http://www.narmada.org/ALTERNATIVES/alt/docs/vision.doc</a> )
3.2	Major sub ecosystems (zoogeographical zones)	not available.

3.3	Major soil types	Alluvial soils cover about 78 mha (about 24%) of the total land and occur in the great Indo-Gangetic Plains, in the valleys of Narmada(Source- <a href="http://envfor.nic.in/unccd/chap-3.pdf">http://envfor.nic.in/unccd/chap-3.pdf</a> )
3.4	National parks/sanctuaries, lakes, wetlands, etc.	a) Jessore Sloth Bear Sanctuary. b) Wild Ass Wildlife Sanctuary in Little Rann of Kachchh c) Velavadar Black Buck Sanctuary. d) Kutch Bustard Sanctuary(Great Indian Bustard) e) Nal Sarovar Bird Sanctuary. (Source- <a href="http://en.wikipedia.org/wiki/Narmada_Dam">http://en.wikipedia.org/wiki/Narmada_Dam</a> )
3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	The Narmada river is not only used for irrigation, but for navigation. In the rainy season boats of considerable size sail about 100 kilometres above Bharuch city. Seagoing vessels of about 70 tons frequent the port of Bharuch, but they are entirely dependent on the tide. (Source- <a href="http://en.wikipedia.org/wiki/Narmada_River#Major_Towns_and_Cities_along_the_river">http://en.wikipedia.org/wiki/Narmada_River#Major_Towns_and_Cities_along_the_river</a> )
<b>4</b>	<b>Water Quality</b>	
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 (may be marked on the map)	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
<b>5</b>	<b>Current status of the resource development &amp; potential for development</b>	
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:	Sardar Sarovar Project (SSP) is the largest multipurpose project (Source- <a href="http://en.wikipedia.org/wiki/Narmada_Dam">http://en.wikipedia.org/wiki/Narmada_Dam</a> )
	a. Major dams/barrages (with utilization categories):	
	b. Proposed dams:	30 large dams planned on river Narmada(Source-ibid)
	c. Live storage of major dams:	7.23cubic km( source- Hydrological databook 2006)
	d. Live storage through proposed dams:	0.47cubic km (source- ibid)
	e. Inter basin transfer systems:	not available.

	f. Any Other:	Narmada Dam Project, is a project involving the construction of a series of large hydroelectric dams on the Narmada. Actual Power Generation: 1450 megawatts River(Source- <a href="http://en.wikipedia.org/wiki/Narmada_Dam">http://en.wikipedia.org/wiki/Narmada_Dam</a> )
5.3	Command area of major dams	irrigate more than 18,000 square kilometres - most of it in drought prone areas like - Kutch and Saurashtra.(Source- <a href="http://en.wikipedia.org/wiki/Narmada_Dam">http://en.wikipedia.org/wiki/Narmada_Dam</a> )
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	Narmada Valley Development Corporation, Irrigation Departments of Gujarat and Madhya Pradesh.
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	"The Narmada Water Disputes Tribunal Award"
7	Key Issues:	The utilisation of Narmada River basin today is hardly about 10%. Thus water of the Narmada continue to flow to the sea unused. (source- <a href="http://www.sardarsarovardam.org/">http://www.sardarsarovardam.org/</a> )
8	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	Narmada Control Authority

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

Sr. No.	Details	Response
<b>1</b>	<b>Legal / Political Mandate</b>	
1.1	Is there any RBO? If yes, Give Name.	Narmada Valley Development Authority (Source- <a href="http://www.nvda.nic.in/nvda.htm">http://www.nvda.nic.in/nvda.htm</a> )
1.2	How has it been constituted? (Statutory/ Voluntary/ Any other form).	Statutory Authority
1.3	State objectives and organizational structure of the RBO in outline & enclose brochures	The Narmada Valley Development Authority is a multidisciplinary organization of the State Government and its head office is at Bhopal Madhya Pradesh. The NVDA shall have jurisdiction over the major water resources development projects in the Narmada Basin (Source- <a href="http://www.nvda.nic.in/nvda.htm">http://www.nvda.nic.in/nvda.htm</a> )
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 addresses).	

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	
1.10	Does the RBO have an appellate authority?	
1.11	Is the RBO an autonomous body?	
1.12	Is it regulated by a supra basin authority, if so, how?	
1.13	Is the RBO authorized to raise capital for management and/or implementation in open market?	
1.14	Does the RBO receive direct budgetary grants? (From Govt./ Statutory Bodies/ Public donations/ Any Other Agencies.)	
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. (Kindly elaborate upon 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 disputes	
1.19	Is the RBO responsible for preparing Basin Management Plan. If yes, please enclose a copy	
<b>2</b>	<b>Processes of community/stakeholder participation in the functioning of the RBO</b>	
<b>2.1</b>	Are the stakeholders from the basin included in the governing body of the RBO?	
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	
<b>3</b>	<b>Conflict resolution and negotiations</b>	
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**  
**ASSESSMENT OF RIVER BASINS ORGANISATIONS (RBOs) IN SOUTH ASIA**

**Civil Society RBOs** ( CSOs working in River Basin issues or those physically involved in infrastructure development and articulating / advocating a River Basin perspective maybe be considered as Civil Society RBO. Please note that some of these organisation may not be calling themselves as RBOs. This is despite the fact that they function in most, if not all areas in which a statutorily constituted RBO operates)

Sr. No.	Details	Response
1.1	Constitution of the organization in terms of involvement of local action groups/initiatives, stakeholders, water users groups, and irrigation groups/ committees, traditional water groups urban and industrial users etc. are a part of the organization);	Friends of Narmada See Attachment for details
1.2	Reflection of basin perspective in the organization's constitution/past/planned work and activities?	
1.3	Scale of work: Sub-basin/basin scale?	
1.4	Consideration of upstream and downstream impacts of water management activities in the RB and issues like inequitable distribution of water between intra and inter sectors;	

1.5	Has the organization prepared a Basin Master( Management) Plan? Does it contain elements different from or alternative to that of the government organizations?	
1.6	Efforts taken by the Civil Society RBO to upscale the vision/activities at basin level	
1.7	Participation in lobbying and advocacy at appropriate levels (provincial, national, international)	