

RIVER BASIN

GODAVARI

[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;	Godavari
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	It originates in the Western Ghats at the Triambak in Nasik District of Maharashtra.(Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989.)
1.4	Area (in Sq. Kms.),	312812 km2 (Source -ibid)
1.5	Population (in Millions); Name of population centers/ Cites (duely marked on the map: refer 1.2) having Population -	Nasik, Aurangabad, Nagpur, Aurangabad, Ahmadnager parts of Pune, Jalna,Parbhani, Nizamabad, Rajahmundry, and Balaghat. (Source-www.rainwaterharvesting.org).
	(a) More than 0.5 Million - 1 Million	
	(b) More than 1 Million – 10 Million	D N A
	(c) More than 10 Million	D N A

1.6	Approximate areas of upper regime, middle regime and lower regime;	upper regime lies in Maharashtra and middle regime lies in Andhra Pradesh and the lower regime lies in basin area where it meets the Bay of Bengal.(Source-Maharashtra Water and Irrigation Report April 1999)
1.6	Country and States (Province) in which the basin lies(indicate %area covered);	Maharashtra-152199sqkm(48.6%), Andhra Pradesh-73201sqkm (23.4%) ,Madhya Pradesh-65255sqkm(10.0%), Orissa-17752sqkm(5.7%), Karnataka-4405sqkm.(1.4%)(Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989.)
2	Hydrological and Land use Features:	
2.1	Average annual rainfall (in mm).	606 to 1588mm.(sources-Integrated Hydrological Data Book -Non Classified River Basin. September 2006).
2.2	Maximum-minimum temperatures in Degree Centigrade	15 to 40 DC .(sources-Integrated Hydrological Data Book -Non Classified River Basin. September 2006).
2.3	Average annual yield (discharge) of water in Cubic Meter and the average yield for last past five years	88728 mcm.(sources-ibid)
2.4	Major tributaries	Purna, Manjra ,Penganga, Wardha,Wainganga, Indravati and Kolab. (Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989.)

2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages-Convert intoTable (a.) Agriculture,	Surface water-3432mcm Groundwater-2497mcm For Agriculture- 1052mcm.(Source--Maharashtra Water and Irrigation Report April 1999)
	(b.) Industries,	40mcm (Source -ibid)
	(c). Domestic,	130mcm (Source -ibid)
	(d). urban,	35mcm (Source -ibid)
	e). environmental flows.	D N A
2.6	Major cropping pattern	Rice, sugarcane, cotton, red chillies and tobacco.(Source- http://en.wikipedia.org/wiki/Andhra_Pradesh).Its tobacco is noted for its high quality and much of it is exported, although there is a world wide movement against smoking. Millets, groundnuts, cotton, jowar and ragi are the principal crops of the state. Pulses of all kinds are also widely sown.(Source- http://www.webindia123.com/andhra/economy/economy.htm)
2.7	Cultivable area under irrigation	20024252 hectares.(sources-Integrated Hydrological Data Book -Non Classified River Basin. September 2006).
2.8	Cultivable area not under irrigation	3690134 hectares.(sources-ibid)

2.9	State other Water Uses- eg. Navigation, power, recreation etc.	Identified hydro power schemes-54, in operation-9, und construction-8 (Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989)
3	Ecosystem Features	
3.1	Agro-climatic zones	Agro Climatic Zone–X : Southern Plateau and Hills region(Source- http://agricoop.nic.in/STUDY%20Mech.%20pdf/06035-04-ACZ10-15052006.pdf)
3.2	Major sub ecosystems (zoogeographical zones)	Hilly subdivided 15%,plateau region 57%, flat lands and alluvial region 28%.(Source - Maharashtra Water and Irrigation Report April 1999)
3.3	Major soil types	Black soils,red soils,laterites and lateritic soils, alluvium,mixed soils,saline and alkaline soils.(Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989.)
3.4	National parks/sanctuaries, lakes, wetlands, etc.	33 . Maharastra-16, Andhra Pradesh-10, Madhya Pradesh-3, Chattisgadh- 4.(Source- The Godavari Primer-An Essential Guide to Understanding the debate on the Utilisation of the Godavari Waters).
3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	5100 km ² The delta region is semi-arid with an average annual rainfall of 1042 mm and a maximum temperature in May of 37.3oC.(Source- http://www.geol.lsu.edu/Faculty/Hart/INDIARPT/india.htm)
4	Water Quality	

4.1	Prevailing water quality standards (e.g. Class I, II, III.etc, indicating permitted uses)	Class A-I Origin to Gangapur Dam.Class-II Gangapur Dam to confluence with Godavari River.(source- http://envis.maharashtra.gov.in/notifieddrivers/Uppergodavari.php)
4.2	Stretches (along the River) in Kms. with water quality classes indicated (may be marked on the map)	Origin to Gangapur Dam, Gangapur Dam to confluence with Godavari River(Source- ibid)
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)	208 per capita avialability (Source-- http://www.riversymposium.com/index.php?element=06NAIRShadananan)
6.1	Water availability: a. Per hecter water availability (in cultivable command area)	D N A
	c. Availability of environmental flows (Current reserve, if any):	D N A

	d. Availability of ground water/ Average annual ground water abstraction/recharge.	Groundwater-2497mcm (Source--Maharashtra Water and Irrigation Report April 1999)
6.2	Structures: a. Major dams/barrages (with utilization categories):	Completed major irrigation projects-12., utilization potential 0.9m.ha. (Source --major river basins of India -An overview. Published by Ministry of water resources-april 1989.)
	c. Live storage of major dams:	25.12 Cubic km.(Source-Integrated Hydrological Data Book- Non Classified River Basin September 2006))
	d. Live storage through proposed dams:	5.84 cubic km (Source- ibid)
	e. Inter basin transfer systems:	Proposed four links for the Inter basin Transfer 1.Mahanadi-Godavari Link 2. Inchampalli - Nagarjunasagar Link 3. Inchampalli - Pulichintala Link 4. Polavaram -Vijayawada Link (Source- http://nwda.gov.in/index2.asp?sublinkid=54&langid=1)
	f. Any Other:	Identified hydro power schemes-54, in operation-9, und construction-8 (Source -major river basins of India -An overview. Published by Ministry of water resources-april 1989)
5.3	Command area of major dams	1411670 hectares.(sources-Integrated Hydrological Data Book -Non Classified River Basin. September 2006).

5.4	<p>Agencies functioning in the basins:</p> <p>a. Public agencies/ CSOs which construct/ implement the infrastructures projects:</p> <p>b. Private agencies/ CSOs involved in infrastructure development</p>	<p>Irrigation Departments of Maharashtra, Karnataka, Andhra Pradesh, Madhya Pradesh and Orissa. Hydro Power Corporations of the above mentioned States. The Municipal Corporations of the Cities coming under the basin area.</p>
6	<p>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</p>	<p>The Godavari Water Disputes Tribunal headed by Justice Bachawat in April, 1969, Shore Area Development Authority(source-THE GODAVARI PRIMER AN ESSENTIAL GUIDE ON THE UTILIZATION OF THE GODAVARI WATERS AND RESOURCES).</p>
7	<p>Key Issues:</p>	<p>Due to deforestation, flash floods have also become common. The silt load in Godavari has always been heavy, but due to deforestation, silt has given way to sand and gravel in the riverbed. This has impeded river transport for hundreds of kilometres, and from 847 kms since the days of Arthur Cotton, it has come down to hardly 70 kms today! Since 1988, the Central Water Commission and the Ministry of Environment and Forests have pointed out the degradation, recommending to first stabilizing the catchment area before requesting sanctions for any project. although.</p> <p>There are several paper mills in the basin, there are no</p>

		<p>educational institutions or courses on paper technology. The region's economy therefore remains largely agricultural and forest-based.(source-THE GODAVARI PRIMER</p> <p>AN ESSENTIAL GUIDE ON THE UTILIZATION OF THE GODAVARI WATERS AND RESOURCES).It is worth exploring what will happen if Godavari does not flow to the present levels. A</p> <p>study from Andhra University has already shown that large-scale construction of dams is preventing sedimentation in the delta regions, in turn making it easier for the sea to advance and encroach on pristine ecosystems. The most devastating outcomes of this phenomenon are displacement of coastal communities and destruction of precious mangrove forests. While the catchment areas suffer from drought and sandcasting, the delta is suffering from cyclones, water logging and sea intrusion both on the ground and from underground.</p>
8	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	Godavari Tribunal, Maharashtra Water Resource and Regulatory Authority. Water Users Associations .

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

Sr. No.	Details	Response
1	Legal / Political Mandate	
1.1	Is there any RBO? If yes, Give Name.	1. Godavari Marathawada Irrigation Development Corporation [GMIDC] www.mahagovid.org/devcorpo.htm 2. Vidharbha Irrigation Development Corporation www.vidcngp.com / Maharashtra.htm 3. Godavari Water Utilisation Authority.
1.2	How has it been constituted? (Statutory/ Voluntary/ Any other form).	Statutory
1.3	State objectives and organizational structure of the RBO in outline & enclose brochures	
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	
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	
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?	
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

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);	Jalaspandana Society is a non-governmental organisation , a farmers network in Andhra Predesh. http://www.inpim.org
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)	