

**RIVER BASIN**

**KALA OYA**

**[ SRI LANKA ]**

<b>SCHEDULE A</b>		
<b>ASSESSMENT OF RIVER BASINS (RBs) IN SOUTH ASIA</b>		
<b>Sr. No.</b>	<b>Details</b>	<b>Response</b>
<b>1</b>	<b>Physical Features - General Information</b>	
1.1	Name of River basin (also indicate regional names used in different countries, states along its course);	Kala Oya
1.2	Relief Map and Index Map of RB with Country/ State/ Province boundary marked to be attached.	Map 1- relief map Map 2 - index map
1.3	Geographical location of the place of origin (Country/District. Please indicate on relief and Index Map)	Map 3 - river basin map
1.4	Area (in Sq. Kms.),	2805 km <sup>2</sup>
1.5	Population (in Millions); Name of population centers/ Cites ( duly marked on the map: refer 1.2) having Population -	0.4 Million
	(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;	Up stream (IZ) -24% Down stream (DZ) - 76%
1.7	Country and States (Province) in which the basin lies (indicate % area covered);	Central - Matale (505 km <sup>2</sup> - 18%) North central - Anuradhapura (1481 km <sup>2</sup> - 52%) North Western -K'gala(412 km <sup>2</sup> - 14%), Puttalam (449

		km <sup>2</sup> -16%)												
<b>2</b>	<b>Hydrological and Land use Features:</b>													
2.1	Average annual rainfall (in mm); (Support with distribution pattern on Relief Map of RB {at 1.2} - indicating regions receiving high, medium or low rains);	Up stream (IZ -24%) - 1700 mm Down stream (DZ - 76%) 1200 mm Average - 1450 mm												
2.2	Maximum-minimum temperatures in Degree Centigrade	Min. - 23 <sup>o</sup> c Avg. - 33 <sup>o</sup> c Max. - 37 <sup>o</sup> c												
2.3	Average annual yield (discharge) of water in Cubic Meter and the average yield for last past five years	AA yield - 3569 mcm												
2.4	Major tributaries	Araula Oya, Palwehera Ela, Dambulu Oya, Mirisgoni Oya, Hawanella oya, Moragolla Oya, Jayaganga, Maninda Oya, Kalagal Oya, Moderagam Aru, Denigala Ela, Pan Ela, Pomparippu aru, Lunu oya												
2.5	Percentage shares of major water uses & Surface and groundwater abstraction in percentages- Convert intoTable	domestic, industrial and commercial uses are comparatively negligible <table border="1"> <thead> <tr> <th>Sector</th> <th>Annual Water Use (mcm)</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Irrigation</td> <td>1158.5</td> <td>98.4%</td> </tr> <tr> <td>Municipal</td> <td>4.0</td> <td>0.3%</td> </tr> <tr> <td>Rural</td> <td>14.7</td> <td>1.3%</td> </tr> </tbody> </table>	Sector	Annual Water Use (mcm)	Percentage	Irrigation	1158.5	98.4%	Municipal	4.0	0.3%	Rural	14.7	1.3%
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	(a.) Agriculture,	Surface - Irrigated Agriculture constitutes the predominant use of surface water (> 99%)																		
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	(b.) Industries,	-																		
	(c). Domestic,	Groundwater (Dug wells, tube wells and public wells) is the main source of drinking water ( 70% ) pipe water - 3% other - rest																		
	(d). urban,	-																		
	e). environmental flows.	Kala Oya Basin has released one extra bulk water issue (extra water rotation) for every 12 irrigation issues (rotations) to supplement the environment flows Mean annual discharge to sea - 855 mcm																		
2.6	Major cropping pattern																			

2.7	Cultivable area under irrigation	Scheme	Command (ha)	Cropping Intensity	Cultivated Area (ha)		Duty (mm)	Water use* (mcm)	User
					Yala	Maha			
		Kalawewa	22778	1.45	10507	24904	1752	561	MASL
		Kandalama	4900	1.39	2541	4274	1234	84	
		Dambuluoya	2160	1.75	1388	2392	1122	42	
		Devahuwa	1210	1.26	517	1008	1871	19	
		Rajangana	7125	1.83	6679	6346	2051	267	ID
		Usgala	850	1.74	671	807	1267	19	
		Neelabemma	688	1.11	368	405	1500	12	
		Medium Tanks	2062	1.5	2062	1031	1062	22	ASD/ID
		Small tanks	12000	1	0	12000	1100	132	
<b>Total</b>	<b>53773</b>	<b>1.45</b>	<b>24733</b>	<b>53167</b>	<b>1562</b>	<b>1158</b>			

2.8	Cultivable area not under irrigation	**	2006- yala (Apr. Sep.)		
		Irrigation scheme	Total cultivable land extend (km <sup>2</sup> )	Cultivable extend under irrigation (km <sup>2</sup> )	
				Crop	Extend
		Neelabamma	6.9	Paddy	1.25
				OFC	5.65
		Rajangana	84	Paddy	62.1
				OFC	21.9
		Kala Wewa L/B	66.6	Paddy	21.31
				OFC	31.97
		Kala Wewa Y/E	47.2	Paddy	28.32
				OFC	9.44
Kala Wewa R/B	140.3	Paddy	44.9		
		OFC	67.34		
Dambulu Oya	22.3	Paddy	13.38		
		OFC	8.92		
Kandalama	49	Paddy	29.4		
		OFC	19.6		
<b>Total</b>	<b>416.3</b>		<b>365.48</b>		

2.9	State other Water Uses- eg. Navigation, power, recreation etc.	Fish industry in tanks, Recreation for eco-tourism
<b>3</b>	<b>Ecosystem Features</b>	
3.1	Agro-climatic zones	Map 4 - Agro ecological map Intermediate zone, Dry zone,
3.2	Major sub ecosystems (zoogeographical zones)	Map 4 - Agro ecological map IM1b, IM3b, IL3, DL1b, DL1f, DL3
3.3	Major soil types	Map 5 - Soil map of Sri Lanka Red yellow podsol with semi prominent A horizon, Red yellow latasolic, Reddish brown latasolic, Reddish brown earth, low humic clay soil, lithosol, Non calcic brown, Regosol,
3.4	National parks/sanctuaries, lakes, wetlands, etc.	Kahala- Pallekale Sanctuary (18116 ha), (Part), Villpattu National Park (45411 ha) (part), Thabbowa Sanctuary (2193 ha) (total extent), Minneriya- Giritale Nature reserve (1467 ha) (small part), Sigiriya Sanctuary (1310 ha) (small part) Major reservoirs Devahuva, Dambuluoya, Kandalama, Kala Wewa, Mahailupalama, Rajangana, Katiyawa, Angamuva and 600 small tanks. Flood plain wetlands (villu). Coastal resources as Mangroves, salt marshes Sea grass beds, Sand dunes, Lagoon system, Bar reef Marine sanctuary(306 km <sup>2</sup> ), etc.

Twelve

		commodities mineral resources
3.5	Brief information about the delta region of the basin (area, location, major urban centers in the delta, etc.)	-
<b>4</b>	<b>Water Quality</b>	

4.1	Prevailing water quality standards (e.g. Class I, II, III.etc, indicating permitted uses)	<p>Little or no consideration is given for quality of irrigation water</p> <p>More than 76 million people, mainly children will die from water related diseases by 2020. according to WHO (2000) there are already 4000 million cases of diarrhea each year, dying as many as 5 million people.</p>																																								
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4.2	Stretches (along the River) in Kms. with water quality classes indicated (may be marked on map)	**																																								
4.3	Sources of Pollution, with data indicating quantum and/or severity.	<p>Agro-chemicals - Eutrofication</p> <p>Untreated wastewater discharge (industries, domestic, urban)</p>																																								

4.4	Prevailing abatement techniques e.g: ETP, STP, legislation,etc.	**
<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 )	8676 m <sup>3</sup> / person / Yr
	b. Per hectare water availability (in Cubic meters for cultivable command area):	56948 m <sup>3</sup> / ha / Yr
	c. Availability of environmental flows (Current reserve, if any):	Kala Oya Basin has released one extra bulk water issue (extra water rotation) for every 12 irrigation issues (rotations) to supplement the environment flows Mean annual discharge to sea - 855 mcm
	d. Availability of ground water/ Average annual ground water abstraction/recharge.	3.3 km <sup>2</sup> cultivate using groundwater (Bombay onion, papaya, banana). Micro irrigation used in 0.24 km <sup>2</sup> . annual recharge of the Vanathavillu limestone aquifer located adjacent to the lower part of the KalaOya basin is 7.3 mcm.

5.2	Structures: a. Major dams/barrages (with utilization categories):	<p style="text-align: center;">**</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #cccccc;">Reservoir</th> <th style="background-color: #cccccc;">Active Storage (mcm)</th> <th style="background-color: #cccccc;">Command area (ha)</th> </tr> </thead> <tbody> <tr><td>Kandalama</td><td>33.7</td><td>4900</td></tr> <tr><td>Dambulu oya</td><td>9.0</td><td>2100</td></tr> <tr><td>Kalawewa</td><td>123</td><td>23800</td></tr> <tr><td>Rajangana</td><td>94</td><td>6700</td></tr> <tr><td>Devahuwa</td><td>12</td><td>946</td></tr> <tr><td>Usgala siyambalangamuwa</td><td>27.1</td><td>800</td></tr> <tr><td>Angamuwa</td><td>15.8</td><td>998</td></tr> <tr><td>Kattiyawa</td><td>3.4</td><td>202</td></tr> </tbody> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Name</th> <th>Year of construction/ restoration (‘n’- new ‘a’- ancient)</th> <th>Full Supply Level (m)</th> <th>Catchment Area (km<sup>2</sup>)</th> <th>Reservoir Area (ha)</th> <th>Maximum Depth (m)</th> <th>Volume (mcm)</th> <th>CA:RA</th> </tr> </thead> <tbody> <tr><td>Kandalama</td><td>1957n</td><td>176.2</td><td>102</td><td>688</td><td>8.7</td><td>34</td><td>15</td></tr> <tr><td>Kalawewa</td><td>1887a</td><td>129.2</td><td>598</td><td>2590</td><td>9.1</td><td>123</td><td>23</td></tr> <tr><td>Rajangana</td><td>1951a</td><td>68.3</td><td>443</td><td>1619</td><td>10.7</td><td>100</td><td>27</td></tr> </tbody> </table>	Reservoir	Active Storage (mcm)	Command area (ha)	Kandalama	33.7	4900	Dambulu oya	9.0	2100	Kalawewa	123	23800	Rajangana	94	6700	Devahuwa	12	946	Usgala siyambalangamuwa	27.1	800	Angamuwa	15.8	998	Kattiyawa	3.4	202	Name	Year of construction/ restoration (‘n’- new ‘a’- ancient)	Full Supply Level (m)	Catchment Area (km <sup>2</sup> )	Reservoir Area (ha)	Maximum Depth (m)	Volume (mcm)	CA:RA	Kandalama	1957n	176.2	102	688	8.7	34	15	Kalawewa	1887a	129.2	598	2590	9.1	123	23	Rajangana	1951a	68.3	443	1619	10.7	100	27
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	c. Live storage of major dams:	see 5.2																																																											
	d. Live storage through proposed dams:	-																																																											

	e. Inter basin transfer systems:	From Mahaweli to KBO diversion(annually - 510 mcm), from KOB to Malwatu Oya basin (annually - 61 mcm)
	f. Any Other:	-
5.3	Command area of major dams	see 5.2
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	Mahaweli Authority- System H, Dept. of Agriculture, Provincial Dept.of Agriculture,Irrigation Department,National Water Supply and Drainage Board, Water Resources Board
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 - Comprehensive water resources management requires a framework of coherent policies, consistent laws and regulations, collaboration among water- sector institutions and all stakeholders and carefully targeted well informed government action. The overall policy objective as stated in the draft National Water Resource Policy of 2000 are to: “Encourage Integrated Water Resource Management to ensure that national water resources are conserved and equitably allocated among all stakeholders to meet the needs of the society and environment.”
7	Key Issues: Critical issues in water resources development and management in the basin- that constrain economic and social development. (e.g. Water Rights, Need for Negotiations, Levels of participation, disaster	-

	management, Equity, Water sharing, Allocat	
<b>8</b>	Enabling instruments- Law/ Policy/ Economic & Financial Measures for introducing IWRM in the basin	MASL Parliamentary Act No. 23 of 1979 and other Gazetted Regulations, National Environment Act of 1988, Irrigation Ordinance, Flood Protection Ordinance National Water Supply & Drainage Board Law No. 2 of 1974, Agricultural Land Law No. 42 of 1973, Forest Ordinance
		<p>National Water Recourses Policy (NWRP) -The National Water Resources Policy (NWRP) should adopt effective measures to regulate water allocations, prepare plans for integrated water resources development, management and conservation of water resources while introducing legislation to recognize the rights of water users and grant water rights to them. The national water resources policy should be based on following principles.</p> <ul style="list-style-type: none"> <li>a) Water is a basic need for all living beings</li> <li>b) Need to assure safe water for the present and future generation as a fundamental right of all citizens</li> <li>c) Water is a limited and invaluable resource</li> <li>d) Water for domestic needs will be given priority in allocating water from existing resources and developing and managing new water resources</li> <li>e) River Basin, Sub Basin, Connected Basins will be the hydrological unit for planning and management of water</li> </ul>

		<p>resources</p> <p>f) Water rights will be recognized with regulations and governing allocations in line with national priorities</p> <p>g) Groundwater extraction will be monitored and appropriately regulated through the relevant institutions including in groundwater sensitive areas</p> <p>h) Management of water resources will be developed or decentralized as provided in the constitution</p> <p>i) All developers including state agencies need to obtain the approval of National Water Resources Authority (NWRA) for development of water resources</p> <p>j) The state will promote the integration of gender concerns in policies plans and programs in water sector activities Through this process, the NWRP anticipate empowering stakeholders in the decision making process for sharing the harnessed resources. The proposed Water Act is harmonized with the existing legislations and it has to be improved to cover the constitutional, organizational and operational functions in achieving the sustainable development through integrated water resources management and it should ensure that the agreed policies would be implemented</p>
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**SCHEDULE B**  
**ASSESSMENT OF RIVER BASINS ORGANISATIONS (RBs) IN SOUTH ASIA**  
**Nil**

**SCHEDULE C**  
**ASSESSMENT OF CIVIL SOCIETY ORGANISATIONS IN RIVER BASINS (CSOs) IN SOUTH ASIA**  
**Nil**