

4.1.6 Tanks and Ponds

1.0 Subject Matter (May include sub heading, data, graphs etc.) **Tables 1 to 4**

2.0 Availability of water, Utilizable Water

Availability of water in tanks	Utilizable water from the tanks	Demand for various sectors expected from the tanks	Supply for various sectors from the tanks	Consumption/ Consumptive use including recharge to ground water	Overflow from the tanks

Table 5 is related to the Storage Volume in water bodies like ponds, tanks, etc. The approximate volume of water available in these storage spaces as on 1st of June of the Water Year needs to be ascertained from the surface water area and average depth of water on the said date.

Table 5

A8. Storage* in Ponds, Tanks (MCM) as on 1st June		REMARKS
In Basin A/ Sub-basin		
In Basin B/ Sub-basin		
In Basin C/ Sub-basin		
TOTAL		

For table 6, the utilizable surface water from ponds, tanks, etc can be assessed by considering the abstractions round the year and remaining storage as on the last day of the Water Year i.e. 31st May. Eventually, these water bodies again gets filled up during the monsoon in the next Water Year and water is available for utilization.

Table 6

B6. Utilizable Surface Water: Ponds, Tanks (Considering Tables A1 & A8) (MCM)		REMARKS
Abstractions/Withdrawals round the year		
Basin A/ Sub-basin		
Basin B/ Sub-basin		
Basin C/ Sub-basin		
Storage* remaining after fulfilling all abstractions/withdrawals, losses etc. as on 31st May the next		
Basin A/ Sub-basin		
Basin B/ Sub-basin		
Basin C/ Sub-basin		
TOTAL		

The water that is lost from the System through evaporation from water bodies would come in this Table 7 as another Outflow from the System Boundary in an annual scale.

Table 7

D4. Evaporation ** from all Surface Water Bodies (MCM) in a Water Year		REMARKS
Basin A/ Sub-basin		
Basin B/ Sub-basin		
Basin C/ Sub-basin		
TOTAL		

*** Evaporation from the open water surfaces like Reservoirs, lakes, ponds, tanks and wetlands can be estimated using one of the standard methods like Pan Evaporation Method, Priestly-Taylor or any other standard and simple methods.
Evaporation from smaller water bodies may be clubbed together for ease and simplicity.*

3.0 Issues and Challenges-Bund maintenance, sluice gates, weirs maintenance, Irrigation Canals, CD & CM works, Encroachments, pollution problems, water hyacinths problems, weeds problems etc.

4.0 Problem Tree / Root cause Analysis: Cause, Effect and Interventions

5.0 Governance / Management:

- a. Statute / Law / Policy/ Regulations if any
- b. Institutions governing / managing / monitoring the resources and Institutional structure.
- c. Areas of Peoples/Private Participation if any
- d. Water Financing and Economics [Relevant tables on Water Financing and Economics may be looked into Chapter 7 and filled up with appropriate data/information]

6.0 Measurement, Monitoring and Data Constraints/ Management**7.0 Performance Indicators:**

- a. Bench Marks/ Norms/ Standards and deviation from the norms/bench marks/standards currently.
- b. Status of various Performance Indicators – **for comparison across Districts/**

Category	Indicator	Bench mark / Units	District-1	District-2
Water quantity Measurement	% of Tanks geo tagged			
	% of Tanks with telemetric system to measure depth of the water			
	% of Tanks for which Multi-temporal datasets are available			
	% of Tanks where DEMs are prepared for development of catchment areas			
	% of Tanks which measure water level with Water Level Recorders			
	% tanks which measure water based on water balance;			
	% of tanks have gauging equipments			
	% of tanks having depth gauges			
Water Conservation	% of System fed Tanks			
	% of non-system tanks			
	% of Feeder Channel with Encroachments free			
	% of Feeder Channel renovated / restored during the last five years			
	% of Tanks renovated/ restored/ rejuvenated during the last five years			
	% of tanks with stone pitched bunds and recreational facilities			
	% of Tanks with Plantation			
	% of Tanks fully renovated (operational) by taking Action on			
	• De-siltation			
	• Encroachments			
	• Structural			
	• Development work in Tank catchment area			
	% of Tanks partially renovated/ not renovated / restored (operational) Action to be taken on			
	• De-siltation			
	• Encroachments			

	<ul style="list-style-type: none"> Structural 			
	<ul style="list-style-type: none"> Development work in Tank catchment area 			
Water demand management	Area in ha increased under irrigated cropped area since the last five years.			
	% increase in cropped area irrigated			
	Number of livestock increased since the last five Years			
	% livestock increase due to water management during last five years			
	Total number of villages served by Tanks			
	Number of new villages served by Tanks during the last five years			
	Total population dependent on the tank for their livelihood (Direct)			
	% increase in population dependent on the tank for livelihood during the last five years			
	Total population dependent on the tank for their livelihood (Indirect)			
	% Increase in population dependent on the tank for livelihood (indirect) during the last five years			
	Total No of Bore wells and Open wells recharged			
	% increase in number of bore wells and dug wells gets recharged during the last five years			
	Cropped area under Bore wells / Open Wells which comes under Tanks influence area.			
	% increase in cropped area under bore wells and dug wells during the last five years			
	% area got energized by electricity, diesel and wind and solar power during the last five years			
	Water productivity in Tank Irrigated Area	% Area under Tank Irrigation		
Crop Intensity in percent				
Agriculture crop wise- Rice productivity in kg/ha-mm				
Agriculture crop wise- XXXX productivity				
% Area reported change in cropping pattern- Water Intensive Crops to Less water consuming crops				
%Area reported change / improvement in Irrigation method/ technology				
% Area under drip and Sprinkler Irrigation				
Animal Husbandry – Dairy Productivity(liters/ha of command)				
Fodder productivity (tons/ha)				
Fisheries wise- productivity (kg/ ha of tank water surface)				
% of tanks used for development of tourism like boating etc				
Increase in Ground Water table between pre- and post-monsoon in Tank influence area during the last five years				
% increase in discharge of tube wells in tank influence area during the last five years				

	No. of villages in which tanks are restored but still reported water scarcity for Humans and cattle in summer			
Water quality	% Tanks conducting the prescribed Water Quality tests			
	% of Tanks complied Irrigation Water norms.			
	% of Tanks wherein Water not used for any purpose.			
	% of tanks falling in each category based on "Designated Best Use" classification of CPCB			
Waste Water	Total Waste Water Generated in catchment area (M3/ha)			
	Measures taken to divert waste water not entering into the tanks.			
Financing	Investment in Rs per Ha of command area on renovation/restoration/ rejuvenation of tanks during previous year			
Equity	% & No. of landless families benefitted			
	%& No. of SC and ST families benefitted			
	%& No. of Minority families benefitted			
Peoples Participation	% of Tanks with Water User Association/ Sustainable Committees.			
	% of Tanks protection Committees in Urban areas			
	% of Tanks protection Committees in Rural areas			
	% of Tanks with Water User Association/ Sustainable Committees without SC & ST members.			
	% of Tanks with Water User Association/ Sustainable Committees without Minority members.			
Monitoring	% of tanks Operational online display of Water Quantity			
	% of tanks with Installation of telemetry water level recorders			
	% of tanks Operational online display of Water Quality			

8.0 Reforms undertaken/ being undertaken/ proposed if any

9.0 Road map of activities / tasks proposed for

- a. Better governance
- b. Better source / supply management
- c. Better demand management /improved Water Use Efficiency
- d. Water Quality
- e. Water Economics and Financing
- f. Sustainable Water budgeting with timelines and agencies responsible for each task/activity.

Table 1: Current scenario of Tanks in the State- District wise

District/ Basin	Nature	Tanks category			Administrative Depts.	Total surface Area of the tanks and water storage capacity of the tanks	Numbers of tanks in Chain	Command Area			Other purposes
		Nomenclature	No. of tanks	Potential Comman d Area (in ha)				Irrigated (ha)	Water utilized (Mm3)	Water use/ha	
	Govt.	Percolation tanks									
		Tanks <100*									
		MI Tanks >100*									
		Anicuts									
		Check Dams									
	Private										
Total											

* varies with each state/ UT

Table 2: No. of villages served by Tanks for the Current Year

Basin	District	No. of Tanks	No. of villages served by Tanks	No. of villages without tanks

Table 3: Time trend No. of villages served by Tanks

Basin	District	2000			2010			2015		
		No. of Tanks	No. of villages		No. of Tanks	No. of villages		No. of Tanks	No. of villages	
			Served by Tanks	Without tanks		Served by tanks	Without tanks		Served by tanks	Without tanks
Total										

Table 4: Tanks command Area: Time trend across the State

Tank Category	Command Area 2000				Command Area 2010				Command Area CY			
	No	Potential	Utilized	%	N	P	U	%	N	P	U	%
Percolation tanks												
Tanks												
MI Tanks												
Anicuts												
Check Dams												
Open wells / Bore wells In Irrigation tank influence area												
Total												

CY: Current Year

Table 8: Tanks Agriculture Cropped Area: Time trend across the State

Tank Category	Agriculture Cropped Area 2000				Agriculture Cropped Area 2010				Agriculture Cropped Area CY			
	No	Potential	Utilized	%	N	P	U	%	N	P	U	%
Percolation tanks												
MI Tanks > 100 Acres												
MI Tanks < 100 Acres												
Anicuts												
Check Dams												
Open wells / Bore wells In Irrigation tank influence area												
Total												

CY: Current Year

Table 9: Farm productivity over the Years

Sector	Produce	Produce Area	Current Yr Production	Productivity per Ha				
				Unit	2000	2010	2015	CY
Agriculture	Rice / Maize /Wheat /Pulses/ Cotton etc.			T/ha				
	Fodder							
Horticulture	Vegetable							
Livestock	Dairy	No. of Animals	Dairy Production					
Fishery	Aquaculture	Area	Fishery production					

Table 10: No. of Villages where tanks are restored/ renovated/ rejuvenated reported Drought

District	No. of Tanks restored during the last 3 Years	Number of tanks influenced by restoration	No. of villages affected by drought even after restoration

Table 11: Total Tanks under-performing as on 2015

District/ Basin	Total No of tanks	No of Problem free tanks	Number of under Performing Tanks							
			Encroachment	Siltation	Structural					
					Catchment	Field Channels	Bunds	Sluices	Weirs	Canal and Distribution System including CM & CD works

Table 12: Tanks Extinct as on 2015

District/ Basin	Total	Number of extinct Tanks with reason							
		Encroachment	Siltation	Structural					
				Catchment	Field Channels	Bunds	Sluices	Weirs	Canal and Distribution System

Table 13: Total Tanks repair /renovation /restoration /rejuvenation has been undertaken during the last 3 years

District/ Basin	Total Tanks	Units	No of tanks in which Action was taken fully							
			Encroachment removal	Weeds and water hyacinths problems solved	De- Siltation undertaken	Structural				
						Catchment treatment	Field Channels renovated	Bunds strengthened	Sluices renovated	Weirs renovated
		Nos.								
		% of Total								