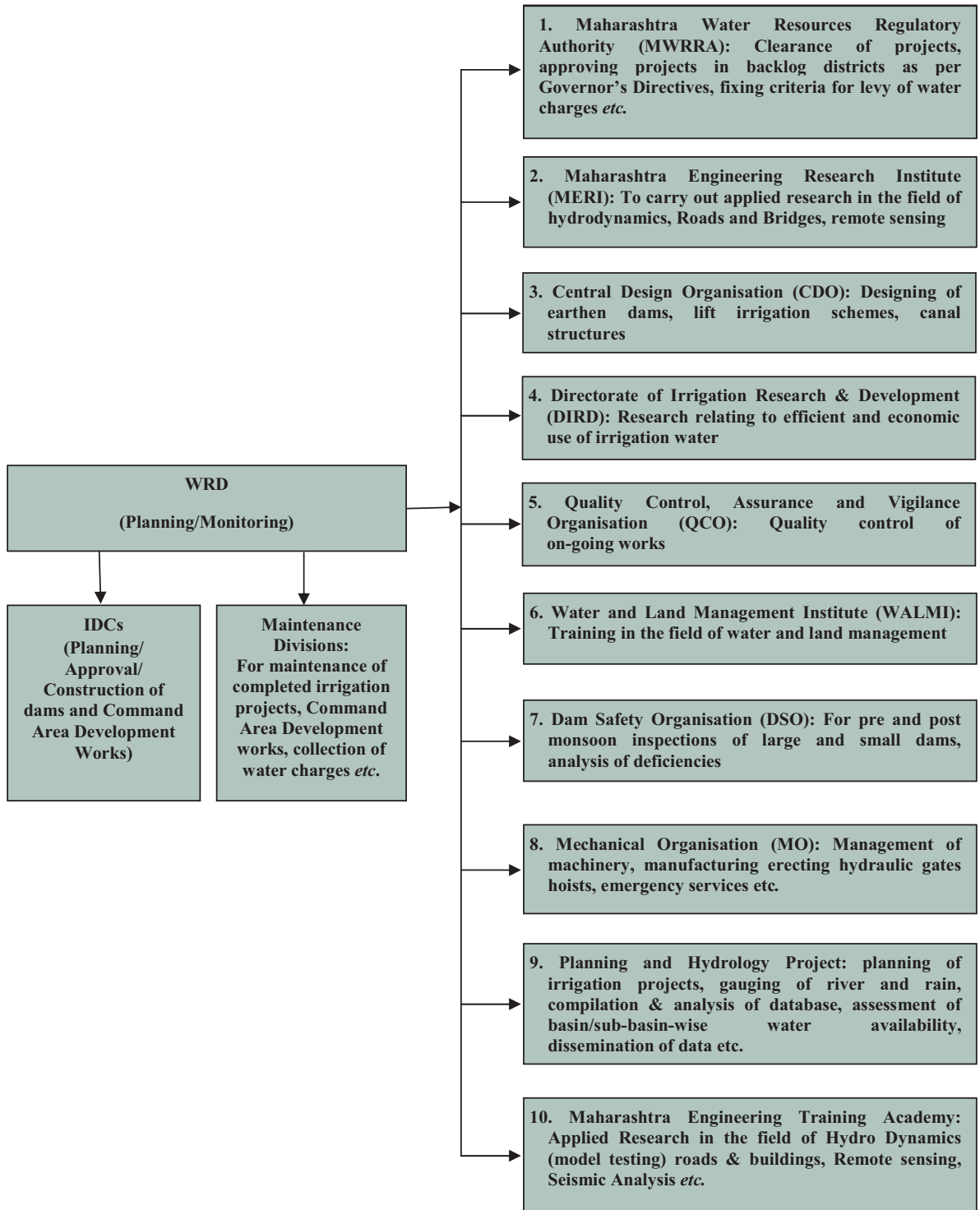


Appendix 1.1
(Reference: Paragraph 1.2, Page 3)

Chart 1: Organisational structure and functional responsibilities



Appendix 1.2 (Reference : Paragraph 1.2; Page 3) Glossary of terms used in the performance audit		
Sr No.	Acronym	Meaning
1	2	3
1.	Article 371 (2) of the Constitution Of India	(2) Notwithstanding anything in this Constitution, the President may by order made with respect to the State of Maharashtra or Gujarat, provide for any special responsibility of the Governor for: (a) the establishment of separate development boards for Vidarbha, Marathwada, and the rest of Maharashtra or, as the case may be, Saurashtra, Kutch and the rest of these boards will be placed each year before the State Legislative Assembly; (b) the equitable allocation of funds for developmental expenditure over the said areas, subject to the requirements of the State as a whole.
2.	Aqueduct	Where the bed level of the canal is higher than the high flood level of the drainage then the cross drainage work is called aqueduct. When irrigation channels have to cross streams or drains in an uneven country the works necessary to dispose of these drains are called cross drainage works.
3.	Backlog	Backlog refers to the regional disparity in the three regions of the State viz. Vidarbha, Marathwada and Rest of Maharashtra. Nine sectors like irrigation, roads, rural electrification etc. were chosen for estimation of backlog. As per the Indicators and Backlog Committee appointed (1995) by the Hon'ble Governor, percentage of created IP in the State vis-à-vis the net sown area was 35.11 per cent. Districts with created IP less than 35.11 per cent were considered as backlog districts.
4.	Colgrout masonry	Colgrout masonry is a new technique for construction of masonry for massive structures like gravity dams, weirs, barrage, foundation, retaining walls etc which satisfies the requirement of strength, durability and at the same time being impervious and particularly suitable for water retaining structures in Indian conditions.
5.	Command Area Development	Envisages execution of on-farm development works like field channels, land levelling, field drains and conjunctive use of ground and surface water; the introduction of Warabandi, or the rotational system of water distribution to ensure equitable and timely supply of water to each holding; and evolving and propagating crop patterns and water management practices appropriate to each command area.
6.	Cross drain	Cross drain is a drain to collect seepage from the longitudinal drain and to collect it in the toe drain.
7.	Culturable/Cultivable Command Area	The area which can be physically irrigated from a Scheme and is fit for cultivation by a canal system or by lift.
8.	Cut-off trench	An excavation in the base of a dam or other structure filled with relatively impervious material to reduce percolation.
9.	Dead storage capacity	The portion of a water storage capacity that is equal to the volume of water below the level of the lowest outlet (the minimum supply level). This water cannot be accessed under normal operating conditions.

Appendix 1.2 (contd.)		
1	2	3
10.	Downstream of dam	An area down the dam built.
11.	Drip irrigation	Drip irrigation system delivers water to the crop using a network of mainlines, sub-mains and lateral lines with emission points spaced along their lengths. Each dripper/emitter, orifice supplies a measured, precisely controlled uniform application of water, nutrients, and other required growth substances directly into the root zone of the plant.
12.	Field Channels	Small channels which receive water through outlets fixed in the banks of distributaries or minors to the field.
13.	Gorge filling	Filling the river portion of dam embankment.
14.	Gross Command Area	The total area covered by an irrigation project including uncultivable area under habitation, roads, tanks, waste land, forest land <i>etc.</i>
15.	Gross cropped area	Gross cropped area is the sum of net sown area and the area sown more than once in an agricultural year.
16.	Guide bunds	Provided for the purpose of guiding the river flow pass the diversion structure without causing damage to it and its approaches.
17.	Head regulator	Construction at the off-take of a channel subsidiary to a main canal. Piers with grooves are provided for the use of shutters to regulate the water flow for distribution.
18.	Head work	The works constructed at the off take of a main canal from the river; includes the weir on the river, the dam at the storage site <i>etc.</i>
19.	Hearting and casing	A zone of impervious earth within a zoned earthen or rock fill dam while casing zone is the outer side of hearting zone placed with pervious soils so as to protect the hearting zone.
20.	Hot weather	The hot weather season commences from March 1 to June 30.
21.	Inverted plum bobs	Used to measure the relative displacement between the dam bottom and the foundation base rock.
22.	Irrigable Command Area	It is the part of CCA which can be irrigated by the canal system less the area which cannot be irrigated because of high elevation.
23.	Irrigation Potential created	The total gross area proposed to be irrigated under different crops during a year by a scheme. The area proposed to be irrigated under more than one crop during the same year is counted as many times as the number of crops grown and irrigated.
24.	Irrigation Potential projected	The irrigation potential planned to be created on completion of an irrigation project.
25.	Irrigation Potential utilised	The gross area actually irrigated during reference year out of the proposed gross area to be irrigated during the year.
26.	Kharif	The Kharif season commences from July 1 to October 14. Paddy and groundnut are examples of Kharif crops.
27.	K T Weir	Kolhapur-type weir is a low level dam built across a stream for storage of water.
28.	Lift Irrigation Scheme (LIS)	A type of irrigation in which irrigation is provided through water raised by pumps.

Appendix 1.2 (contd.)		
1	2	3
29.	List I	The Seventh Schedule (under Article 246) of the Constitution of India provides a Union list termed as List I. Entry 56 of List I provides that “Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest”.
30.	List II	The Seventh Schedule (under Article 246) of the Constitution of India provides a State list termed as List II. Entry 17 under List II of Seventh Schedule provides that “Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I”.
31.	List III	The Seventh Schedule (under Article 246) of the Constitution of India provides a Concurrent list termed as List III.
32.	Live storage capacity	Live storage capacity means the reservoir capacity excluding the dead storage capacity.
33.	Major project	Having culturable command area above 10,000 ha.
34.	Medium project	Having culturable command area above 2,000 ha and up to 10,000 ha.
35.	Micro irrigation	Micro irrigation is a system of tubes and drippers which deliver water directly to the base of each plant or crop to use water with much greater efficiency than that provided by conventional sprinkler systems.
36.	Minor	A branch of distributary of any canal.
37.	Minor project	Projects having irrigable command area from 251 ha to 2,000 ha.
38.	Net Present Value	The discounted sum of ecosystem goods and services that would flow from a forest over a period of time net of costs incurred. In the context of diversion of forests land to non-forestry, NPV means that the loss of value of the forest resources to the stakeholders or the users at the time of diversion of forest land.
39.	Net Sown Area	It is the total area sown with crops. Area sown more than once is counted only once.
40.	Outlet	An opening of a capacity not exceeding 30 litres per second to serve a block of land of approximately 40 hectares through which water is delivered into a field-channel or directly into any land.
41.	Perennial crops	Perennial crops are planted once and live for years producing many consecutive harvests.
42.	Plumb bobs	Used to measure relative displacement between two reference points of a dam structure.
43.	Quarry spual	Small chips of stones available from quarry at the time of blasting for rubble.
44.	Rabi	The rabi season commences from October 15 to February 28/29. Jowar and Wheat are examples of Rabi crops.
45.	SRE	Standard Rabi Equivalent - water required for an area having different crops against water required for equivalent area of Jowar crop in Rabi season.
46.	Reservoir	A body of water collected and stored behind a dam.

Appendix 1.2 (concl.)		
1	2	3
47.	Raising main	It is a structure used to raise or lift water from reservoir/canal with the help of pumping machinery in a lift irrigation system.
48.	Rock toe	Junction of the upstream or downstream face of an embankment with ground surface.
49.	Saddle dam	An auxiliary dam constructed to confine the reservoir created by a primary dam either to permit higher water elevation and storage or to limit the extent of reservoir for increased efficiency.
50.	Shaft Rod	A rotating rod which through its motion operates the gate of head regulator.
51.	Sluice Gates	A barrier sliding in grooves that are set in the sides of the waterways, to allow the water flow under it.
52.	Spillway	A passage for the flow of surplus or waste water in a weir or conduit.
53.	Stone pitching	It is a protection provided for the embankment slopes against erosion by waves of water or rain water.
54.	Tail channel	End portion of a channel.
55.	Toe drain	A trench with filter material laid along the downstream toe of the dam to collect seepage from horizontal filter or inner cross drains and take it to natural drain.
56.	Trough	A bridge on the canal for passage of water.
57.	Upstream	An area above the dam built.
58.	Waste Weir	Channels used to dispose of excess water from the channel.

Appendix 1.3 (Reference : Paragraph 1.4; Page 6) Statement showing the list of the projects test-checked			
Major	Medium	Lift Irrigation Schemes	Minor
MKVDC			
1. Urmodi	1. Pimpalgaon Dhale	1. Tembhu	1. Nivakane
2. Dudhganga	2. Dhamni	2. Janai Shirsai	2. Kalgaon
3. Tarli	3. Kudali		3. Ambewadi
4. Chaskaman	4. Sina Medium Project Bhosekhind ¹⁶⁸		4. Kitwad No. 2
	5. Uttarmand		
	6. Chillewadi (Please see Note 2)		
KIDC			
5. Bhatsa	7. Hetwane		5. Shirsadi
6. Surya	8. KorleSatandi 9. Nardave (Please see Note 2)		6. Otav
			7. Talere
			8. Dedonwadi
			9. Virdi
			10. Roshani
			11. Kondhane (Please see Note 2)
VIDC			
7. Upper Wardha	10. Purna	3. Purna Barrage No. 2 LIS	12. Jamuna Sonwals
8. Lower Wardha	11. Katepurna Barrage 12. Utawali	4. Sondyatola LIS	13. Kumarpind
			14. Kali Doulakhan
	15. Nimgaon		
	16. Dorapgaon		
	17. Lower Dyanganga		
	18. Sirsa		
	19. Jambnalla		
	20. Pangrabandi		
	21. Antargaon		
	22. WaraJehangir		
	23. Raigad		
	24. Chikhali		
	25. Bewartola		
26. Dagad Parwa			
27. Sukli			
28. Shahapur Large Minor			
29. Chandas Watoda			
TIDC			
9. Punad	13. Bahula	5. Varangaon Talvel Parisar LIS	30. Matrannalla
10. Waghur Project	14. Kamani Tanda	6. Khurha Vadhoda Islampur LIS	31. Pimpri Dhambhurni

¹⁶⁸ Hiranyakeshi (Ambehol) selected through stratified sampling method was replaced with Sina Medium Project (Bhosikhind) to represent Ahmednagar district and also to avoid representation of multiple number of projects from Kolhapur district (Hiranyakeshi (Ambehol) and Dhamini)

Appendix 1.3 (concl.)			
Major	Medium	Lift Irrigation Schemes	Minor
	15. Prakasha Barrage		32. Dhanoli
	16. Lower Panzara (Akkalpada)		33. Sur
			34. Kag
GMIDC			
11. Upper Pravara	17. Upper Manar Project	7. LIS on Lower Terna Project	35. Borsuri
12. Shankarraoji Chavan - Vishnupuri	18. ShiwnaTakli	8. Mula Bhambori Pipe canal & Pump house – Lift Irrigation	36. Ghati
			37. Pimpalwadi
			38. Titvi
			39. Renapur Sudha
			40. Talani LMI
			41. Sillegaon
			42. Khari LMI
			43. Hastur Tanda
			44. Ambit
			45. Kumbhaphal
			46. Waldevi LMI
			47. Deolala LMI
			48. Dhapegaon
			49. Musabhaderayani

Note 1: Selection of projects in respect of KIDC was done excluding the projects covered in the performance audit included in the C&AG Report of 2009-10.

Note 2: Nardave and Kondhane projects under KIDC and Chillewadi under MKVDC were selected on risk assessment.

Appendix 2.1 <i>(Reference :Paragraph 2.5; Page 15)</i> Extract of 34th Governing Council meeting dated 11 June 2003		
Priority No.	Principle for prioritization and project names under the category	
1	Category A	Those major & medium projects which are in advanced stages and on which with comparatively less expenditure, considerable storage capacity could be created and those projects the execution of which is mandatory from safety angle. (Urmodi, Tarli, Sina Kolegaon, Dhom Balkewadi, Nira Deoghar, Gunjawani, Bhama Askhed major projects and such ongoing medium projects).
2	Category B 1	The ongoing projects in which dam work have been completed and on which with comparatively less expenditure on the ongoing canals and distributary works, considerable IP can be created (namely Kukdi, Bhima, Chaskaman, Krishna) were proposed for funding under Central funds.
3	Category C 1	Those LIS in respect of which major expenditure has been incurred and on which expenditure incurred was intended to provide irrigation benefits in scarcity/drought prone areas. (Takari, Mhaisal, Tembhu, Janai Shirsai, Purandar, Sina Madha).
4	Category B 2	Those LIS on which major expenditure has not been incurred and where it is possible to postpone the works (Jihe kathapur, Barshi, Ekrukh, Ashti, Shirapur, Dahigaon, Wakurde, Krishan stage II, Sina Mahekari, Anala & Shirala <i>etc.</i>).
5	Category B 2	Such ongoing projects and projects whose dam works have been completed and the works of canals and distributaries can be postponed (Dudhganga, Warna, Bhima-Sina extension canal).

Appendix 3.1

(Reference : Paragraphs 3.1.3.2.1, 3.2.2, 3.2.3, 3.2.6 and 5.2.1; Pages 25, 26, 28, 29, 37 and 72)

Statement showing the status of the 87 test-checked projects																				
Sr.No.	Name of Project/Type	Detail of original AA		Details of latest RAA			Expenditure as on June 2013 (₹ in cr.)	Up to date cost as on June 2013 (₹ in cr.)	Cost overrun (₹ in cr.) (Col 9-4)	No of years under execution/ completion up to 31 Oct 2013 (in years)	Reasons for non completion	Whether environmental clearance obtained	Whether forest clearance obtained	Whether forest land acquired	Whether civil land acquired	Status of irrigation potential as on June 2013 (in ha)				
		Month and Year of AA	Amount (₹ in cr)	No. of times RAA obtained	Month and Year	Amount (₹ in cr)										RAA sought but pending	8	9	10	11
M K V D C																				
1	Chaskaman/Major	Dec-73	10.65	2	Jul-03	388.13	728.49	538.10	728.49	527.45	40	A,D	not required	In principal approval obtained	yes	in progress	56096	50604	28320	AIBP
2	Urmodi/Major	Oct-93	212.08	2	Nov-10	1324.14	0	702.50	1417.75	490.42	20	A,B,C,D	Yes	Yes	No	No	43870	4783	0	AIBP
3	Tarli/ Major	Feb-96	194.32	3	Sep-10	1057.63	1447.63	816.93	1447.63	622.61	17	A,B,C&D	Yes	Not required	Yes	No	19498	7229	866	AIBP
4	Dudhgangw/Major	Sep-65	16.25	3	Jul-11	1712.8	0	700.50	1899.34	684.25	48	A,B	Yes	Yes	Yes	Yes	74017	39365	38846	No
5	Utarmand/Medium	Nov-95	34.71	2	Jan-07	123.17	0	107.79	123.16	73.08	18	Work is physically completed in June 2013	not required	Not required	Not required	No	7680	7680	564	AIBP
6	Pimpalgaon/Dhale/Medium	Jun-94	10.01	3	Mar-10	95.39	121.49	99.85	121.49	89.84	19	A,B,D	not required	Not required	Not required	Yes	3384	1324	464	NABARD
7	Dharni/Medium	Dec-96	120.30	1	Feb-05	320.7	762.25	294.22	833.50	173.92	17	A,B,D,E	not required	Yes	No	No	2100	0	0	No
8	Kudali/Medium	Aug-96	63.46	1	Nov-07	271.79	449.21	268.37	449.21	204.91	17	A,B,C,D	not required	Yes	Yes	No	8523	0	0	AIBP
9	Kiwad-2/Minor	Jan-98	9.44	1	Sep-09	21.4	0	20.05	21.40	10.61	15	Completed in June-13	not required	Not required	Not required	Yes	876	705	270	NABARD
10	Niwakane/Minor	Feb-00	8.18	2	Jul-09	48.71	0	34.47	48.71	26.29	13	A,B,C,D	not required	Not required	No	No	1020	0	0	NABARD
11	Kalgaon/Minor	Jan-00	5.57	1	Oct-10	16.78	0	15.10	16.78	9.53	13	A,B,D	not required	Not required	Yes	Yes	390	0	0	NABARD
12	Ambewadi/Minor	Jul-99	11.70	1	Jun-09	25.23	0	22.62	25.23	10.92	14	A,B,E	not required	Yes	Yes	Yes	500	500	60	NABARD
13	Bhosekhind/Medium	Dec-00	83.04	1	--	0	153.64	130.38	153.64	47.34	11	Work is physically completed in 2011	not required	Not required	Not required	Yes	8445	8445	6222	No
14	Chillewadi/Medium	Aug-97	123.63	1	May-10	194.23	0	115.10	207.30	0.00	16	A,B,D	not required	In principal approval obtained.	Yes	Yes	7455	1070	0	No
15	Tembhu LIS/Major	Feb-96	1416.59	1	Jan-04	2106.09	3832.98	1417.03	3832.98	0.44	17	A	yes	No	partial	No	111856	4437	1264	No
16	Janai-Shrisai/Major	Nov-93	56.92	2	Jun-11	411.72	0	279.78	411.72	222.86	20	A,C,E	no	Yes	Yes	No	15488	9809	448	No

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
K IDC																				
17	Bhatsa/ Major	June-67	13.68	5	Oct-07	768.1	1096.51	498.44	768.10	484.76	46	B,C,E	Not required	Yes	No	Not required	42550	13812	1868	No
18	Surya/ Major	January-74	18.91	5	Jan-04	379.26	587.30	437.06	587.30	418.15	39	B,C,E	no	Yes	No	Yes	27188	23107	1805	No
19	Hetawane/ Medium	January-81	15.36	3	Jun-08	329.90		291.15	329.90	275.79	32	A	Not required	Yes	Yes	Yes	11021	2046	124	No
20	Nardave/ Medium	July-89	32.44	3	Jul-07	446.7	649.95	339.03	649.95	306.59	24	A,B,D,E	no	No	No	No	12530.2	1153	6.35	AIBP
21	Korle Sasandi/ Medium	October-98	54.59	2	Jan-05	121.76	263.64	114.54	263.64	59.95	15	A,B,E	Not required	Yes	Yes	Not required	3625	0	0	No
22	Kondhane/ Minor	May-11	80.35		-	-	0	0.00	80.35	0.00	2	A,B,C,D,E	no	No	No	Not required	396	0	0	No
23	Shirshadi/ Medium	Oct-85	0.89	3	Jan-12	18.88		13.78	18.88	12.89	28	A,B	Not required	Not required	Not required	Yes	541.2	395	0	No
24	Otaiv/ Minor	Oct-77	0.29	3	Jan-10	25.02	62.44	31.01	50.20	30.72	36	A,B,D	Yes	Not required	Not required	Not required	855	0	0	No
25	Talere/ Minor	Mar-96	4.68	1	Oct-05	12.44	21.32	13.21	21.32	8.53	17	A,B,D	Not required	Not required	Not required	Not required	437	0	0	No
26	Dendonwadi/ Minor	May-80	1.60	1	Sep-94	12.44	44.21	26.44	42.60	24.84	33	A,B,D,E	Not required	No	No	No	982	0	0	No
27	Virdi/ Minor	Sep-05	43.68		-	-	151.57	44.70	151.57	1.02	8	A,C	Not required	Not required	Not required	Not required	2937	0	0	NABARD
28	Roshani/ Minor	Nov-00	12.34	2	Dec-11	34.98		34.75	34.98	22.41	13	Completed	Not required	Yes	Yes	Not required	690	690	144	No
G M IDC																				
29	Upper Pravara -Nilvande-2/ Major	Apr-70	7.93	3	Dec-03	760.21	2107.12	594.97	2107.12	587.04	43	B,C,D	Not required	Not applicable	Not required	No	64262	1190	0	No
30	Shankar Raoji Chavan Phase-I and Phase II/ Major	May-79	32.24	4	Aug-09	2452.00	2817.51	1834.63	2617.35	1802.39	34	A, B, C, D	Not required	Not required	Not required	Not available	61625	46251	17475	Phase-I in AIBP
31	Upper Manar Project/ LIS Medium	Nov-88	108.65	4	Aug-09	635.96	Not required	358.04	635.96	249.39	25	A, B, C	Not required	Not required	Not required	Yes	12420	6484	1029	AIBP
32	Shiwana takli/ Medium	Jan-79	8.03	3	Mar-09	228.64	Not required	167.40	228.64	159.37	34	C	Not required	Not required	Not required	Yes	6389	4422	2855	AIBP
33	Mula Wambhori Pipe canal & Pump house/ LIS	Jul-99	87.90	5	Oct-11	186.49	Not required	127.80	186.49	39.90	14	A	Not required	Not required	Not required	Yes	3568	2739	1820	No
34	Lower Tema project/ LIS	Feb-90	8.58	3	Sep-08	155.65	Not required	129.72	155.65	121.14	24	-	Not required	Not required	Not required	Yes	8957	8957	599	No
35	Ambit/ Minor	Oct-89	2.10		Feb-08	14.06	Not required	11.91	14.06	9.81	24	Not applicable	Not required	Not required	Not required	Yes	973	973	16	No
36	Titvi/ Minor	May-00	6.18	1	Jun-03	13.13	Not required	10.78	13.13	4.60	13	B	Not required	Yes	Yes	Yes	1554	1554	35	No
37	Ghoti Shilwandi/ Minor	May-04	17.76	Not yet submitted		Not required		15.36	17.76	0.00	9	-	Not required	Yes	Yes	Yes	1801	1801	86	AIBP
38	Khari MI/ Minor	May-92	5.63	2	Mar-05	25.31	33.86	26.77	34.88	21.14	21	B	Not required	Not required	Not required	Yes	1050	779	313	NABARD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
39	Devlana MI/ Minor	Mar-01	10.61	1st RA submitted to Government			21.50	16.69	21.50	6.08	12	B	Not required	Not required	Not required	Yes	681	230	192	AIBP
40	Sillegaon/ Minor	Mar-02	6.94	2	Jan-05	27.15	35.43	30.84	31.00	23.90	13	-	Not required	Not required	Not required	Yes	905	505	152	NABARD
41	Pimpawandi (Khopiti)/ Minor	Apr-01	6.48	1	Nov-08	12.43	Not required	12.03	12.43	5.55	13	-	Not required	Not required	Not required	Yes	534	534	534	NABARD
42	Kumbhaphal/ Minor	Nov-06	4.99	1st RA submitted to Government			9.17	9.12	9.17	4.13	7	-	Not required	Not required	Not required	Yes	336	330	134	No
43	Musabhadraya/ Minor	Sep-94	6.10	2		12.62	21.70	19.95	12.62	13.85	19	-	Not required	Not required	Not required	Yes	1130	1130	390	NABARD
44	Hasturanda MI/ Minor	Jul-00	6.14	1st RA submitted to Government			13.03	15.95	16.01	9.81	13	B	Not required	Not required	Not required	Yes	304	100	10	NABARD
45	Dapegaon/ Minor	Apr-01	7.80	1	Feb-11	19.72	Not required	14.56	23.70	6.76	12	B	Not required	Not required	Not required	Yes	1162	1162	1162	AIBP
46	Borsuri/ Minor	Sep-01	4.17	1st RA submitted to Government			10.68	8.77	19.13	4.60	12	B, D	Not required	Not required	Not required	Yes	487	0	0	No
47	Talni MI/ Minor	Sep-76	1.47	4	Apr-06	23.86	34.58	24.49	27.51	23.02	37	-	Not required	Not required	Not required	Yes	1200	1200	141	NABARD
48	Renapur sudha/ Minor	Sep-00	11.52	3	Sep-05	21.03	Not required	21.03	21.03	9.51	13	-	Not required	Not required	Not required	Yes	700	700	657	NABARD
49	Waldevi MI/ Minor	Mar-93	13.34	2	Jan-05	55.65	Not required	51.27	55.65	37.93	21	-	Not required	Not required	Not required	Yes	4314	4314	828	AIBP
TIDC																				
50	Waghur Project/ Major	Jan-76	12.28	6	Mar-11	1183.55	Nil	466.30	1183.75	454.02	37	A,C,D,E	Yes	Yes	Yes	Yes	38570	15992	0	AIBP
51	Punad/ Major	May-81	9.15	2	Apr-08	462.17	Nil	267.26	462.17	258.11	32	A,C,D,E	Yes	Yes	Yes	Yes	12662	10519	3047	AIBP
52	Varangoon Parisar Sancha Yojana/ Major	Jul-99	302.26	5	Jun-99	302.26	Nil	400.35	879.81	98.09	14	A	Yes	Yes	Yes	Yes	27633	0	623	No
53	Khurha Vadhoda Islampur LIS/ Major	Jul-99	207.08	2	May-09	842.40	Nil	435.74	1580.89	228.66	14	A	No	Not required	Not required	Yes	41437	0	0	No
54	Bahula/ Medium	Jan-77	2.66	3	Sep-05	54.97	Nil	45.76	72.80	43.10	36	B,D	No	Not required	Not required	Yes	4654	4654	0	AIBP
55	Prakasha Barrage/ Medium	Jun-94	52.07	3	Feb-09	245.02	Nil	186.10	245.02	134.03	19	-	No	Not required	Not required	Yes	10307	10307	486	AIBP
56	Kamani Tandav/ Medium	Dec-98	42.21	1	Sep-05	78.49	Nil	70.93	78.49	28.72	15	A,B	No	Not required	Not required	Yes	6032	6032	6912	No

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
V D C																				
57	Lower Panzara (Akkalpada)/ Medium	Jan-84	20.68	2	Mar-08	347.31	Nil	308.81	556.28	288.13	29	A,B,C,D,E	No	Yes	No	Yes	7855	3192	0	0 AIBP
58	Pimpri Diambhuri/ Minor	Aug-94	2.03	1	Apr-05	11.43	Nil	14.08	18.88	12.05	19	-	No	Not required	Not required	Yes	304	304	280	NABARD
59	Matramalla/ Minor	May-97	3.31	1	Feb-05	11.48	Nil	13.11	21.04	9.80	16	-	No	Yes	No	Yes	512	512	0	0 NABARD
60	Sur/ Minor	Feb-96	8.18	1	Mar-08	33.28	Nil	30.79	35.63	22.61	18	A	No	Not required	Not required	Yes	830	683	182	AIBP
61	Dhanoli/ Minor	Apr-84	1.22	1	Oct-00	17.62	Nil	16.25	17.62	15.03	30	-	No	Not required	Yes	Yes	1594	1594	0	0 No
62	Kang/ Minor	Nov-85	2.43	1	Jan-05	26.69	Nil	31.68	77.31	29.25	28	A,B	No	No	No	Yes	1048	0	0	0 AIBP
63	Lower Wardha/ Major	1981	48.08	3	Aug-09	2356.58		1228.79	2356.58	1180.71	32	A,B,C,D	No	Not required	Not required	No	66172	17379	0	0 AIBP
64	Upper Wardha/ Major	1976	13.04	4	Jul-09	1376.64		1148.77	1376.64	1135.73	37	-	Yes	Not required	Not required	Yes	75080	75080	0	0 AIBP
65	Purna/ Medium	1990	36.45	2	Oct-05	213.10		242.40	227.55	205.95	23	-	Not required	Yes	Yes	Yes	7530	7530	0	0 AIBP
66	Katepurna Barrage/ Medium	2007	69.97	(original)	Aug-07	69.97		75.02	316.76	5.05	6	A,E	No	No	No	No	4137	0	0	0 No
67	Urawali/ Medium	1991	15.63	3	Jun-08	109.64		114.62	109.64	98.99	22	-	Not required	Yes	Yes	No	5394	5394	0	0 AIBP
68	Shahapur Large/ Minor	2009	62.77	(original)	Feb-09	62.77		83.31	145.70	20.54	4	B	No	Yes	Yes	No	1373	0	0	0 No
69	Dagad Parwa/ Minor	1995	68.97	3	Jun-09	71.86		61.57	71.86	0.00	18	B, E, D	Not required	Yes	Yes	No	1095	661	235	No
70	Raigad/ Minor	2008	38.29	(original)	Feb-08	38.29		38.44	38.29	0.15	5	A,C	No	Not required	Not required	No	1570	0	0	0 No
71	Chandas Wathoda/ Minor	2007	40.07	1	Dec-10	90.61		77.69	90.61	37.62	6	D,E	No	Yes	Yes	No	1476	180	0	0 AIBP
72	Lower Dyanganga/ Minor	2009	30.45	(original)	Feb-09	30.45		36.80	96.18	6.35	4	A	No	Not required	Not required	No	1181	0	0	0 AIBP
73	Dorapgon/ Minor	1995	5.82	2	Jun-06	18.99		19.99	18.99	14.17	18	Not applicable	No	Yes	Yes	No	847	847	0	0 No
74	Bewartola/ Minor	1996	8.80	1	Apr-04	27.27		61.50	69.75	52.70	17	A,C,E	Not required	Yes	Yes	No	1742	440	250	No
75	Ningon/ Minor	1972	0.23	2	May-08	18.76		14.93	18.76	14.70	41	A,E	Not required	No	No	Yes	1062	0	0	0 No
76	Chikhal/ Minor	1993	3.85	1	Oct-10	30.30		37.56	40.33	33.71	20	-	Not required	Not required	Not required	No	836	836	0	0 No
77	Sirsi/ Minor	1983	2.20	1	Mar-09	31.80		27.62	31.80	25.42	30	A,B,C,E	Not required	Not required	Not required	No	1369	1369	0	0 No
78	Sakali/ Minor	1993	1.02	3	Dec-11	62.73		65.72	69.13	64.70	20	A,B,C,E	No	Not required	Not required	No	1720	1366	0	0 NABARD
79	Pangbandhi/ Minor	2009	24.50	(original)	Feb-09	24.50		35.49	111.12	10.99	4	B,C,D	No	Not required	Not required	No	1548	0	0	0 No
80	Januna Sonawala/ Minor	2007	8.49	(original)	Jul-05	8.49		10.16	11.07	1.67	6	Not applicable	No	Not required	Not required	Yes	664	664	182	No
81	Wara Jahangir/ Minor	2009	34.37	(original)	Jan-09	34.37		38.61	99.87	4.24	4	D	No	Not required	Not required	No	1790	0	0	0 No

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
82	Antargoon/ Minor	2000	11.78	1	Dec-05	23.38		31.86	39.81	20.08	13	C	Not required	Not required	Not required	No	960	500	0	No
83	Kali Doulatkhan/ Minor	1997	4.05	1	Jan-04	12.07		13.11	16.60	9.06	16	-	Not required	Not required	Not required	No	583	583	160	No
84	Jambhala/ Minor	1994	6.68	2	Jan-10	26.07		31.77	36.64	25.09	19	A,B,D	Not required	yes	Yes	No	1184	1104	0	NABARD
85	Kumbharpind/ Minor	1996	4.28	1	Jan-00	14.27		12.46	14.27	8.18	17	B	Not required	Not required	Not required	Yes	542	542	237	No
86	Purna Barrage No.2 / LIS	2008	180.91	1	Mar-11	638.35		314.06	638.35	133.15	5	B, E	Yes	Not required	Not required	No	6954	0	0	No
87	Sondyatola/ LIS	1995	13.33	2	Aug-09	103.31		110.38	129.73	97.05	18	A,C,E	Not required	Yes	yes	Yes	11010	6105	0	No
Grand Total																	990249.40	436878.00	122293.35	

Reasons for non completion

A	projects hampered due to paucity of funds
B	projects hampered due to land acquisition problems
C	projects affected due to change in scope of work
D	projects affected due to PAP problems
E	projects affected due to non acquisition of forest land

Completed projects	land not acquired	EC Not obtained	Forest clearance pending

Source: Information furnished by the IDCs

Note : As reported by the Department, survey was carried out for all the projects

Appendix 3.2 <i>(Reference: Paragraph 3.2.1; Page 26)</i> Statement showing test-checked projects where ECs were not obtained or EC conditions were not fulfilled		
Name of Project / CCA /Date of AA		Audit findings
I Projects where ECs were not obtained		
KIDC		
1.	Surya/27,188/January 1974	Compliance to GoI's observations raised (November 1993) with regard to EC was made only in September 2002 <i>i.e.</i> , after nine years. EC was pending (July 2013).
2.	Nardave /10,105/July 1989	The work on the dam started in February 2001 with CCA of 9,424 ha, which was increased to 12,530 ha as per third RAA accorded in July 2007. The EC required as per EIA notification of 2006 was not obtained.
3.	Virdi /1,508/September 2005	Work order for construction of dam and allied works was issued in April 2007 <i>i.e.</i> after EIA notification of September 2006. However, EC was not obtained.
4.	Kondane /240/May 2011	Work commenced (July 2011) without EC.
MKVDC		
5	Janai Shirsai LIS /19,712/ November 1993	The AA for the project was accorded by GoM in November 1993 and the first RAA accorded in December 2004. The irrigation potential under the scheme was 14,080 ha. The Division Authority submitted (September 2010) a proposal for EC to SEAC since the project covered about 15.88 ha of forest land and the right bank canal of the project also passed through the Mayureshwar Wild Life Sanctuary. EC was pending.
6.	Chaskaman /55,214/December 1973	The scope of the project was increased (July 2003) by increasing the irrigation potential from 29,200 ha to 44,170 ha which required EC from the GoI. Government stated (July 2013) that EC was not necessary as the note indicating the increase in the command area from 29,200 ha to 44,170 ha was approved in July 1993 before the EIA notification of 1994 and accordingly, attached a copy of the note. Reply is not tenable as the said approval was only for incurring expenditure over the AA and there was no mention of the increase in the command area.
VIDC		
7.	Katepurna Barrage/4,356/31.8.2007	EC awaited.
8.	Lower Dhyanganga/1,476/12.2.2009	Proposal submitted on 25.2.2013; clearance awaited.
9.	Januna/664/8.7.2007	Proposal yet to be submitted.
10.	Pangrabandi/1,548/27.2.09	Proposal yet to be submitted.
11.	Warajahangir/1,790/30.1.09	Proposal yet to be submitted.
12.	Sukli/523/18.7.07	Proposal submitted for EC in July 2008. EC was awaited.
13.	Lower Wardha/78,873/9.1.1981	As per the third RAA (August 2006) the irrigation potential of the project was increased by 12,407 ha. However, extension work was started without EC as per EIA notification of September 2006.
TIDC		
14	Kurha Vadhoda LIS/25,898/ 6.7.1999	EIA study report forwarded to MoEF in April 2011. EC under process.
GMIDC		
15.	Shankararaoji Chavan Vishunupuri Project, Phase II/26,523/May 1979	Proposal for EC for RAA was under process.

Appendix 3.2 (concl.)		
Name of Project / CCA /Date of AA		Audit findings
II	Non fulfillment of EC conditions	
1.	Tarali Irrigation Project/18,131/February 1996 (MKVDC)	The project received EC in July 2004. As per specific condition, Catchment Area Treatment (CAT) Plan consisting of biological measures ¹⁶⁹ and engineering measures ¹⁷⁰ was to be completed in three years. However, the plan was yet to be implemented for want of funds (March 2013).
2.	Urmudi Irrigation Project/37,000/October 1993 (MKVDC)	The project received EC in February 2005. As per specific condition of the EC, CAT Plan was to be completed in three years. However, the CAT Plan was not implemented. Further, the rehabilitation of PAPs as required under special condition of the EC was not completed as of March 2012.
3.	Tembu LIS/1,49,631/ February 1996 (MKVDC)	The EC was obtained in August 2007 which stipulated that a multi-disciplinary Committee in consultation with the MoEF should be constituted with ecologists, environmental Scientists and experience administrators to oversee the effective implementation of the suggested safeguard measures like compensatory afforestation programme. Government stated (July 2013) that the multi-disciplinary Committee was formed in June 2008 but details of actual safeguard measures suggested and the minutes of meetings of the Committee called for in audit were awaited (November 2013).
4.	Waghur/26,325/6.1.1976 (TIDC)	EC received in October 2006. Compliance of conditions of EC was in progress.
5.	Punad/12,662/29.5.1981 (TIDC)	EC received in December 1993. Compliance of conditions was in progress.
6.	Upper Wardha/83,300/13.2.1965 (VIDC)	Sixteen out of 17 conditions have been complied with.

¹⁶⁹ Biological measures include repairs of farm bunds, terrace bund improvement, planting in farm bund, reforestation and afforestation

¹⁷⁰ Engineering measures include gully plugging, loose boulder shoulder, gabian bandhara and cement nulla bund

Appendix 3.3 <i>(Reference: Paragraph 3.2.2; Page 28)</i> Statement showing increase in cost due to delay in payment of afforestation charges	
Name of the IDC	Audit Findings
KIDC	<p>Forest Department intimated (July 2009) WRD to pay ₹ 76.04 crore for transfer of forest land (681.589 ha) required for Mumari dam and Bhatsa left bank canal and right bank canal. The charges were however, paid after three years in July 2012. In the meanwhile, the Forest Department intimated (June 2013) the revised NPV and allied charges of ₹ 104.94 crore. The delay in payment thus, resulted in increase in cost of acquisition of forest land by ₹ 28.90 crore.</p>
	<p>Forest Department granted (2001) in-principle approval for acquisition of forest land of 33.0513 ha for construction of canals for Hetawne medium irrigation project. The Deputy Conservator of Forests, (DCF) Alibag demanded (April and November 2001) an amount of ₹ 51.93 lakh (₹ 22.94 lakh for compensatory afforestation, survey, demarcation and ₹ 28.99 lakh towards plantation on the both sides of canal, tree cutting, drip irrigation). The WRD however, paid the entire amount of ₹ 51.93 lakh only by March 2004. In the meanwhile, GoI issued order for recovery of NPV in all the forest clearance cases in which final approval was accorded after 29 October 2002. Accordingly, the DCF demanded (May 2010) an additional amount of ₹ 3.10 crore as NPV which was not paid even as of July 2013. Thus, delay of three years in payment of ₹ 51.93 lakh for obtaining final approval resulted in increased levy of NPV of ₹ 3.10 crore.</p>

Appendix 3.4 (Reference: Paragraph 3.2.4; Page 31) Statement showing increase in project cost due to improper survey (in ₹ crore)							
Sr No	Name of the project	Name of the work	Date of work order	Due date of completion as per work order	Reasons for increase in cost	Nature of change	Increase in cost
1	2	3	4	5	6	7	8
MKVDC							
1	Kudali project	Construction of new canal and distributaries	May 1997	May 2000	Change in design	Construction of new canal and distributaries in place of KT weirs.	46.66
2	Kalgaon project	Dam work-	April 2000	October 2001	Change in design	Construction of Tail channel and Head regulator.	5.43
3	Niwakane project	Dam work-	June 2000	May 2002	Change in design	Construction of Tail channel, Head regulator and Spill way.	7.58
5	Urmodi project	Dam work-	December 1997	December 2000	Design change	Increase in dam height.	39.46
6	Urmodi	RBC	June 2000	June 2003	Improper survey	RBC was covered under Ambale Minor Project Command Area necessitating change in alignment of RBC.	10.02
7	Uttarmand project	Dam work	June 1997	May 2000	Improper survey	shifting of masonry dam (earthen dam), additional provision of spillways after issue of work order.	16.63
8	Pimpalgaon Dhale	Dam work	March 1997	March 2000	Improper survey	Change in structural design and increase in quantity of embankment.	28.68
9	Pimpalgaon Dhale	Road	Dec 2009	October 2011	Improper survey	Raising height of existing road after issue of work order.	1.49
10	Dudhganga	LBC (Tunnel)	March 2001	March 2005	Improper survey	Site found unsuitable for tunnel due to hard rock and canal work was undertaken instead of tunnel work.	2.72
Total (A)							158.67

Appendix 3.4 (concl.)							
1	2	3	4	5	6	7	8
					KIDC		
11	Bhatsa Project	Birwadi LIS	May 2007	May 2010	Change in design	After issuing the work order, the location of pump house was changed on the basis of Central Design Organisation, Nashik directives.	10.51
12	Dendonwadi Minor Project	Dam work	January 1998	June 2001	Improper survey	As against the envisaged water storage of 10.16 mcum, water storage of 1.37 mcum could be achieved as the State Highway was falling under the submergence area.	26.44
					VIDC		
13	Antargaon Minor Project	Dam work	February 2006	February 2010	Improper survey	Dam site shifted downstream as the envisaged storage was not possible.	14.17
						Total (B)	51.12
							209.79
					Grand Total (A+B)		
					Other issues (KIDC)		
14	Korle-Satandi	Dam work	January 2002	January 2006	Improper survey	Dam site was shifted upstream to acquire forest land of one ha instead of initially planned 4.36 ha, decrease in dam height <i>etc.</i>	
15	Virdi Minor Project	Dam work	April 2007	April 2011	Improper survey	Subsequent change of site, height of dam of <i>etc.</i> due to the demands of stakeholders.	

Appendix 3.5 (Reference: Paragraph 3.2.8; Page 42) Inadequacies in preparation of estimates (in ₹ crore)			
Name of IDC and name of the project	Name of work (name of the agency)	Inadequacies in preparation of estimates	Amount involved
MKVDC (Tarli major irrigation project)	Construction of Koparde Approach Canal Km 0 to 32 (Prasad & Co)	Labour Welfare Cess ¹⁷¹ (LWC) of one <i>percent</i> was included and technical sanction was accorded (April 2012) by CE, Special Project, WRD for additional and extra works though the original agreement was finalised before 1 July 2010. Government accepted (July 2013) the observation and stated that the amount would be deducted from the contractor's bills.	2.24
KIDC (Korle-Satandi medium irrigation project)	Construction of dam (M/s Noble India, Jaipur)	Cofferdam ¹⁷² is required to be constructed during gorge filling. However, since the cofferdam was not included in the original estimates, the same was awarded (October 2009) to the contractor as an extra item for ₹ 73.83 lakh resulting in extra expenditure due to higher EIRL compared to the rates at the time of calling (October-November 2001) of tender. Government stated (July 2013) that in the original project report gorge filling was to be done in two stages but as per the site condition and as suggested by CDO, Nashik the gorge filling was required to be completed in one season. The reply indicates inadequacies in preparation of estimates.	0.74
GMIDC	17 ¹⁷³ Barrage works	Estimates of major/medium projects involving manufacture and erection of gates of barrages revealed that the item rates were framed by the project authorities including Central Excise duty ¹⁷⁴ (CED) and Service Tax ¹⁷⁵ though they were exempt. Further, WRD neither ensured payment of these duties and taxes to the Central Excise Department nor recovered the same from the contractors. Government stated (July 2013) that while framing the estimates it was presumed that the components would be manufactured/fabricated at workshop rather than at work site. But the contractors decided to establish workshop at site only. It further stated that cost of establishing workshop at sites requires capital expenditure and recurring expenditure which was not included in the estimates. The reply is not acceptable as the contractors had carried out fabrication works at the dam site and were entitled to CED exemption. Therefore, loading of CED in the estimates was incorrect. Further, GMIDC had already factored in the workshop charges in addition to overhead charges at 10 <i>per cent</i> . No comments were offered on service tax exemption.	30.22
			33.20

¹⁷¹ As per the GR (17 June 2010), Labour Welfare Cess at one *per cent* of the cost of work should be recovered from those contractors whose agreements were finalised on and after 1 July 2010

¹⁷² A temporary enclosure built within a water body for creating a dry work area

¹⁷³ Tarugavan, Dhalegaon, Mudgal, Muli, Sai, Shivani, Lasra, Somanthali, Ghatne, Babhli, Balegaon, Amdura, Digras, Mangrul, Apegaon, Hiradpuri and Waki

¹⁷⁴ Structures and parts of structures of iron and steel fabricated at site of work for use in construction are exempt from payment of duty vide Notification dated 24 February 2005 as amended

¹⁷⁵ Service tax is exempt from construction services of dam as it is excluded from the definition of construction services as per Section 65 (25b) of the Finance Act, 1994

Appendix 3.6 (Reference: Paragraph 3.3.1; Page 47) Contracts awarded without inviting tenders						
Sr. No.	Name of project	Name of the contractor	Nature of original work	Type of work awarded without inviting tender	Amount in (₹ crore)	Government reply (July 2013)
1.	2.	3.	4.	5.	6.	7.
MKVDC						
1	Dhamini Medium Irrigation Project	M/s Shri D.Y. Uppar, and M/s G.Shankar & Anand SM	Dam work	Horizontal Sand Mat ¹⁷⁶ (March 2009)	48.81	The work of horizontal sand mat and casing work was to be carried out simultaneously hence, awarded to the same contractor. Reply is not acceptable as in that case the item of work should have been included in the original estimates.
2	Tarli - Major Irrigation Project	M/s Prasad & Co Ltd, SEW Construction Ltd, Hyderabad (Joint Venture)	Dam work	Ring Road (December 2006)	10.71	The existing contractor was ready to execute the work with his own resources hence, to avoid further claims due to stoppage of work, the work was awarded to the same contractor. The reply is not tenable as the type of work awarded was different from the tendered work and could have been awarded after due process of tendering to obtain competitive rates.
3		M/s Prasad & Co (P.W) Ltd	Dam work	Tunnel Work (March 2012)	125.69	This was a technical change and no other work outside the scope of the original work was awarded to the contractor. The reply is not acceptable as the tunnel work was a specialised nature of work and separate bidding was necessary to obtain competitive rates.

¹⁷⁶ The sand mat is in the form of band of 20 meter in width and 60 m on upstream side on each berm and laid continuously on alternate berms on downstream side

Appendix 3.6 (continued)						
1	2	3	4	5	6	7
4	Urmodi Major Irrigation Project	M/s Mulay Brothers Pvt Ltd, Amit constructions (Joint Venture)	Dam work	Irrigation Cum Power Outlet (ICPO) (June 2008)	2.30	The work of ICPO was initially stopped (2000) due to paucity of funds, restarted in 2005 and finally terminated in 2007. The balance work was attached to the contractor executing dam work as the project was included in a time-bound programme. The reply is not acceptable as the work of ICPO should have been tendered separately and then executed.
5		Shri R.B Ghordke	Canal (Ch. 0/0 to 07/00) of Urmodi RBC	Canal Km. Ch. 8/00 to 16/100 of Urmodi RBC	5.81	The attachment of the said work was preferable since the tender was based on old DSR and also due to reduction in the original scope of tender. Reply is not tenable as the canal work was to be executed in a different stretch and accordingly bids should have been invited.
Total (A)					193.32	
GMDC						
1	Nandur Madhameshwar	M/s Harwins constructions	Earth work, spill-way, guide wall, head regular on Waki river	Rehabilitation works in Korpagaon New Gaothan	1.47	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
2	-- do --	M/s Muley Bros	Construction of Bhawali Dam	Construction of gutter along road rehabilitated village Bhawali & Manveda	0.84	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
3	Ugilewadi Storage Tank	M/s Pooja Constructions.	Dam work i.e. head works of the storage tank	Bringing casing material for dam from borrow area (0.5 km) ₹ 8.95 lakh and change in grade of concrete from Uncoarsed Rubble to Cement Concrete M-15 ₹ 12.15 lakh.	0.21	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.

Appendix 3.6 (continued)						
1	2	3	4	5	6	7
4	Shivali Storage Tank	M/s Adi Constructions. Osmanabad	Dam work i.e. head works of the storage tank	Construction of alternative road under Shivali and road	0.24	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
5	Molwan Storage Tank	M/s Krithi Constructions.	Dam work i.e. head works of the storage tank	Construction of approach road	0.41	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
6	Manjra Project	M/s Shradha & Mahalaxmi (Joint Venture)	Dongargaon Barrriage	Submergence bridge	3.99	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
7	Manjra Project	M/s Garje Steel Industries Latur	Borgaon-Anjanpur Barrriage	Construction of service bridge necessary for M & R of the barrage gates	0.33	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
8	Manjra Project	M/s Garje Steel Industries Latur	Borgaon-Anjanpur Barrriage	Approach road	0.15	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
9	Ravankola Storage Tank	M/s S.D. Constructions.	Dam work i.e. head works of the storage tank	Submergence road	1.25	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
10	Deeegaon Storage Tank	M/s Nita Constructions	Deeegaon KTW	Construction of road under submergence	0.25	Additional works were executed to save time required in tender process. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.

Appendix 3.6 (continued)						
1	2	3	4	5	7	
11	Upper Pravara Project	M/s New Asian Constructions	Construction of Masonry dam up to a height of 610 m alongwith irrigation & Power outlet of Nilwande-II	Originally only truncated section of masonry dam (up to 610 m height of dam) for ₹ 35.63 crore was given, later on the Department attached the work of height raising and widening of dam from 610 m to 613m at a cost of ₹ 58.45 crore in May 2000 and further attached the work of height raising up to 652m in December 2003 for ₹ 63.94 crore.	122.39	Due to opposition from PAPs and fund constraints, only truncated section of dam (up to 610 m) was allotted to contractor initially in 1995 and subsequently additional work was allotted. Reply is not tenable as opposition by PAPs and shortage of funds cannot be a reason for partial allotment of work initially and subsequently awarding the full work without tendering.
12	Bhabhali Project	Soma Enterprise Ltd.	Construction of Bhabhali High Level barrage	Original civil works for ₹ 39.29 crore for barrage was allotted in August 2004 and mechanical works costing ₹ 65.06 crore was allotted in April 2006.	65.06	The mechanical works were inseparable from civil works. Reply is not acceptable as in another project at Vishnupuri, mechanical works of 12 barrages were awarded independently through open tender.
Total (B)					196.59	
KIDC						
1	Shirsadi Minor Irrigation Project	Chowgule construction Company	construction of dam	Construction of canals	2.50	The Executive Director of KIDC was competent to award the canal work to the same contractor as additional work. The reply is not acceptable as awarding of work without inviting tender violated the provisions of MPW manual .
2	Korle-Satandi Medium Irrigation Project	Noble Construction Jaipur	Construction of dams	Construction of approach road	0.38	There was a saving of ₹ 1.28 lakh as a result of executing of the work through sanctioned tender. The reply is not acceptable as the department should have resorted to tendering to obtain competitive rates, as the work was of different nature.

Appendix 3.6 (concl.d.)						
1	2	3	4	5	6	7
3	Nardave Medium Irrigation Project	M/s R. N. Naik and Sons	Construction of dam	Rehabilitation work of levelling of land and providing civic amenities	22.45	Rehabilitation works of different villages were allotted to three different contractors. However, remaining rehabilitation works were entrusted to the prime contractor of dam in order to keep progress of both the works. It was also stated that 80 per cent of the rehabilitation work was completed till May 2012 and it was proposed to complete the work and shift the PAPs by December 2013. Reply is not tenable as in that case the Government should have tendered the remaining work to obtain competitive rates.
				Total (C)	25.33	
TIDC						
1	Dhule Medium Project Division	M/s Rana Projects International Ltd	Construction of earthen dam, Akkalpada	Construction of civil amenities at rehabilitation site	4.26	Additional works were allotted without tendering to save time and cost. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
2	Waghur Dam Division, Jalgaon	M/s A Prabhakar Reddy	Construction of slab culvert	Survey of command area	1.79	Additional works were allotted without tendering to save time and cost. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
3	Waghur Dam Division, Jalgaon	M/s A Prabhakar Reddy	Constructing of earthen dam	Survey of structure	2.30	Additional works were allotted without tendering to save time and cost. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
4	Minor Irrigation Division, Jalgaon	M/s Anup singh and sons	Constructing of MI Tank, Sur	Construction of diversion of road	0.97	Additional works were allotted without tendering to save time and cost. Reply is not acceptable as the additional works were incidental to the original works hence, they could have been included in the original estimates.
				Total (D)	9.32	
Grand Total (A+B+C+D)					424.56	

Appendix 3.7 (Reference: Paragraph 3.3.4; Page 51) Non-recovery/Short-recovery of royalty charges					
Name of IDC	Name of project	Nature of work (Name of agency)	Audit findings in brief	Government reply (July 2013) and audit remarks	Short-recovery (₹ in crore)
1	2	3	4	5	6
MKVDC	Urmodi	Work of Construction of earthen dam with gated spill way across the river Urmodi {M/s Mulay Brothers Pvt. Ltd. & M/s Amit Construction (Joint Venture)}	Payment for construction of embankment for hearing zone and casing zone ¹⁷⁷ involving use of excavated material (54.08 lakh cum) was paid up to June 2012. However, royalty charges amounting to ₹ 3.06 crore was not recovered from the contractor's bills despite non-production of challan towards payment of royalty charges by the contractor.	Royalty charges were included in the estimates and contractors would have quoted higher rates if the royalty charges were not included in the estimates. The reply is not acceptable as royalty charges were already included in the estimates and was recoverable on non-production of challans by contractors.	3.06
	Kitwad -2	Construction of MI Tank (M/s Bhaskar Reddy)	The contract price was inclusive of royalty charges. However, despite non-production of challan royalty charges amounting to ₹ 1.06 crore was not recovered.	The royalty charges would be recovered from the payment of extra items to the contractor.	1.06

¹⁷⁷ A zone of impervious earth within a zoned earthen or rockfill dam while casing zone is the outer side of hearing zone placed with pervious soils so as to protect the hearing zone

Appendix 3.7 (concl.)					
1	2	3	4	5	6
	Uttarmand	Construction of Dam (M/s L V Kunjir)	The contract price was inclusive of royalty charges. However, apart from the payment of contract price inclusive of royalty charges, additional payment of ₹ 72.38 lakh was made on the basis of challan produced resulting in double payment of royalty charges.	There was no provision in the tender for recovery of royalty charges. Extra item was sanctioned for payment of royalty charges to the contractors. Reply is not acceptable as it was clarified to the contractors in the pre-bid meeting (January 1997) that contractors were to bear the royalty charges and thus, the rate was inclusive of royalty charges. Therefore, an additional payment of ₹ 72.38 lakh resulted in double payment.	0.72
	Pimpalgaon Dhale	Canal work (M/s Shelke Construction) Canal work (M/s Bhagyashree Construction)	Royalty charges not recovered despite non-production of proof of payment of royalty charges by the contractor. Royalty charges not recovered despite non-production of proof of payment of royalty charges by the contractor.	Recovery would be made from the contractors' bills.	0.14 0.28
VIDC	Pangra Bandi	Construction of earthen dam, weir and regulator (M/s Sanjay Kalbhori and Associates)	Recovery of ₹ 54.77 lakh in the fifth running account bill was approved and recorded in measurement book on account of non-production of challan by the contractor in support of payment of royalty charges. However, the bill was paid without recovering the amount, resulting in undue benefit of ₹ 54.77 lakh to the contractor. EE replied (May 2012) that the contractor requested not to recover the royalty charges.	As the contractor was obtaining royalty passes to avoid double payment to the Revenue Authority, his request was accepted in V RA bill. It was stated that the total royalty charges to be recovered up to 7 th RA bill (August 2012) was ₹ 97.74 lakh of which ₹ 51.49 lakh was recovered and balance of ₹ 46.25 lakh proposed to be recovered in the 8 th RA bill. The reply clearly indicates that financial accommodation was continued to be granted to the contractor by not recovering the royalty charges in time.	0.46
					5.72

Appendix 3.8
(Reference: Paragraph: 3.4.2; Page 56)
Data inconsistencies in Irrigation Status Reports

a) **Discrepancies in number of irrigation projects as per ISR of WRD and Regional ISRs**

Year	ISR (as per WRD)	RISR Compilation	Understated (-) in ISR
2007-08	3076	3330	(-) 254
2008-09	3254	3495	(-) 241
2009-10	3575	3576	(-) 1
2010-11	3575	3702	(-)127

b) **Discrepancies in the number of irrigation projects in ISR and RISR**

(Number of irrigation projects)

Year	ISR (as per WRD)	RISR Compilation by Audit	Over-statement (+)/ Understatement (-) in ISR
2007-08	3076	(-) 2224	(+) 852
2008-09	3254	(+) 2690	(+) 564
2009-10	3575	(+) 2723	(+) 852
2010-11	3575	(+) 3030	(+) 545

c) **Discrepancies in projected IP to be created and IP utilised as per ISR and RISR**

(IP in '000' hectares)

Year	IP to be created from all the projects (completed and that in progress)			Utilized IP		
	ISR (as per WRD)	RISR Compilation by WRD	Over-statement (+)/ Understatement (-) in ISR	ISR (as per WRD)	RISR Compilation by WRD	Over-statement (+)/ Understatement (-) in ISR
2007-08	5484.03	5484.03	0	2764.68	2766.28	(-) 1.6
2008-09	6165.28	6165.28	0	2731.64	2732.13	(-) 0.49
2009-10	6640.74	6689.86	(-) 49.12	2542.39	2542.37	(+) 0.02
2010-11	7238.75	7238.75	0	2954.68	2954.78	(-) 0.1

d) **Discrepancies in designed storage and live storage as on 15th October each year**

(Volume of water in mm³)

Year	Designed storage			Actual water storage as on 15 th October		
	ISR (as per WRD)	RISR Compilation by Audit	Over-statement (+)/ Understatement (-) in ISR	ISR (as per WRD)	RISR Compilation by Audit	Over-statement (+)/ Understatement (-) in ISR
2007-08	29115.71	31108.814	(-) 1993.104	25489.18	26941.481	(-) 1452.3
2008-09	33070.45	32150.34	(+) 920.11	24802.74	24441.01	(+) 361.73
2009-10	33211.1	32870.82	(+) 340.28	19365.78	19189.60	(+) 176.18
2010-11	33385.49	32999.85	(+) 385.64	27309.26	27582.11	(-) 272.85

Appendix 3.8 (concl.)

e) Discrepancies in use of water for irrigation purpose

(Volume of water in mm³)

Year	Irrigation use		
	ISR (as per WRD)	RISR Compilation by Audit	Over-statement (+)/ Under-statement (-) in ISR
2007-08	16412.75	16643.55	(-) 230.80
2008-09	15517.18	15975.77	(-) 458.59
2009-10	12113.64	13096.69	(-) 983.05
2010-11	15446.60	15409.38	(+) 37.22

f) Discrepancies in use of water for non-irrigation purpose

(Volume of water in mm³)

Year	Drinking water use			Industrial and other use		
	ISR (as per WRD)	Audit Compilation from RISR	Over-statement (+)/ Under-statement (-) in ISR	ISR (as per WRD)	Audit Compilation from RISR	Over-statement (+)/ Under-statement (-) in ISR
2007-08	2801.80	2989.829	(-) 188.029	2738.84	2768.074	(-) 29.234
2008-09	3444.72	3447.79	(-) 3.07	2330.75	2252.80	(+) 77.95
2009-10	3151.41	3461.44	(-) 310.03	1611.78	1707.97	(-) 96.19
2010-11	3260.22	3374.26	(-) 114.04	2616.04	2565.83	(+) 50.21

g) Discrepancies in number of projects against which IP created and utilised as per ISR and Economic Survey Report:

Year	Number of projects		
	ISR (as per WRD)	Economic Survey Report	Over-Statement (+)/ Understatement (-) in ISR
2007-08	3076	3090	(-) 14
2008-09	3254	3251	(+) 3
2009-10	3575	3332	(+) 243
2010-11	3575	3452	(+) 123

h) Maximum live storage shown more than the designed live storage in Water Audit Reports

Analysis of data based on which Water Audit Report is prepared revealed that in 28 records involving 19 projects, during 2007-12, the maximum live storage (water actually available for use) shown in Water Audit report was more than the designed live storage of the project. The percentage of excess live storage ranged between 101 and 364.

i) Incorrect balance of water in Water Audit Reports

On the basis of inflow and outflow, the balance quantum of water was derived and compared with the actual balance shown in the database for the period from 2006-10. Audit observed that out of 1,147 records:

- i) In only 583 records, the balance quantum of water as of 30 June matched with the database figures;
- ii) In 306 records, the balance as of 30 June was shown less than the quantum worked out by audit, as per the database obtained from Maharashtra Water Research and Development Centre; and
- iii) In 214 records, the total outflow of water was more than the total inflow of water. In the remaining 44 records the total outflow was less than total inflow.

Appendix 4.1 (Reference: Paragraph 4.2.2; Page 62) Statement showing Category II deficiencies in dams			
Sr. No.	Name of dam	Deficiencies	Remedial measures suggested
1	Paithan dam (Jayakwadi Project)	Longitudinal cracks were observed at Chainage 216 to 217, 228 to 230, 237 to 248	Longitudinal cracks should be excavated up to hearing and filled with murum and sand.
2	Manjara dam	All the drains including drains on both the flanks were not functioning and cross drains and toe drains were deshaped.	Drainage arrangement to be kept effective by periodical cleaning and disturbed pitching of drains to be reset and drains desilted. It was also suggested to clear outfall for drains to avoid pools or stagnant water in the drains and at the toe of the dam and in the river portion.
3	Majalgaon dam.	Leakage was observed in hydropower generation house and scouring observed near the guide wall.	Proper treatment of scouring in rich cement concrete and necessary repairs were suggested.
4	Isapur dam	Out of 18 Piezometers (to measure the total pore pressure), only four were working.	It was suggested to get the Piezometers repaired in consultation with Maharashtra Engineering Research Institute (MERI).
5	Siddheswar dam	The crest profile and downstream side bottom width reduced.	Any local damages to masonry on water side face was to be repaired with masonry/concrete filling depending upon the extent of damage.
6	Sina Kolegaon dam	Heavy seepage in gallery and gallery being full of water.	It was suggested to dewater the gallery and find out reasons for seepages and carry out repairs by providing proper treatment.

Appendix 5.1
(References: Paragraphs 3.1 and 5.2.1; Pages 25, 71 and 72)

The position of IP projected to be created, IP created and IP utilised in respect of total projects handed over by GoM and new projects taken up by IDCs (in thousand ha)

Region	Name of IDC	Total IP projected to be created out of total projects handed over and new projects taken up (June 2013)				IP created (June 2013)				IP utilised As on June 2012			
		A	B	C	Total	A	B	C	Total	A	B	C	Total
Vidarbha	VIDC	1127.41	262.55	189.33	1579.29	291.04	122.67	73.46	487.17	80.62	21.83	16.59	119.04
Marathwada	GMIDC	851.55	114.55	190.86	1156.96	547.12	73.83	145.89	766.84	0.00	0.00	0.00	0.00
Rest of Maharashtra	MKVDC	1681.94	291.94	546.50	2520.38	990.54	240.52	512.41	1743.47	1073.44	132.60	327.69	1533.74
	KIDC	108.32	84.04	63.11	255.46	44.27	8.67	22.23	75.17	3.83	0.23	2.21	6.27
	TIDC	342.40	142.40	68.20	553.00	29.00	83.00	59.00	171.00	4.00	28.00	13.00	45.00
	Total	4111.62	895.48	1058.00	6065.09	1901.97	528.69	812.99	3243.65	1161.89	182.66	359.49	1704.05

Source: Information furnished by the IDCs
Note 1: A: Major projects; B: Medium project and C: Minor projects
Note 2: Figures of IP utilised has not been compiled by the IDCs
Note 3: Two districts of GMIDC i.e. Ahmednagar and Nashik are in Rest of Maharashtra

Appendix 5.2 <i>(Reference: Paragraph: 5.2.1; Pages 71 and 72)</i> IP projected to be created, IP created and IP utilized (Area in lakh ha)								
Year	Projected IP to be created	Created IP	IP utilized through canals including rivers	IP utilized through wells	Total IP utilized (Col 4+5)	Percentage of total IP utilization to IP created (Col 6/3 x 100)	Percentage of IP utilization through canals including rivers to total IP utilized (Col 4/6 x 100)	Percentage of IP utilization through wells to total IP utilized (Col 5/6 x 100)
1	2	3	4	5	6	7	8	9
2000-01	42.71	37.06	12.98	4.66	17.64	47.60	73.58	26.42
2001-02	43.17	37.69	12.5	4.58	17.08	45.32	73.19	26.81
2002-03	43.64	38.12	13.18	5.24	18.42	48.32	71.55	28.45
2003-04	44.16	38.63	12.44	4.41	16.85	43.62	73.83	26.17
2004-05	44.58	39.13	12.59	4.4	16.99	43.42	74.10	25.90
2005-06	45.23	40.03	16.17	5.97	22.14	55.31	73.04	26.96
2006-07	49.75	41.32	18.35	8.47	26.82	64.91	68.42	31.58
2007-08	63.44	43.31	18.97	8.68	27.65	63.84	68.61	31.39
2008-09	64.36	44.86	18.24	9.07	27.31	60.88	66.79	33.21
2009-10	64.78	46.34	16.56	8.87	25.43	54.88	65.12	34.88
2010-11	65.29	47.37	18.41	11.14	29.55	62.38	62.30	37.70
2011-12	66.14	48.26	20.43	12.08	32.51	67.36	62.84	37.16
Percentage increase in 2011-12 compared to 2000-01		30.22	57.40	159.23	84.30			

Source: Figures for 2000-01 to 2010-11 from Irrigation Status Reports of WRD and figures for 2011-12 consolidated from latest available ISR of the six regions in the State

Appendix 5.3 (Reference : Paragraph 5.2.3; Page 75) Statement showing evaporation loss of more than 200 per cent with reference to live storage of water as on 15 October								
Sl. No.	Project	Project type	District	Year		Live storage (in mcum)	Evaporation (in mcum)	Percentage of evaporation to live storage
				From	To			
1	Tiru	Medium	Latur	2007	2008	3.180	7.143	224.62
2	Bagheda	Medium	Bhandara	2008	2009	0.130	0.909	699.23
3	Chandai	Medium	Chandrapur	2008	2009	1.120	4.509	402.59
4	Chandpur	Medium	Bhandara	2008	2009	0.096	1.456	1516.67
5	Dina	Major	Gadchiroli	2008	2009	3.040	6.416	211.05
6	Koradi	Medium	Buldhana	2008	2009	1.900	4.391	231.11
7	Sorna	Medium	Bhandara	2008	2009	0.003	0.302	10066.67
8	Adan	Medium	Washim	2009	2010	2.520	7.098	281.67
9	Naleshwar	Medium	Chandrapur	2009	2010	1.080	2.799	259.17
10	Kukadi Complex	Major	Pune	2009	2010	19.920	47.165	236.77
	Kukadi Complex	Major	Pune	2010	2011	10.710	32.905	307.24
11	Bhokarbari	Medium	Jalgaon	2009	2010	0.284	0.979	344.58
12	Masoli	Medium	Parbhani	2009	2010	0.415	2.631	633.98
13	Nagya Sakya	Medium	Nashik	2009	2010	1.270	2.900	228.35
14	Tawarja	Medium	Latur	2009	2010	1.382	5.664	409.84
15	Turori	Medium	Osmanabad	2009	2010	0.093	0.608	653.76
16	Upper Dudhana	Medium	Jalna	2009	2010	0.844	1.704	201.90
17	Khadakpurna	Major	Buldhana	2010	2011	13.645	27.512	201.63
Source : Analysis done by Audit on the database maintained by MWRDC, Aurangabad								

Appendix 5.4 <i>(Reference : Paragraph 5.2.7; Pages 86 and 87)</i> Irrigation system performance in Bhatsa RBC, Ujjani LBC & RBC and Neera RBC		
Year and Name of Project / Canal	Irrigation system performance during Rabi	Irrigation system performance during hot weather
Standard fixed by GoM	150 ha/mcum	110 ha/mcum
2007-08		
Ujjani Left Bank Canal	52.21	41.78
Ujjani Right Bank Canal	54.70	54.53
Bhatsa Right Bank Canal	38.55	Cropping not planned during summer
Neera Right Bank Canal	123.13	108.19
2008-09		
Ujjani Left Bank Canal	83.62	50.44
Ujjani Right Bank Canal	82.44	40.28
Bhatsa Right Bank Canal	43.30	Cropping not planned during summer
Neera Right Bank Canal	129.83	104.16
2009-10		
Ujjani Left Bank Canal	101.84	65.32
Ujjani Right Bank Canal	77.85	39.90
Bhatsa Right Bank Canal	39.04	Cropping not planned during summer
Neera Right Bank Canal	140.35	91.87
2010-11		
Ujjani Left Bank Canal	97.83	67.23
Ujjani Right Bank Canal	51.82	44.22
Bhatsa Right Bank Canal	31.75	Cropping not planned during summer
Neera Right Bank Canal	109.94	102.60
2011-12		
Ujjani Left Bank Canal	84.17	82.86
Ujjani Right Bank Canal	48.56	43.81
Bhatsa Right Bank Canal	24.65	Cropping not planned during summer
Neera Right Bank Canal	117.11	113.59
Source : Water account of the projects		

Appendix 5.5
(Reference: Paragraph 5.2.7.1; Page: 87)
Canal efficiency of major projects in the six regions of the State

Region	Year	No. of major Projects	Water in Left Bank Canal				Water in Right Bank Canal				Total water in Left Bank Canal				Total water in Right Bank Canal				Total water drawn at head in canal	Total water released in canal	Efficiency Of canal (percentage)				
			Rabi		Hot Weather		Rabi		Hot Weather		Drawn at head		Released in canal		Canal Efficiency		Drawn at head					Released in canal		Canal Efficiency	
			Drawn at head	Released in canal	Drawn at head	Released in canal	Drawn at head	Released in canal	Drawn at head	Released in canal	Drawn at head	Released in canal	Drawn at head	Released in canal	Canal Efficiency	Canal Efficiency	Drawn at head	Released in canal				Drawn at head	Released in canal	Canal Efficiency	Canal Efficiency
Amravati	2007	3	19.40	112.19	0.00	22.28	8.30	230.02	9.67	65.96	19.40	134.47	14.43	17.97	295.98	6.07	37.37	430.45	8.68						
	2008	1	20.42	27.91	0.00	6.07	10.28	14.30	0.00	3.31	20.42	33.98	60.08	10.28	17.61	58.38	30.70	51.59	59.50						
	2009	1	0.00	43.49	0.00	8.66	0.00	185.86	0.00	20.65	0.00	52.16	0.00	0.00	206.51	0.00	0.00	258.67	0.00						
	2010	3	42.28	82.79	18.68	54.00	86.59	168.86	15.71	75.95	60.96	136.78	44.57	102.30	244.81	41.79	163.26	381.59	42.78						
Average																									
Aurangabad	2007	5	573.83	721.60	322.30	441.11	261.73	364.09	217.02	301.04	896.13	1162.70	77.07	478.75	665.14	71.98	1374.89	1827.84	75.22						
	2008	4	537.54	610.03	504.68	667.07	254.15	349.79	189.46	296.74	1042.22	1277.11	81.61	443.61	646.53	68.61	1485.83	1923.63	77.24						
	2009	2	35.88	45.56	15.45	45.24	11.00	30.67	0.52	45.98	51.33	90.80	56.53	11.52	76.65	15.03	62.85	167.45	37.53						
	2010	5	276.11	338.30	341.63	480.74	176.44	221.35	240.51	318.15	617.64	819.04	75.42	416.95	539.51	77.28	1034.69	1358.54	76.16						
	Average																								
Konkan	2007	1	0.00	3.30	0.00	0.30	20.34	50.51	0.00	8.74	0.00	3.60	0.00	20.34	59.26	34.33	20.34	62.86	32.37						
	2009	1	21.62	47.36	0.00	2.86	57.32	94.37	0.00	8.21	21.62	50.22	43.05	57.32	102.57	55.89	78.94	152.79	51.67						
	2010	1	2.77	4.62	0.00	0.56	36.64	59.10	0.00	13.76	2.77	5.18	53.56	36.64	72.86	50.29	39.42	78.04	50.51						
Average																									
Nagpur	2006	1	0.00	443.34	0.00	143.97	0.00	185.53	0.00	110.12	0.00	587.31	0.00	0.00	295.65	0.00	0.00	882.96	0.00						
	2007	2	0.00	437.81	0.00	28.96	0.00	122.69	0.00	466.78	0.00	466.78	0.00	0.00	335.41	0.00	0.00	802.18	0.00						
	2008	1	0.00	142.42	0.00	18.56	0.00	124.69	0.00	123.26	0.00	160.99	0.00	0.00	247.95	0.00	0.00	408.93	0.00						
	2009	2	0.00	412.45	0.00	22.57	0.00	200.17	0.00	127.60	0.00	435.02	0.00	0.00	327.77	0.00	0.00	762.78	0.00						
	2010	2	0.00	289.10	0.00	19.81	0.00	198.57	0.00	105.07	0.00	308.91	0.00	0.00	303.64	0.00	0.00	612.54	0.00						
Average																									
Nashik	2007	5	146.10	237.84	94.71	182.05	213.42	353.45	149.97	316.13	240.81	419.90	57.35	363.39	669.57	54.27	604.20	1089.47	55.46						
	2008	6	178.79	354.52	69.56	218.23	195.42	382.26	185.61	366.69	248.36	572.75	43.36	381.03	748.95	50.88	629.39	1321.70	47.62						
	2009	6	62.58	169.85	97.85	204.07	113.66	215.53	157.11	304.51	160.43	373.92	42.90	271.37	520.04	52.18	431.80	893.95	48.30						
	2010	7	120.23	250.56	131.32	265.64	102.25	186.26	299.36	497.45	251.55	516.20	48.73	401.62	683.70	58.74	653.17	1199.90	54.44						
Average																									
Pune	2007	7	440.31	923.82	300.04	867.83	340.17	644.24	214.73	457.35	740.35	1791.66	41.32	554.90	1101.59	50.37	1295.25	2893.25	44.77						
	2008	8	443.65	758.36	415.82	854.48	295.58	593.82	237.83	560.10	859.47	1612.83	53.29	533.42	1153.92	46.23	1392.89	2766.76	50.34						
	2009	8	311.19	644.65	431.30	887.97	237.41	483.92	279.67	641.15	742.49	1532.62	48.54	517.08	1125.07	45.96	1259.57	2657.69	47.39						
	2010	8	302.14	690.74	436.65	878.82	275.76	598.87	250.53	559.64	738.80	1569.57	47.07	526.29	1158.51	45.43	1265.08	2728.08	46.37						
Average																									

Source: Database maintained by MWRDC

Note: Canal efficiency = (Total water drawn at head ÷ Total water released in canals) X 100

Appendix 5.6 (Reference : Paragraph 5.2.7.2; Page 89) Planned and actual cropping pattern in Ujjani project												
Cropping pattern	Projected Cropped Area (ha)	Percentage of cropping pattern to total cropped area	Actual Cropped Area									
			2007-08		2008-09		2009-10		2010-11		2011-12	
			Area (ha)	Percent- tage to Actual cropped area	Area (ha)	Percent- tage to Actual cropped area	Area (ha)	Percent- tage to Actual cropped area	Area (ha)	Percent- tage to Actual cropped area	Area (ha)	Percent- tage to Actual cropped area
Kharif	140382	51.36	27558	14.79	26832.9	14.51	29638.5	16.89	22238	12.68	30515	15.96
Rabi	118272	43.28	52154	27.98	51974.2	28.10	42521.1	24.24	41080	23.43	43734	22.88
Hot Weather	3690.3	1.35	30579	16.41	32492.1	17.56	29113.8	16.60	30386	17.33	34776	18.19
Two Seasonal	7263.23	2.66	19	0.01	22	0.01	37.2	0.02	481	0.27	0	0.00
Perennial	3690.3	1.35	76058	40.81	73665.5	39.82	74119.4	42.25	81142	46.28	82121	42.96
Total projected cropped area	273298	100.00	186368	100.00	184987	100.00	175430	100.00	175327	100.00	191146	100.00
Combined cropped area under Hot Weather and Perennial	7380.6	2.7	106637	57.22	106157.6	57.38	103233.2	58.85	111528	63.61	116897	61.15
Water use in mcum	1182.36		2056.69		1690.43		1609.48		1527.60		1869.91	
Ha/ mcum	231.146		90.615		109.432		108.997		114.773		102.222	
Percentage of area actually cropped to projected cropped area	100		68		68		64		64		70	

Source: Water Account and approved cropping pattern of Ujjani project

Appendix 5.7 (Reference : Paragraph 5.2.8.1; Page 90) Targets and achievement in respect of nine projects under CADWM					
Name of the project	Project component	Target during 2010-13	Achievement during 2010-13	Percentage of shortfall	
Krishna	Construction of field channels	3000	720	76	
Kukadi		20000	9783	51	
Chaskaman		3000	814	73	
Dhom Balkwadi		13900	3500	75	
Lower Wuna		378	264	30	
Upper pengangga		9000	2474	73	
Bhima		8404	4233	50	
Nandur					
Madhmeshwar		29802	13138	56	
Total			87484	34926	60
Krishna	Construction of field intermidiate and link drains	4250	6393		
Dhom Balkwadi		0	1215		
Upper pengangga		9000	2474	63	
Nandur					
Madhmeshwar		29802	13138	56	
Total		43052	23220	46	
Source: Annual progress reports of the respective projects					

Appendix 6.1 (Reference: Paragraph: 6.2; Pages 97 and 98) Recovery performance vis-à-vis arrears of water charges																			
Year	Opening balance			Recovery due in current year			Total recovery due			Actual recovery			Percentage shortfall in recovery	Closing balance			Difference between opening balance of the year and closing balance of the preceding year		
	Irrigation	Non-irrigation	Total	Irrigation	Non-irrigation	Total	Irrigation	Non-irrigation	Total	Irrigation	Non-irrigation	Total		Irrigation	Non-irrigation	Total			
2007-08	433.82	267.85	701.67	110.35	563.89	674.24	544.17	831.74	1375.91	70.47	556.54	627.01	473.70	275.20	748.90	--			
2008-09	489.20	380.25	869.45	112.95	695.37	808.32	602.15	1075.62	1677.77	71.05	602.11	673.16	531.10	473.51	1004.61	120.55			
2009-10	536.71	483.96	1020.67	95.00	715.11	810.11	631.71	1199.07	1830.78	69.94	732.69	802.63	561.77	466.38	1028.15	16.06			
2010-11	562.07	465.03	1027.10	96.24	670.46	766.70	658.31	1135.49	1793.8	79.03	666.87	745.90	579.28	468.62	1047.90	(-) 1.05			
2011-12	578.26	461.82	1040.08	102.67	508.90	611.57	680.93	970.72	1651.65	78.94	553.71	632.65	593.01	392.24	985.25	(-) 7.82			
2012-13	598.91	429.45	1028.56	82.98	670.12	753.10	681.89	1099.57	1781.46	63.10	443.05	506.15	618.78	656.52	1275.31	43.31			
Percentage increase in arrears in 2012-13 as compared to 2007-08													30.62	138.56	70.29				
Source: figures from 2007-08 to 2010-11 from ISR and from 2011-12 to 2012-13 from the information furnished by the WRD																			