

**Evaluation of Determination, Enforcement, Regulation and Monitoring of Entitlement in Pilot Projects for Rabi & Hot Weather Seasons of 2008-09**

1. As per provision in Section 11 (a) of the MWRRA Act 2005, the Authority, as a part of its powers, functions and duties, is required to determine the distribution of Entitlement for various categories of use and the equitable distribution of Entitlements of water within each category of use on such terms and conditions as may be prescribed. Further, under the provisions of Sections 11 (a), the Authority is required to establish a system of enforcement, monitoring and measurement of the Entitlements for the use of water to ensure that the actual use of water, both in quantity and type of use are in compliance with the Entitlements as issued by the Authority.
  
2. There are 236 projects included for system rehabilitation in the World Bank aided Maharashtra Water Sector Improvement Project (MWSIP) comprising 12 major, 11 medium and 213 minor covering a CCA of 6.68 lakh ha. In the first phase, the Authority plans to cover all these projects under the Entitlement programme in a period of 5-6 years in a phased manner. Some projects outside MWSIP are also being included for wider coverage. 20 pilot projects were included in 2007-08 and this was upscaled to 77 in 2008-09. Of these 77, 53 projects are included in MWSIP. A total of 147 WUAs are covered in these 77 projects for determining, enforcing, regulating and monitoring of Entitlements. Of these 147, 84 are in the 20 pilot projects selected in 2007-08 (upscaled from 79) and the rest 63 are in the new pilot schemes. Annexure 1 gives a list of the 77 projects, basin and number of WUAs included and whether the project is included in MWSIP.

3. An abstract of basin-wise & category-wise number of the 77 pilot projects selected for 2008-09 is given in table below

Category	Basin					Total WUA
	Krishna	Godawari	Tapi	Konkan	Total	
1. Major	2	5	1	-	8	34
2. Medium	1	7	2	-	10	51
3. Minor	22	29	7	1	59	62
	25	41	10	1	77	147

4. The various steps involved in the implementation of Entitlements are
- (i) identification of a suitable minor in the irrigation system in case of major & medium project where WUA is established and elections held, system is handed over to WUA and where water reaches the tail. In case of minor projects, the full project is included as usually they have only 1 WUA.
  - (ii) installation of measuring device (MD) at the head of off take of minor (Parshall flume, Standing Wave Flume, Cut Throat flume). In case of minor projects, the installation is done at the head of main canal. It needs to be ensured that the MD is properly installed and calibrated.
  - (iii) determination by the Authority of the Sanctioned Water Use Entitlement for the design year separately for rabi & hot weather for each project based on details received in prescribed proforma from field officers and conveying of this value to them
  - (iv) based on actual storage on 15<sup>th</sup> October, determination of Applicable Water Entitlement by project authorities separately for rabi & hot weather (based on design allocation between two seasons) and informing the Authority.
  - (v) conveying of Sanctioned Water Use Entitlement and Applicable Water Entitlement by River Basin Agency (field officers) to WUA.

- (vi) inviting of application by WUA for irrigation passes from its members.
- (vii) joint meeting of field officers and WUA to decide number of rotation, quantum of water per rotation and dates, based on indents received from members, to utilize the rabi Entitlement  
The programme is to be intimated to the Authority, Regulators & RBA by field officers.
- (viii) appointment of Regulators by the Authority for each project based on panel of 3 names proposed by WRD for independent verification and reporting on delivery of Entitlements.
- (ix) making available by RBA of prescribed forms to field officers, WUA and Regulators
- (x) delivery of rabi Entitlements and maintenance of rotation-wise gauge data including test check by Regulator
- (xi) at end of rabi, assessing water availability and demand for hot weather and reworking out WUA-wise Applicable Water Entitlement. This is to be intimated to the Authority.
- (xii) delivery of hot weather rotation after following similar steps as for rabi.
- (xiii) resolution of disputes between WUA & field officers by Disputes Resolution Officer.
- (xiv) hearing and disposal of appeals by Authority as appellate authority.

5. The procedure for determination of Entitlements is laid down in the rules for the MMISF Act 2005. The Authority has also brought out the following manuals and circulated them to field officers

- (i) Technical Manual for Fixing Regulating and Enforcing the Entitlements in Irrigation Projects
- (ii) Powers & Functions of Regulators and Responsibility of WRD officials.

Based on the experience of the pilot projects, the Authority will convert the above manuals into Regulations.

**6. Evaluation of Performance of Pilot Projects**

6.1. Number of projects actually considered from storage considerations.

Out of 77 projects, in 19 projects Entitlement could not be operationalised either because of live storage on 15<sup>th</sup> Oct. being less than 30% (in which case water is to be reserved for non-irrigation use only) or because there was no demand for water or no WUA was formed or no information received. Annexure 1 indicates the 19 projects.

6.2. Percentage of Entitlement Delivered

Annexure 2 gives project wise percentage of Entitlement delivered in rabi & hot weather in 57 balance projects. An abstract of this season wise is given below

6.3. Rabi Season

<u>Range of % Entitlement delivered</u>	<u>No. of projects</u>
> 100	5
100	5
91 - 100	4
81 - 90	5
71 - 80	3
61 - 70	7
51 - 60	8
41 - 50	1
31 - 40	10
21 - 30	2
11 - 20	3
0 - 10	4
	----
Total	57

For 1 project, no demand in Rabi.

### Hot Weather

Out of 58, only in 14 projects hot weather Entitlement was delivered and Abstract of Percent of Entitlement delivered as given below

<u>Range</u>	<u>No. of projects</u>
> 100	1
100	1
91 - 100	1
81 - 90	0
71 - 80	2
61 - 70	3
51 - 60	2
41 - 50	0
31 - 40	2
21 - 30	0
11 - 20	1
0 - 10	1
	-----
Total	14

### 6.3. Visit of Regulator

As per Authority's Manual, the Regulator has to make atleast 3 random checks in a rotation of 15 days. Annexure 3 gives project wise details of inspections / checks done by Regulator.

### 7. Analysis of Performance

- (i) Field officers took lot of time in sending details of storage position and Applicable Water Entitlement based on 15<sup>th</sup> Oct. storage. Even till Jan. 2009, these were being submitted. This exercise should have been completed by 31-10-2008.
- (ii) Field officers are not submitting details of rotation in prescribed proforma immediately after completion of rotation. Start & end dates,

total quantum delivered and dates of inspections by Regulator should be submitted immediately on completion of rotation.

- (iii) The delivery of rabi Entitlement has not been satisfactory. Out of 57 projects, only in 17 delivery was between 70% to 100%. In 5 cases, it was more than 100% and rest 35 it was below 70%.
- (iv) Field officers are not sending details of hot weather rotation. While in most projects there was no hot weather demand. For Harini Project, all balance water was delivered to the WUA selected out of 11, resulting in very high release vis-à-vis Entitlement.
- (v) The inspection visit of Regulators to the measuring device has been infrequent or even totally absent in many cases. The norm of 3 visits per rotation per WUA has to be followed.
- (vi) For major & medium projects, from the data furnished, it is very difficult to assess how many inspections the Regulators have made. Rotation-wise, WUA wise information should be given.
- (vii) For minor projects, there were a total of about 150 rotations. 450 inspections should have been done by Regulators but only about 130 were done.

## Annexure-1

### PILOT PROJECTS FOR ENTITLEMENT FOR THE YEAR 2008-09

Sr. No.	Name of Project	Basin	No of WUA under entitlement	Weather included in MWSIP	
				Yes	No
	<b>Old Pilot Scheme</b>				
	<b>Major</b>				
1	Kukadi	Krishna	10	Yes	
2	Ghod	Krishna	10	Yes	
3	Lower Manar*	Godavari	6	Yes	
4	Lower Wunna	Godavari	1		No
5	Hatnur	Tapi	2	Yes	
	<b>Medium</b>				
6	Mangi	Krishna	8	Yes	
7	Waghad	Godavari	24	Yes	
8	Katepurna*	Tapi	7	Yes	
9	Panzara	Tapi	2	Yes	
	<b>Minor</b>				
10	Diwale	Krishna	1	Yes	
11	Hiware	Krishna	1	Yes	
12	Benikre	Krishna	1	Yes	
13	Banganga	Krishna	3	Yes	
14	Nandwal	Krishna	1	Yes	
15	Chincholi	Krishna	2	Yes	
16	Anjani	Krishna	1	Yes	
17	Ambegaon*	Godavari	1	Yes	
18	Bhutekarwadi	Godavari	1	Yes	
19	Botezari*	Godavari	1	Yes	
20	Dongargaon	Godavari	1	Yes	
	Total		<b>84</b>		
	<b>New Pilots: Schemes proposed by WRD</b>				
	<b>Major</b>				
1	Palkhed	Godavari	1		No
2	Mula	Godavari	3	Yes	
3	Ozarkhed	Godavari	1		No
	<b>Medium</b>				
4	Sukhana	Godavari	2	Yes	
5	Gharni	Godavari	2	Yes	

Sr. No.	Name of Project	Basin	No of WUA under entitlement	Weather included in MWSIP	
				Yes	No
6	Chulband*	Godavari	2		No
7	Kolar	Godavari	1		No
8	Koradi*	Godavari	1	Yes	
9	Ghatsilpargaon	Godavari	2	Yes	
	<b>Minor</b>				
10	Walwad	Krishna	1		No
11	Chare	Krishna	1		No
12	Mamdapur	Krishna	1		No
13	Kalambwadi	Krishna	1		No
14	Tambave	Krishna	1	Yes	
15	Dhakani	Krishna	1		No
16	Kankatrewadi	Krishna	1		No
17	Atpadi	Krishna	1	Yes	
18	Siddhanath	Krishna	1	Yes	
19	Manpadle	Krishna	1	Yes	
20	Dudhebhavi*	Krishna	1		No
21	Mohri	Godavari	1	Yes	
22	Galan	Tapi	1	Yes	
23	Badrakha	Tapi	1	Yes	
24	Shewaga	Tapi	1	Yes	
25	Sugaon*	Godavari	1	Yes	
26	Nichpur	Godavari	1	Yes	
27	Mulzara	Godavari	1	Yes	
28	Aundha*	Godavari	1		No
29	Kakaddhaba*	Godavari	1		No
30	Suregaon*	Godavari	1		No
31	Wadad*	Godavari	1		No
32	Banoti	Tapi	1	Yes	
33	Bharaj	Godavari	1	Yes	
34	Pimparkheda	Godavari	1	Yes	
35	Pardeshwadi	Godavari	1	Yes	
36	Charthana	Godavari	1		No
37	Belgaon	Krishna	1	Yes	
38	Golangri	Godavari	1	Yes	
39	Kambali	Krishna	1	Yes	
40	Harani	Krishna	1	Yes	
41	Yamai	Krishna	1	Yes	
42	Nagthana	Godavari	1	Yes	



Sr. No.	Name of Project	Basin	No of WUA under entitlement	Weather included in MWSIP	
				Yes	No
43	Nawegaon Bandh*	Godavari	1		No
44	Khapri	Godavari	1		No
45	Dastapur	Godavari	1	Yes	
46	Ghoti*	Godavari	1	Yes	
47	Nanduri	Tapi	1		No
48	Kolhi	Tapi	1		No
49	Dhamangaon (S)*	Tapi	1		No
50	Anji	Godavari	1		No
51	Ashti	Godavari	1	Yes	
52	Umari	Godavari	1	Yes	
53	Ambazari	Godavari	1	Yes	
54	Kannamwargram	Godavari	1	Yes	
55	Anji Bhorkhedi	Godavari	1	Yes	
56	Decope	Konkan	1	Yes	
57	Shiraswadi	Krishna	1		No
	<b>Total</b>		<b>63</b>		
	<b>Grand Total</b>		<b>147</b>	<b>53</b>	<b>24</b>

N.B:- \* The projects are not taken up for entitlement for the year 2008-09 due less storage this year.

**Annexure-2**  
**Evaluation of Entitlement of Pilot Projects**

Sr. No.	Name of Project	Basin	% of Entitlement Delivered		Remarks
			Rabi	H.W.	
	<b>Old Pilot Scheme</b>				
	<b>Major</b>				
1	Kukadi	Krishna	52	40	
2	Ghod	Krishna	96	100	
3	Lower Wunna	Godavari	140	NA	
4	Hatnur	Tapi	20	NA	
	<b>Medium</b>				
5	Mangi	Krishna	16	53	
6	Waghad	Godavari	58	72	
7	Panzara	Tapi	100	NA	
	<b>Minor</b>				
8	Diwale	Krishna	9	14	
9	Benikre	Krishna	61	99	
10	Banganga	Krishna	116	NA	
11	Nandwal	Krishna	100	NA	
12	Chincholi	Krishna	9	57	
13	Anjani	Krishna	29	70	
14	Bhutekarwadi	Godavari	54	NA	
15	Dongargaon	Godavari	86	NA	
	<b>New Pilots:</b>				
	<b>Major</b>				
1	Palkhed	Godavari	1	32	
2	Mula	Godavari	39	69	
3	Ozarkhed	Godavari	59	71	
	<b>Medium</b>				
4	Sukhana	Godavari	108	NA	
5	Gharni	Godavari	38	9	
6	Kolar	Godavari	61	NA	
7	Ghatsilpargaon	Godavari	55	NA	
	<b>Minor</b>				
8	Walwad	Krishna	39	NA	
9	Chare	Krishna	60	NA	

Sr. No.	Name of Project	Basin	% of Entitlement Delivered		Remarks
			Rabi	H.W.	
10	Mamdapur	Krishna	35	NA	
11	Kalambwadi	Krishna	31	NA	
12	Tambave	Krishna	92	NA	
13	Dhakani	Krishna	8	NA	
14	Kankatrewadi	Krishna	60	NA	
15	Aptpadi	Krishna	94	NA	
16	Siddhanath	Krishna	85	NA	
17	Mapadle	Krishna	No demand	63	
18	Mohri	Godavari	33	NA	
19	Galan	Tapi	85	NA	
20	Badrakha	Tapi	32	NA	
21	Shewaga	Tapi	69	NA	
22	Nichpur	Godavari	77	NA	
23	Mulzara	Godavari	61	NA	
24	Banoti	Tapi	65	NA	
25	Bharaj	Godavari	34	NA	
26	Pardeshwadi	Godavari	33	NA	
27	Charthana	Godavari	30	NA	
28	Belgaon	Krishna	100	NA	
29	Golangi	Godavari	99	NA	
30	Kambali	Krishna	100	NA	
31	Harani	Krishna	120	340	
32	Nagthana	Godavari	67	NA	
33	Khapri	Godavari	100	NA	
34	Dastapur	Godavari	85	NA	
35	Nanduri	Tapi	82	NA	
36	Anji	Godavari	80	NA	
37	Ashti	Godavari	45	NA	
38	Umari	Godavari	75	NA	
39	Ambazari	Godavari	33	NA	
40	Kannamwargram	Godavari	16	NA	
41	Anji Bhorkhedi	Godavari	62	NA	
42	Deocope	Konkan	106	NA	
43	Shiraswadi	Krishna	52	NA	

**Annexure-3**  
**PROJECT-WISE DETAILS OF REGULATORS' INSPECTION**

Sr. No.	Name of Project	No. of WUAs	RABI		HOT WEATHER	
			No. of Rotations	No. of Visits	No. of Rotations	No. of Visits
	<b>Old Pilot Scheme</b>					
	<b>Major</b>					
1	Kukadi	10	2 each.	2	1 each.	2
2	Ghod	10	2 each.	2	3 each.	2
3	Lower Wunna	1	3	3		
4	Hatnur	2	4 each.	8		
	<b>Medium</b>					
5	Mangi	8	2 each.	1	4	2
6	Waghad	24	3 each.	63	2 each	24
7	Panzara	2	5 each.	3		
	<b>Minor</b>					
8	Diwale	1	6	6	3	3
9	Benikre	1	4	4	3	3
10	Banganga	3	1	2		
11	Nandwal	1	1	1		
12	Chincholi	2	1	1	2	2
13	Anjani	1	1	1	1	2
14	Bhutekarwadi	1	3	1		
15	Dongargaon	1	5	5		
	Total					
	<b>New Pilots:</b>					
	<b>Major</b>					
1	Palkhed	1	1	1	2	2
2	Mula	3	Total 7	7	7	5
3	Ozarkhed	1	3	3	2	2
	<b>Medium</b>					
4	Sukhana	2	3 each.	9		
5	Gharni	2	3 each.	0	5 Total	2
6	Kolar	1	3	3		
7	Ghatsilpargaon	2	1 each.	2		
	<b>Minor</b>					
8	Walwad	1	2	2		
9	Chare	1	2	1		

Sr. No.	Name of Project	No. of WUAs	RABI		HOT WEATHER	
			No. of Rotations	No. of Visits	No. of Rotations	No. of Visits
10	Mamdapur	1	2	3		
11	Kalambwadi	1	1	1		
12	Tambave	1	3	3		
13	Dhakani	1	1	1		
14	Kankatrewadi	1	2	4		
15	Atpadi	1	1	3		
16	Siddhanath	1	1	4		
17	Manpadle	1	No demand		2	2
18	Mohri	1	2	1		
19	Galan	1	4	4		
20	Badrakha	1	1	1		
21	Shewaga	1	5	5		
22	Nichpur	1	6			
23	Mulzara	1	3			
24	Banoti	1	5	9		
25	Bharaj	1	1	1		
26	Pardeshwadi	1	5	4		
27	Charthana	1	2	2		
28	Belgaon	1	4	4		
29	Golangri	1	3	3		
30	Kambali	1	4	4		
31	Harani	1	1	1	3	3
32	Nagthana	1	3	1		
33	Khapri	1	3	3		
34	Dastapur	1	6	6		
35	Nanduri	1	6	5		
36	Anji	1	6	6		
37	Ashti	1	2	2		
38	Umari	1	4	4		
39	Ambazari	1	3	3		
40	Kannamwargram	1	2	2		
41	Anji Bhorkhedi	1	6	6		
42	Decope	1	15	15		
43	Shiraswadi	1	2	3		