

**Evaluation of Determination, Enforcement, Regulation and Monitoring of Entitlement in Pilot Projects for the Rabi & Hot Weather Seasons 2009-10**

1.0 In the year 2006-07, the concept of Entitlement was initiated with 5 pilot projects from the Krishna basin as per the provision in Section 11(a) of MWRRA Act, 2005. The Entitlement Programme extended over the years. The number of projects covered under the Programme is :-

Year	Addition during the year				Total
	2006-07	2007-08	2008-09	2009-10	
2006-07	5				5
2007-08	5	15			20
2008-09	5	15	57		77
2009-10	5	15	57	52	129

During the year 2009-10 the number of Water User Associations (WUAs) covered under the Programme is 212.

1.1 Category-wise and riverbasin-wise abstract of the 129 pilot projects considered under the Entitlement Programme for 2009-10 :

Sr. No.	Category of Project	River Basin					WUAs under Entitlement
		Godavari	Krishna	Tapi	Konkan	Total	
1	Major	5	2	1	0	8	31
2	Medium	9	1	2	0	12	56
3	Minor	54	34	19	2	109	125
	Total	68	37	22	2	129	212

1.2 Of the 129 pilot projects considered under the Entitlement Programme 24 projects are not included in the Maharashtra Water Sector Improvement Project (MWSIP). The other 105 projects are from the MWSIP. The yearwise break-up of pilot projects under MWSIP considered under the monitoring and implementation of Entitlement Programme is-

Project Category	Irrigation year 2006-07		Irrigation year 2007-08		Irrigation year 2008-09		Irrigation year 2009-10	
	Projects	Total WUAs	Projects	Total WUAs	Projects	Total WUAs	Projects	Total WUAs
Major	2	20	4	25	5	28	5	28
Medium	1	8	4	41	8	49	10	53
Minor	2	2	11	14	40	50	90	105
Total	5	30	19	80	53	127	105	186

### 1.3 Yearwise break-up of pilot projects outside MWSIP is -

Project Category	Irrigation 2006-07		Irrigation 2007-08		Irrigation 2008-09		Irrigation 2009-10	
	Projects	Total WUAs	Projects	Total WUAs	Projects	Total WUAs	Projects	Total WUAs
Major	0	0	1	1	3	3	3	3
Medium	0	0	0	0	2	3	2	3
Minor	0	0	0	0	19	20	19	20
Total	0	0	1	1	24	26	24	26

## 2.0 Compilation of Data for Evaluation of the Entitlement Programme

2.1 Annexure I gives list of all the 129 pilot projects giving break-up of total number of WUAs of the projects vis-a-vis number of WUAs included in the Entitlement Programme, corresponding WUAs area under Entitlement, total number of beneficiaries covered under the Entitlement Programme.

2.2 During the year 2009-10, most part of Marathwada and Vidarbha regions experienced very low rainfall. As such in most of the storages of this area considered for Entitlement Programme, the storage position of 15 October 2009 was either below MDDL or less than 30% of the designed live storage.

Therefore, out of 129 projects under consideration, water was available in 90 projects at the beginning of Rabi for making irrigation possible where applicable entitlements were checked and communicated to field officers. In the remaining 39 projects water could not be

released for irrigation due to inadequate storage. As such applicable entitlement calculations were not received from the field officers.

2.3 Annexure II(A) gives details of all the 90 projects where Entitlement Programme is implemented in Rabi season of the year 2009-10. The details such as number of WUAs actually covered under the Entitlement Programme, their corresponding area, corresponding applicable Entitlement in Thousand Cubic Metres (TCM) vis-a-vis actual quantity delivered in the Rabi season and corresponding no. of beneficiaries are tabulated in this Annexure.

### 3.0 Performance Evaluation of Pilot Projects (2009-10)

#### 3.1 Entitlement Programme for Rabi

##### 3.1.1 Percentage of Entitlement Delivered :

Applicable entitlement for 90 pilot projects is checked and communicated. The basis is the live storage as on 15 October 2009. The percentage of entitlement with respect to the applicable entitlement delivered in various ranges during the Rabi season is given below.

<b>Range of % of Entitlement delivered</b>	<b>No. of pilot projects</b>	<b>Cumulative number of projects</b>
above 125	2	2
100 to 124	11	13
90 to 99	9	22
80 to 89	7	29
70 to 79	4	33
60 to 69	5	38
50 to 59	9	47
40 to 49	12	59
30 to 39	6	65
20 to 29	7	72
10 to 19	4	76
1 to 9	0	76
-0-	14	90

The '0' deliverance of entitlement at 14 projects is attributed to the reasons indicated in the following table -

Neoli (Dist. Latur) Pimpalgaon Nath (Dist. Buldhana)	2 projects	Entire storage reserved for drinking water supply
	7 projects	WUAs saved water during Rabi for utilisation in Hot Weather.
	3 projects	No demand either in Rabi or Hot Weather.

### 3.1.2 Percentage of area irrigated

Annexure II(A) gives the delineated area of WUAs under the entitlement, actual area irrigated and percentage of area irrigated to the delineated area. An abstract of % of area irrigated during Rabi of 2009-10 is given below.

Range of % of actual irrigated no. of area to the delineated area	No. of pilot projects	Cumulative projects
80 to 100	3	3
60 to 79	3	6
50 to 59	5	11
30 to 49	16	27
10 to 29	34	61
1 to 9	15	76

3.1.3 Evaluation of performance is made on the basis of % entitlement delivered, % of actual area irrigated and % number of beneficiaries covered.

Annexure II(A) presents projectwise break up of :

- i) % of Entitlement delivered as against the total applicable entitlement due
- ii) % of actual area irrigated as against the total delineated area of WUAs
- iii) % of beneficiaries (members) received entitlement as against the total number of WUAs.

On this basis performance of the following projects are noteworthy

Name of project	Ghod	Dongargaon	Khapri	Kannanwargram
No. of WUAs under the entitlement program	10	1	1	1
% of entitlement delivered to the total applicable volume	97	94	123	110
Total area of WUAs (delineated) considered under entitlement (ha)	6042.1	608.76	566	340.82
Actual area irrigated (ha)	5740	499	366	288
% of irrigated to total area of WUAs	95	82	65	85
No. of members of WUAs under the entitlement program	5002	306	272	198
No. of members who received water during the rotation	3833	302	225	125
% of members derived irrigation benefit	77	99	83	63

**Note:-** Figures of % of area covered and % of beneficiaries covered are very good. Storage was available after Rabi season. However, hot weather rotation was not planned owing to absence of demand from WUAs. Hot Weather was planned and implemented only on Ghod project.

### 3.2 Entitlement Programme for Hot Weather

3.2.1 After completion of irrigation in the Rabi season during the year 2009-10 on these 87 pilot projects, Hot Weather irrigation is planned on 33 pilot projects as water was available and also there was demand from WUAs for Hot Weather irrigation. In the Annexure II(B) entitlement scenario of such projects is presented. In addition to these 33 projects, hot weather rotations as a part of continuous Kokan-Hangam (i.e. Rabi plus hot weather) for paddy irrigation are given in 2 projects viz. Raitale and Decope (Thane district). They are already included in Rabi Entitlement Programme.

### 3.2.2 Performance Evaluation of Entitlement Programme on Pilot Projects in Hot Weather

Hot Weather Entitlement Programme was implemented on 33 pilot projects. Out of 14 projects where 0% entitlement is availed in Rabi, 7 projects are such that WUAs have deferred the Rabi Entitlement so as to have Entitlement in How Weather. These are Anjani, Dhakani, Dudhebhavi, Kuchi, Manpadale, Pilanwadi, Sidhnath. For two projects viz. Neoli & Pimpalgoan Nath, Hot Weather Programme could not be implemented. Due to shortage of water Hot Weather Programme could not be implemented on another 2 projects viz. Ashti & Kankraj. Even though sufficient storage was available in the 3 projects viz. Belgaon (Beed), Satewadi (Satara), Linganur (Sangli), Hot Weather Programme was not implemented.

3.2.3 On the basis of storages as on 28.02.2010, field officers computed the Applicable Entitlement for Hot Weather. An abstract of entitlement delivered in various ranges is given below.

<b>Range of % of Entitlement delivered</b>	<b>No. of pilot projects</b>	<b>Cumulative no. of projects</b>
above 125	2	2
100 to 124	4	6
90 to 99	3	9
80 to 89	3	12
70 to 79	3	15
60 to 69	3	18
50 to 59	2	20
40 to 49	3	23
30 to 39	3	26
20 to 29	5	31
10 to 19	2	33
1 to 9	0	33

It is seen that more than 60% entitlement is availed on 18 projects out of 33.

3.2.4 An abstract of percentage area irrigated during hot weather is given below:

<b>Range % of actual irrigated area to the delineated area</b>	<b>No. of pilot projects</b>	<b>Cumulative no. of projects</b>
80 to 100	0	0
60 to 79	0	0
50 to 59	1	1
30 to 49	2	3
10 to 29	20	23
1 to 9	10	33

#### 4.0 **Inspection by Regulators**

Annexure II(A) & II(B) give projectwise number of visits during the rotations by the appointed regulators. As per the Technical Manual brought out by the Authority in 2007, a regulator has to make at least 3 random checks in a rotation period of 15 days or so. It is seen that on most of the projects, regulators could pay only 1 visit per rotation.

##### **Impact of Regulators :**

Enforcement of entitlements is one of the functions of MWRRA devolved by the Act. In order to monitor the enforcement of entitlements, MWRRA appoints regulators on the recommendation of the Water Resources Department. They are specially trained for the task they are intended to perform.

The Entitlement Programme implemented on pilot irrigation projects in the State during the period 2007-08 to 2009-10 has positively testified the performance of regulators which is clear from the following :-

- (i) Pink slips have been issued by regulators in Walwad, Pathri, Chare, Padwalkarwadi and Chincholi projects (all 2008-09 projects from Solahpur district) so that deficiency in operations could be rectified. Pink slip is issued by the Regulator to the Department's staff when the quantum supplied in any rotation is short by 15-20% of the agreed quantum. It is required to make good the shortfall in subsequent rotation.

- (ii) Critical remarks in respect of deficient installation of measuring devices, improper field condition of canal system have been reported by regulators in respect of following projects (districts are mentioned in brackets) -

2007-08	Banganga (Satara), Hivare (Satara), Nandwal (Satara)
2008-09	Tambave (Satara), Deocope (Thane), Kanktrewadi (Satara)
2009-10	Raitale (Thane)

This helped speed up undertaking corrective / remedial measures.

- (iii) Regulators have cross checked the quantities supplied by the field officers and have reported the same.
- (iv) Regulators have reported the requirements and requests of the WUAs and the action taken by the field officers to set the matters right.
- (v) Since the regulators are appointed by MWRRA and are to report directly to it, they have worked as representatives of MWRRA.
- (vi) Regulators have visited at least once during every rotation and acted as an inter face between the WUAs and the Department's officials.

## 5.0 Workshop on Operationalising Water Entitlement

The objective of organizing workshop on Operationalising Water Entitlement is to have an interaction among service provider, managerial staff of WUAs and regulators (functioning on behalf of Authority). Such workshops provide an opportunity to present success stories of WUAs which have benefitted by way of implementation of Entitlement Programme. Other WUAs get inspiration through this for performance enhancement so that over all water use efficiency is further increased.

Fourth Workshop on Operationalising Water Entitlement was held at WALMI, Aurangabad for a full day on 24 September 2009. The workshop was attended by 204 participants of which 155 were WRD officers and 59 were office bearers of WUAs.



## **6.0 Special One Day Workshop for Regulators**

Regulators need some training on monitoring and enforcement of Entitlement before they can take up the task assigned to them. Accordingly, in the Workshop of 24.09.2009, all the office bearers of WUAs and field officers requested to hold one day special Workshop for the benefit of Regulators only. Accordingly, on 12<sup>th</sup> March 2010 special one day Workshop was organized at WALMI, Aurangabad.

## **7.0 Evaluation of Entitlement Programme (2009-10) in Nutshell**

For total number of 129 pilot projects, 1038 WUAs have been formed. Of these 1038 WUAs, 212 WUAs have been covered under the Entitlement Programme for the 2009-10.

Total delineated area of 212 WUAs is 104217.62 ha. Out of this area, implementation of entitlement in Rabi pertaining to 90 projects is on 75155.79 ha. Actual area which received entitlement in Rabi 2009-10 is 18784.87 ha. Total number of beneficiaries who belong to this area is 77522. Out of these, 20813 beneficiaries have received entitlement in Rabi 2009-10.

The Entitlement programme is also implemented during Hot Weather of 2009-10 on 33 projects of which some also belong to those covered under the Programme during Rabi season. The area covered is 47365.83 ha. Actual area which received entitlement is 8315.27 ha. Total no. of beneficiaries belonging to this area is 54059 out of which 13947 beneficiaries have received entitlement during the season. The combined scenario of both the seasons is: 27100.14 ha area have received irrigation under the Programme with benefit to 34760 beneficiaries.

The smaller percentage of area receiving Rabi irrigation is attributed to :

- 1) During Rabi of 2009-10 there were rains in some parts of the State. As a result, a good amount of soil moisture was present in soils. Farmers, therefore, have gone for use of lesser entitlement in the Rabi irrigation.

Secondly planning of most of the M.I. projects do not provide for Hot Weather irrigation. Due to rains in Rabi 2009-10, ground water table got raised and farmers practiced well irrigation entailing saving in water for Hot Weather utilization later.

Because of freedom in cropping pattern for WUA, the tendency of farmers is to go in for cash crop cultivation e.g. sugarcane, banana which are water-intensive. Most of the farmers used their share of entitlement to grow cash crops resulting in reduction in Rabi area.

- 2) The works of rehabilitation of irrigation system of projects under Maharashtra Water Sector Improvement Project have gained momentum. However, it is likely that 2 more years will elapse to get the system rehabilitated as envisaged. The scenario of area irrigated is going to improve considerably after that.

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