



# महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण

(महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण अधिनियम, २००५ चे कलम ३ अन्वये स्थापित वैधानिक प्राधिकरण)

## Maharashtra Water Resources Regulatory Authority

(A Statutory Authority Established u/s 3 of Maharashtra Water Resources Regulatory Authority Act, 2005)

File No. MWRRA/419/2018/TMR/2025/230

Date: 02/05/2025

Order No. 2 / 2025

In the matter of  
"Technical Manual on Criteria, Regulation and Enforcement of  
Water Entitlements for Irrigation in Maharashtra"

**Background:** Authority in exercise for powers conferred under Section 11(a), 11(g), 11(h), 11(k), 11(o) and 11(s) of the MWRRA Act, 2005 for Irrigation Entitlements, had determined and approved "Technical Manual for Entitlements in Irrigation, May 2015." As per the provisions in Section 16A (1) of Maharashtra Water Resources Regulatory Authority (Amendment and Continuance) Act, 2011, Government of Maharashtra vide it's GR, Water Resources Department Misc. 2015/(44/15)IM (Policy) dated November 17, 2016 has decided the sectoral allocation of water in a water resources project to the various Categories of Use. Thereafter, the Authority has revised criteria for distribution of surface water Entitlements by River Basin Agencies for Domestic and Industrial uses in September 2017.

However, the issue of revision of the manual for irrigation entitlements was under consideration of the Authority. In light of these developments, Technical Manual on Criteria, Regulation and Enforcement of Water Entitlements for Irrigation in Maharashtra" (April 2025) has been approved.


## Order

Authority in exercise of powers conferred under Sections 11(a), 11(g), 11(h), 11(i), 11(k), 11(o), 11(s) of the MWRRA Act 2005 with amended Act of 2011, has determined and approved. "Technical Manual on Criteria, Regulation and Enforcement of Water Entitlements for Irrigation in Maharashtra" (April 2025) vide Authority Resolution No. 292 dated 16.4.2025 with necessary terms and conditions. This Technical Manual on criteria will be effective from **1<sup>st</sup> June 2025** and will supersede the earlier Technical Manual of May 2015. This revised Technical Manual, April 2025 is available on the Authority's website ([www.mwrra.org](http://www.mwrra.org)).

All concerned shall take necessary action accordingly.

Encl : Technical Manual, April 2025

(Approved by Authority)

  
(Shri. Mallikarjun Dharane)  
Secretary, MWRRRA

To,  
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**Technical Manual**  
**ON**  
**Criteria, Regulation and Enforcement**  
**OF**  
**WATER ENTITLEMENTS**  
**FOR**  
**Irrigation In Maharashtra**



**Maharashtra Water Resources Regulatory  
Authority, Mumbai**

**April 2025**

## **FOREWORD**

Maharashtra Water Resources Regulatory Authority (MWRRA) was established in the year 2005 with the objective of regulating, facilitating, and ensuring the equitable distribution of water resources across the State. The need-based allocation and judicious utilization of water resources for agricultural, industrial, and domestic purposes are of paramount importance. To achieve this, the Authority published the Technical Manual in 2015, which outlined detailed procedures for determining entitlements for irrigation purposes by the River Basin Agencies (RBA). The Authority has now revised and upgraded its Technical Manual of 2015, as the 'Technical Manual on Criteria, Regulation and Enforcement of Water Entitlements for Irrigation in Maharashtra', 2025.

This revised manual serves as a valuable resource for River Basin Agencies, Water User Associations, farmers, and other stakeholders. By establishing a clear entitlement determination process, it aims to enhance the overall performance of irrigation projects across the State by fostering effective water management, to achieve the ultimate goal of equitable distribution and efficient utilization of water resources.

This comprehensive manual is the result of the dedicated and tireless efforts of Shri Narendra Tayade and Shri Mallikarjun Dharane, the Directors, along with Shri. Prabhakar Khire, consultant, under the guidance of Authority Members Shri. Rajendra Mohite, Mrs. Shwetali Thakare, and Dr. Prabhat Jain. The Authority also acknowledges the contributions of Shri. V.M. Kulkarni, a former Member of the MWRRA.

**Dr. Sanjay Chahande**  
**Chairman**  
**Maharashtra Water Resources Regulatory**  
**Authority**

**Technical Manual on Criteria, Regulation and Enforcement of Water  
Entitlements for Irrigation in Maharashtra  
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## **List of Abbreviations**

<b>Sr. No.</b>	<b>Abbreviations</b>	<b>Definition</b>
1	BWSE	Bulk Water Supply Entity
2	BWUE	Bulk Water User Entity
3	DBWU	Domestic Bulk Water User
4	IBWU	Industrial Bulk Water User
5	PLA	Project Level Association
6	DLA	Distributary Level Association
7	CLA	Canal Level Association
8	MWRRA	Maharashtra Water Resources Regulatory Authority
9	MWRRA Act	Maharashtra Water Resources Regulatory Authority Act, 2005 (as amended time to time)
10	MMISF Act	Maharashtra Management of Irrigation System by Farmers Act, 2005
11	MI Act	Maharashtra Irrigation Act, 1976
12	RBA	River Basin Agency
13	IDC	Irrigation Development Corporation
14	PIM	Participatory Irrigation Management
15	WRD	Water Resource Department
15	SWP	State Water Policy
17	MSWP	Maharashtra State Water Policy
18	PDRO	Primary Dispute Resolution Officer
19	ABWE	Aggregate Bulk Water Entitlement
20	BWE	Bulk Water Entitlement
21	PUWUE	Prescribed Unit Water Use Entitlement
22	SWUE	Sanctioned Water Use Entitlements
23	WUE	Water Use Entitlement
24	AWE	Applicable Water Entitlements (Water Quota)
25	GCA	Gross Command Area
26	CCA	Cultivable Command Area
27	BWUE	Bulk Water Use Entitlement
28	WUAs	Water User Associations
29	MD	Measuring Device
30	BIS	Bureau of Indian Standards
31	Normal Year	Dam full Condition
32	N I	Non Irrigation
33	DIRD	Directorate of Irrigation Research and Development, Pune



# **Technical Manual on Criteria, Regulation and Enforcement of Water Entitlements for Irrigation in Maharashtra**

## **1.0 Introduction**

### **(a) About MWRRA**

Maharashtra Water Resources Regulatory Authority (MWRRA) was set up in the year 2005 under the Act of the State of Maharashtra (MWRRA Act, 2005), in view to regulate the water resources within the State of Maharashtra as to facilitate and ensure judicious, equitable and sustainable management, allocation and utilization of water resources, fix the rates for use of water for agriculture, industrial, drinking and other purposes and matters connected therewith or incidental.

The Maharashtra is the first State in the Country to introduce Water Resources Regulatory Authority. However, considering the ease of implementation, the Act has been amended in year 2011 and 2016.

### **(b) Important Acts in the Water Sector**

Following are the important Acts enacted in the State to regulate the Water Resources Sector.

1. Maharashtra Irrigation Act, 1976
2. Maharashtra Water Resources Regulatory Authority Act, 2005 (as amended from time to time)
3. Maharashtra Management of Irrigation System by Farmers Act, 2005
4. Maharashtra Groundwater (Development and Management) Act, 2009

### **(c) Key Power, Functions and Duties of MWRRA**

The key functions of the Authority under sections 11 to 13 of the Act are;

1. To determine the criteria for the distribution of Entitlements by the River Basin Agencies, within each Category of Use, after the sectoral allocation as decided by the State Government.
2. To establish a system of enforcement of Entitlements issued by the concerned River Basin Agency to various Categories of Use and its regulation, through measurement and monitoring.
3. To establish a water tariff system for levying water charges on various categories of water users with a view to establishing stable and self-sustainable management of service delivery to such users.
4. To review and clear the water resources projects.

5. Dispute Resolution.

**(d) Important Entitlement Manuals / Criteria issued by MWRRRA**

The Important Manuals / Criteria issued by MWRRRA are as follows.

1. Procedure for Regulation and Enforcement of Entitlements – Powers & Function of Regulators and Responsibility of WRD officials in 2006.
2. Technical Manual for Fixing, Regulating, and Enforcing the Entitlements in Irrigation Projects in 2007.
3. Procedure for Regulations & Enforcement of Entitlements (Powers & Functions of Regulators & Responsibility of WRD Officials) October 2007.
4. Criteria for Distribution of Entitlements by River Basin Agencies for Domestic & Industrial Users. Issued by Maharashtra Water Resources Regulatory Authority Mumbai, November 2012.
5. Technical Manual for Determining, Regulating and Enforcing Water Entitlements in Irrigation Projects of Maharashtra, May 2015.
6. Criteria for Distribution of Entitlements by River Basin Agencies for Domestic & Industrial Users, September 2017.

**1.1 Background of Manual**

As per Clause 14(1) of the MWRRRA Act, 2005, from the date of commencement of the Act, no person shall use any water from any water source without obtaining the Entitlement from the respective River Basin Agency (RBA). MWRRRA Act, 2005 had initially (before the April 2011 Amendment) entrusted the Authority, through its section 11(a), with the power to determine the distribution of Water Entitlements for various categories of use and of equitable distribution within each category of use. Moreover, the Authority, under Sec 12(1) was required to work according to the framework of the State Water Policy announced in July 2003. The Authority is also entrusted with monitoring the Entitlements vide section 11(k) of the MWRRRA Act, 2005.

The concept of Entitlement was adopted initially on five pilot irrigation projects during 2006-07. Subsequently, the programme has been upscale to 256 irrigation projects. Initially 30 WUAs were considered under the programme, which were increased to 1368 by 2013-14. All those projects covered under MMISF Act are eligible for Entitlement programme.

The State Water Policy was came into existence in July 2003, while the MWRRRA Act was enacted in 2005. Subsequently, the State Water Policy was revised in 2019 by bringing out a change in the priority of water uses. Whereas, MWRRRA Act was amended in April 2011.

As per Sec. 11(a) of Amended MWRRA Act, 2011 the provisions read as; *“to determine the criteria for the distribution of Entitlements by the River Basin Agencies, within each Category of Use, on such terms and conditions as may be prescribed after sectoral allocation is made under section 16A,”* accordingly, the Authority, issued “Technical Manual for determining, Regulating and Enforcing Water Entitlements in Irrigation Projects of Maharashtra, May 2015” (In short Irrigation Technical Manual, 2015) and “Criteria for distribution of surface water entitlements by river basin agencies for domestic & industrial uses in September 2017”. (Henceforth the Non-Irrigation Criteria Sept. 2017)

As per powers under sec. 11(k), initially monitoring of Entitlements was entrusted to the Superintending Engineer, e-governance, Pune in 2018, which subsequently was delegated to Superintending Engineer, Directorate of Irrigation Research and Development, Pune in June 2024.

## **1.2 Necessity of Revision**

As per the provision under sec. 11(g) and (o), the Authority has mandate, to lay down Criteria for issuance, monitoring & to establish a system of enforcement of surface water entitlements by river basin agencies for irrigation uses. Considering the same authority has decided to revisit the same and formulate the revised criteria of Enforcement & Monitoring.

Considering the amendment proposed in the amended MWRRA Act, 2011 & 2016, State Water Policy 2019, and non-irrigation Criteria, Sept 2017, the present revised version of the Manual is prepared.

Various provisions under the amended MWRRA Act 2011 & 2016 and MMISF Act, 2005, the Criteria for Entitlement of water for Irrigation, Issuance in light of delineation of area of WUA, volumetric supply and measurement, & monitoring of enforcement with third party inspection have been incorporated.

Maharashtra State Water Policy was revised in year 2019. For the purpose of Technical Manual of Entitlements, it is observed that priority of GR of 2011 is retained in SWP, 2019. Hence, no modification is required in the Technical Manual, 2015 due to SWP 2019.

Under Sec. 28 of MMISF Act 2005, and Rule 18 of Rules for MMISF Act 2006, a step-by-step process for determination of unit water entitlement for Kharif, Rabi, and Hot Weather seasons is given in view of equitable water supply as per applicable Water Use Entitlement. Various, formats have been evolved (Annexure 5 & 6 of Rules 2006 for MMISF Act) for the compilation and reporting of the requisite information by the field staff at the beginning and end of the irrigation season. Thus, this manual serves as "Criteria, for distribution of surface water Entitlements by River Basin Agencies for irrigation uses".

Therefore, role of the Authority is restricted to only, to fixing the Criteria, establishing the required system of monitoring and enforcement and quasi-judicial role as per Sec. 22 of the MWRRA Act, 2005.

## 2.0 Definitions of the Terms Used

In this Technical Manual unless the context otherwise requires:

**Table 2. : Definitions of the Terms Used**

Sr. No.	Term	Section No.	Maharashtra Water Resources Regulatory Authority (MWRRA) Act, 2005.
1)	Aggregate Bulk Water Entitlement	2(a)	“Aggregate Bulk Water Entitlement” means an aggregate of Entitlements issued to a group or association of Water User Entities for the purpose of joint management of the Bulk Water Entitlements.
2)	Allocation	2(b)	Means the portion or percentage of an Entitlement declared annually or seasonally by the Prescribed Authority to be made available to the holder of an Entitlement based upon the availability of water for the period within the sub-basin, river basin, project or storage facility for that season or year; and during water crisis or scarcity on the principle of proportionate entitlement.
3)	Authority	2(c)	“Authority” means Maharashtra Water Resources Regulatory Authority established under section 3.
4)	Bulk Water Entitlement	2(e)	“Bulk Water Entitlement” shall mean the volumetric entitlement to a share of the surface water resources produced by a project, river system or storage facility, for a specific category or Categories of Use, and deliverable within a specific period of time as specifically provided in the order granting the Entitlement.
5)	Entitlement	2(i)	“Entitlement” means any authorization by any River Basin Agency to use the water for the purposes of this Act.
6)	Individual Water Entitlement	2(l)	Means any authorization by the River Basin Agency to use the water other than Bulk Water Entitlement or an Aggregate Bulk Water Entitlement;
7)	Quota	2(s)	“Quota” means a volumetric quantity of water made available to an Entitlement holder, which is derived by multiplying an Entitlement by the annual or seasonal allocation percentage.

8)	River basin Agencies	2(u)	<p>River basin Agencies” means any one of the following River Basin Development Corporations operating in the River Basin and includes the Government Authorities as specified by the Government, from time to time, -</p> <p>(1) Maharashtra Krishna Valley Development Corporation established under the Maharashtra Krishna Valley Development Corporation Act, 1996.</p> <p>(2) Vidarbha Irrigation Development Corporation was established under the Vidarbha Irrigation Development Corporation Act, 1997.</p> <p>(3) Konkan Irrigation Development Corporation was established under the Konkan Irrigation Development Corporation Act, 1997.</p> <p>(4) Tapi Irrigation Development Corporation, established under the Maharashtra Tapi Irrigation Development Corporation Act, 1997.</p> <p>(5) Godavari Marathwada Irrigation Development Corporation was established under the Maharashtra Godavari Marathwada Development Corporation Act, 1998.</p>
<b>Sr. No.</b>	<b>Term</b>	<b>Section No.</b>	<b>Maharashtra Management of Irrigation Systems by Farmers (MMISF) Act, 2005</b>
1)	Agreement	2(b)	<p>“Agreement” means an agreement between the Water Users' Association and the Upper-Level Water Users' Association or Canal Officer, as the case may be, for the supply of water on a volumetric basis for irrigation and handing over of physicals system for operation, maintenance and management.</p>
2)	Applicable Water Entitlement (Water Quota)	2(c)	<p>Applicable Water Entitlement (Water Quota)” in relation to a reservoir-supported canal system, means the total volume of water guaranteed to be supplied to a Water Users' Association at the agreed point of supply, in any year arrived at according to the rules made under this Act, by the Appropriate Authority and in the case of Minor Irrigation Projects having only one Water Users' Association, available water for Irrigation at Canal Head.</p>
3)	Canal Officer	2(f)	<p>Means the Canal Officer appointed under clause (4) of section 2 of the Maharashtra Irrigation Act, 1976 who is duly empowered by the State Government, by notification in the Official Gazette, for the purposes of exercising the powers and discharging the duties under this Act;</p>
4)	Command Area	2(h)	<p>“Command Area” in relation to flow and lift irrigation on a canal, means the land under irrigable command of a canal, bound by hydraulic or other boundaries for which a Water User’s Association is formed.</p>

5)	Culturable Command Area	2(j)	Means the area under an Irrigation Project, which is Culturable and can get irrigation facilities through the Canal System;
6)	Deficit Year	2(k)	“Deficit Year” in relation to a diversion system or reservoir-based canal system, means a year in which the water availability at the head works is less than that in a Normal Year.
7)	Entitlement	2(m)	“Entitlement” means bulk water use entitlement or individual water use entitlement, as determined by Appropriate Authority from time to time.
8)	Irrigation Development Corporation	2(p)	“Irrigation Development Corporation” means an Irrigation Development Corporation established by the State Government by an Act of the State Legislature.
9)	Non-irrigation Water Supply	2(x)	“Non-Irrigation Water Supply” means water supply from an irrigation project for purposes other than irrigation and includes water supply for purposes such as domestic, industrial, power generation, fisheries and as may be specified by the Appropriate Authority from time to time.
10)	Normal Year	2(y)	“Normal Year” in relation to a diversion system or a reservoir-based canal system means a year in which the water availability at the headwork (including the water that is allowed to be lifted from the reservoir and losses therefrom) is as envisaged in the Irrigation Project Report or as revised subsequently by the State Government.
11)	Prescribed Unit Water Use Entitlement	2(aa)	“Prescribed Unit Water Use Entitlement” in relation to a reservoir-based canal system means the total volume of water that is available in an irrigation year or season per hectare of Culturable Command Area at the point of supply to the Water Users' Association, arrived at after considering prior sanction for Non-Irrigation purposes and all the losses and gains from the canal system in a Normal Year.
12)	Sanctioned Water Use Entitlement	2(ag)	“Sanctioned Water Use Entitlement” in relation to an Agreement with Water Users' Association on a reservoir-based canal system means, the total volume of water guaranteed to be supplied to the Water Users' Association, at the agreed point of supply, in different seasons, in a Normal Year.
13)	Water User's Association	2(al)	“Water User's Association” in relation to Management of Irrigation systems by Farmers means all types of Water User's Association at all Levels of canal system for flow as well as lift irrigation.



Sr. No.	Term	Section No.	As per Criteria for Bulk Water Tariff.
1)	Kharif Irrigation season		The period from 1 <sup>st</sup> July to 14 <sup>th</sup> October every year for Western Maharashtra / North Maharashtra and Marathwada, Period from 1 <sup>st</sup> July to 14 <sup>th</sup> November every year for Vidarbha and Konkan regions of Maharashtra.
2)	Hot weather irrigation season		Period from 1 <sup>st</sup> March to 30 <sup>th</sup> June every year for Western Maharashtra / North Maharashtra and Marathwada. Period from 1 <sup>st</sup> April to 30 <sup>th</sup> June every year for Vidarbha and Konkan.
3)	Primary Dispute Resolution Officer (PDRO)		Any officer notified by the State Government to resolve dispute about issuance or delivery of Entitlements for any project.
4)	Rabi irrigation season		The period from 15 <sup>th</sup> October to 28/ 29 February every year for Western Maharashtra/North Maharashtra and Marathwada Period from 15 <sup>th</sup> November to the 31 <sup>st</sup> March every year for Vidarbha and Konkan.
5)	“Major Irrigation Project”, “Medium Irrigation Project” and “Minor	Policy of MWRR A for Clearance U/S 11 (f)	Major Project means a project having Culturable Command Area (CCA) exceeding ten thousand hectares, Medium Project means a project having CCA greater than two thousand hectares up to ten thousand hectares, Minor Project means project-having CCA above 250 ha. And up to two thousand hectares.

### 3.0 Entitlement Criteria:

#### 3.1 Concept of Entitlements:

As per Clause 14(1) of the MWRRRA Act, 2005, from the date of commencement of the Act, no person shall use any water from any water source without obtaining the Entitlement from the respective River Basin Agency (RBA).

Water Entitlement is defined as any form of authorization, Bulk Water Entitlement or Individual Entitlement, granted by River Basin Agencies (RBAs) as per the provisions of the acts. The state government holds the authority to determine sectoral water allocations under the Section 16 (A) of amended MWRRRA Act, 2011. However, it is the responsibility of the MWRRRA to establish criteria for water entitlement distribution within each category of use.

Once the sectoral allocation of water is done in a particular project, concept of ‘entitlement’ comes into play. How much water (entitlement) is to be further given in the various bulk water entities of categories like Domestic, Agricultural, Industrial & other is to be determined by the Criteria of entitlements.

This manual primarily deals with the criteria for irrigation entitlements. However, it is important to mention that all other entities including domestic and industrial are

also entitled to use water based on the criteria given by MWRRA Manual of Sept. 2017. Thus, every Canal Officer in the State has to determine entitlements of Irrigation, Domestic & Industrial Sectors. Entitlements to different Bulk Water Entities. It is not that the work of entitlement is only restricted where Water User Associations are formed, but entitlement is to be given for all categories of use.

The issuance and delivery of entitlements for irrigation purposes, however, are contingent upon compliance with the relevant provisions of the MMISF Act, 2005. The guiding principle for the allocation of entitlements is equity, ensuring that all beneficiaries of each user category are treated fairly within the framework of the Act.

As stipulated in Section 12(6) of the MWRRA Act, River Basin Agencies are tasked with determining the Quota at both the project and sub-basin levels based on the following principles:

- For equitable water distribution within the command area of a project, every landholder shall be assigned a Quota.
- The Quota shall be determined based on the land area within the command area.
- In times of water scarcity, every landholder must, as far as possible, receive a Quota that ensures irrigation of at least one acre of land.

These provisions are designed to promote fair and sustainable water management, particularly during periods of water shortage, ensuring that all stakeholders can access sufficient water for irrigation.

### **3.2 Legal Provisions about Entitlement:**

RBA Shall issue entitlements to various categories of use as per criteria/Technical Manual issued by MWRRA under section 11(a) & section 11(g) of the MWRRA Act. For irrigation use by WUAs, Technical Manual 2015, now revised in 2025 shall be applicable.

Several provisions from both the MWRRA Act and the Technical Manual (2015) are required to be incorporated in the “Technical Manual on Criteria, Regulation, and Enforcement of Water Entitlements for Irrigation in Maharashtra” (2025). These provisions, outlining the criteria and enforcement mechanisms along with monitoring will help to ensure the successful regulation of water entitlements across the State. For a broader view, a detailed chart of these provisions is given in **Annexure 1** of this manual.

### **3.3 Applicability and Exclusion of Entitlements :**

**3.3.1 Applicability** – This manual is Applicable to delineated culturable command areas of irrigation projects notified under Section 5 of MMISF Act, 2005 by the State Government. After delineation, joint inspections are carried out by the River Basin Agency so that water can reach the tail end of the canal.

Important pre-requisites as per section 31-A of MWRRA (Amendment and Continuance) Act, 2011 and provisions under MMISF Act, 2005, and its Rules of 2006 can be given in brief as:

1) The Project is notified under Section 5 of the MMISF Act, 2005 by the State Government,

- 2) Delineation of the area is carried out as per Rules 3 for Section 6 of MMISF Act, 2005 with a map and list of landholders and register of registration of WUAs.
- 3) Section 7 of the MMISF Act, 2005 prescribes the condition for the supply of water for Irrigation, which reads as follows;

*Sec. 7 - "On delineation of the command area of Water Users' Association, by notification in the Official Gazette under section 6, no water shall be supplied by the Appropriate Authority to the individual holder or occupier; and the system of supply of water through Water Users' Association shall be binding on all holders and occupiers of such lands."*

Here, the provision of Sec. 14 (1) of the MWRRA Act is also taken into consideration since it also States that no person shall use any water without obtaining Entitlement from the respective RBA. After delineation of the area of operation of WUA at a minor level compliance of this section is vital for the formation of WUA. Once the area is delineated under section 6 under the Rules, the holders and occupiers of land so delineated shall form WUA as per section 8(1). However, if no such WUA is formed proviso under section 8 can be used for an alternative arrangement in section 8 of MMISF Act, 2005 up to one year to issue the Entitlement to selected Non-WUA Entities like Gram Panchayat or Co-operative Societies or nearby WUA. This alternative arrangement shall remain in force for up to one year only. **All such entities that will have to be given entitlement are labeled as other entities in this manual.**

However, Section 78 of MMISF Act, 2005 reads; *"The provisions of Maharashtra Irrigation Act, 1976 which have not been specifically repealed by this Act shall remain in force and shall mutatis mutandis apply to areas Management of Irrigation System by Farmers"*.

Hence, Water be supplied on the area basis or volumetric and to the individual farmer as per the provision in the Maharashtra Irrigation (M.I) Act, 1976, since it is applicable in such areas (i.e. command areas ) where compliances as per MMISF Act, 2005 are not done (refer "Explanation" under Section 31-A of MWRRA Amended Act, 2011).

- 4) Prescribed and Sanctioned Water Use Entitlements are determined by RBA and should be given as per **Annexure – 2 / 3(1) / 3(1-a) & 3(2)**.
- 5) WUAs at various levels are commissioned.
- 6) Joint Inspections are carried out (as per section 22) and Repairs & Rehabilitation works are carried out before handing over the areas to WUAs.
- 7) Agreement with WUA is executed by RBA as per section 29.
- 8) Area is handed over to WUA as per Subsection 5 of section 22.
- 9) Applicable Water Use Entitlements are issued & delivered by RBA to WUAs as per various relevant sections.
- 10) Measuring devices are installed as per sections 23 & 28.
- 11) Water auditing is mandatory for all Water Resources Projects.
- 12) Every WUA gets its accounts audited annually in a prescribed manner as provided in Section 59.

### 3.3.2 Exclusion for Entitlement: -

MWRRA, as per powers under section 14 (1) (b), has determined the threshold value of annual yield capacity as 1.5 Mcum. Thus, obtaining the entitlement from RBA is exempted for tanks / small reservoirs having a capacity below 1.5 Mcum.

### 3.4 Criteria of Entitlements:

MWRRA Act provides only for Bulk Water Entitlement, while the MMISF Act mentions three different types of Entitlements, issuance, modification and distribution of which should be as per para 4.0. This being technical and complex processes, differences in the three terms of entitlement need to be understood in a simplified manner. Then conditions like gain (due to post-monsoon flow), individual use and partial area delineated and brought under the MMISF Act in some major projects are not taken into consideration for simplification. Under such circumstances, entitlements are to be determined as per para 3.4.3, 4.3, 4.4 and 4.5.

For a simplified view, the different definitions of Water Use Entitlements (WUEs) given in the MMISF Act, as per Para 2, can be given broadly, not in robust form as under (see the difference in dimensions of each term)-

$$\begin{array}{lcl} \text{1. Prescribed Unit Water Use} & & \\ \text{Entitlement (PUWUE)} & = & \left[ \frac{\text{Total Designed Storage – Losses + Gains – NI Use}}{\text{Total delineated area (CCA)}} \right] \\ \text{(Cum/ha)} & & \end{array}$$

... For a Season or Normal Year [As per Sec. 2 (1) (aa)]

$$\begin{array}{lcl} \text{2. Sanctioned Water Use} & = & \text{Total Volume guaranteed in different} \\ \text{Entitlement (SWUE)} & & \text{seasons in a Normal Year} \\ \text{(Cum)} & = & \left[ \text{PUWUE X CCA of WUA} \right] \end{array}$$

... For a Season or Normal Year [As per Sec. 2 (1) (aa)]

$$\begin{array}{lcl} \text{3. Applicable Water Use} & = & \left[ \text{Total Water Quota guaranteed to WUA} \right] \\ \text{Entitlement (AWUE)} & & \text{At agreed point of supply} \\ \text{(Cum)} & = & \text{(Live storage – Losses – NI use)} \\ & & \text{On 15<sup>th</sup> October in any year} \\ & & \text{[As per Sec. (1) (c)]} \end{array}$$

Sanctioned WUE shall be entered into the agreement between RBA & WUA.

For Domestic and Industrial use, Criteria for Distribution of Surface Water Entitlements by River Basin Agencies for Domestic & Industrial Uses issued by the authority vide Order No. 19 of 22 Sept. 2017 shall be applicable.

#### 3.4.1 Criteria of Distribution of Entitlements as per Sec. 11 (a)

Maharashtra Water Resources Regulatory Authority (Amendment & Continuance) Act, 2011 – [Sec.11 (a)] - “to determine the criteria for the distribution of Entitlements

*by the River Basin Agencies, within each Category of Use, on such terms and conditions as may be prescribed, after sectoral allocation is made under section 16A;”*

Sec. 16A (1) - *“Notwithstanding anything contained in section 11 or any other provisions of this Act or in any other law for the time being in force, the State Government shall determine the sectoral allocation:”*

*Provided that, sectoral allocation so determined shall ordinarily be reviewed at such intervals of not less than three years:*

*Provided further that, after publication of the Maharashtra Water Resources Regulatory Authority (Amendment and Continuance) Act, 2011, in the Official Gazette, the State cabinet shall determine the sectoral allocation.*

*2) After the sectoral allocation, as provided in subsection (1) is determined the criteria for the distribution of Entitlements under clause (a) of section 11.*

The Criteria for Distribution of Entitlements have been divided into two categories viz. Irrigation and Non-Irrigation purpose.

**(a) Non-Irrigation :-**

Maharashtra Water Resources Regulatory Authority had brought out the Criteria for Distribution of Entitlements by River Basin Agencies for Domestic & Industrial Uses in Nov. 2012 and cognizance of this was taken in Irrigation Technical Manual – May 2015.

As per the MWRRA (Amendment and Continuance) Act, 2011, Sec. 11 (a) and Sec. 16A, Government of Maharashtra has decided the sectoral allocation by the Government Resolution (GR) dated November 17, 2016. As per the said (GR) the allocation of water at the project level for domestic, industrial and irrigation purposes shall be 15%, 10% and 75% respectively. With this development, the earlier criteria of November 2012 have been modified as, “Criteria for Distribution of Surface Water Entitlements by River Basin Agencies for Domestic and Industrial Uses,” in Sept. 2017. (Henceforth Non-Irrigation Criteria, Sept. 2017), which is available on the website of the Authority.

**(b) Irrigation :**

The various provisions/criteria under sections 11(g), (h) and (i) of the MWRRA Act, 2005 (as amended from time to time) have been illustrated in detail below.

**3.4.2 Criteria for Issuance and Monitoring of Entitlements**

Entitlement for WUAs shall be given in areas where compliance with all relevant provisions including delineation under the MMISF Act (Refer to section 31-A of MWRRA, amended Act 2011) is done.

**Provision in the MWRRA Act 2005 are as under:**

**(a) MWRRA Act, 2005, Sec.11 (g)** *“to lay down the criteria and monitor the issuance of Entitlements. These criteria among others shall also include the following,” -*

*(i) The Entitlements shall be issued by River Basin Agency based on the Category of Use and subject to the priority assigned to such use under State Water Policy;*

*(ii) Bulk Water Entitlements shall be issued by the River Basin Agency for irrigation water supply, rural water supply, municipal water supply or industrial water supply to the relevant Water User Entities including Municipalities, Water User's Associations, Industrial Users and State agencies responsible for delivery to the respective sector or to a Sub-surface Water User's Association or entity that operates a well field of multiple sub-surface water tube wells, bore wells or other wells on behalf of multiple users;*

*(iii) Bulk Water Entitlements for irrigation, shall be issued by River Basin Agency, to the Water User's Associations at the primary unit level, Distributary level and Canal or Project level Associations and River Basin Agencies shall not receive Entitlements but shall act as conveyance entities for the Entitlements issued to the Water User's Associations;*

*(iv) Water User Entities including Water User's Associations, managing the aggregate of Entitlements on behalf of a group of Entitlement holders may be issued an Aggregate Bulk Entitlement;*

*(v) Individual Water Entitlements may be issued by River Basin Agency only for the construction and operation of individual lift irrigation schemes from surface water sources, bore-wells, tube wells or other facilities for extraction of sub-surface water. Such Entitlements shall be administered, registered, measured and monitored by the respective River Basin Agency in close co-ordination with relevant Government agencies. Where such facilities extract water from alluvial aquifers that are conjunctive with the surface water of a basin, the issuance and operation of such Entitlements shall be conjunctively co-ordinated with the use and yield of surface water resources of the basin and shall be compatible with the overall water resource plan of the local area and the respective river basin and the sustainable use of the sub-surface water resources.*

*(vi) Bulk Water Entitlements shall be for a specific proportion of flow, storage or other determination of the annual yield of a water resources or facility and the Entitlement shall be measured volumetrically and with respect to time of delivery and flow rate of delivery;*

*(vii) The allocation of a percentage of the water available under the Entitlements of each facility, in the drainage basin or river basin shall be determined jointly by the River Basin Agencies and Water User Entities based upon the hydrology and other relevant parameters with regard to the specific basin. This allocation shall be utilised for the determination of the amount of water to be made available under each Entitlement for that specific year or runoff season;*



### **3.4.3 Methodology of Implementation of Criteria under section 11 (g):**

WUA shall apply for their water demand in the formats (as prescribed by Government) to the respective canal officer (RBA) giving quantity, purpose, location (normally canal head where measuring device is installed) etc.

Bulk Water Use Entitlements shall be determined as per the procedure given in Para 4.2, 4.3 & 4.4 & 4.5 of this manual by considering all three formats viz Prescribed, Applicable and Sanctioned Entitlements. Whereas issuance of BWUE shall be done as per section 4.5 (General procedure applicable for all the three seasons) and further, entitlements shall be determined as per the checklist given in Annexures 2 & 3 of this manual. The methodology for implementation of point-wise criteria in para 3.4.2 will be as under;

(i) For normal years when the dam is full, these Entitlements may be termed "Prescribed Water Use Entitlements". Whereas, Applicable Water Use Entitlements may be determined as per section 4.2 of the manual by considering Annexure- 3 and water available as of 15 Oct of the year.

The concerned canal officer shall discuss the Pre-Irrigation Programme (PIP) with WUAs officials and considering the current year storage shall issue Applicable Entitlement order to WUA in the format as prescribed by Government.

(ii) RBA shall issue the Entitlements to each category of users viz. Agriculture, Domestic and Industrial and for this purpose, WRD shall devise a common format for each category, which shall be used by RBA while issuing the Applicable Entitlement order. However, the format for issuance of entitlement order shall include the details viz. Name of Project / River System / Storage Facility, type of user category, volume of water, average discharge, if water is supplied through a canal, in cubic meters per second, exact chainage and period of flow shall be mentioned.

(iii) RBA shall issue Bulk Water Entitlements to the primary level WUAs. Whereas in case of higher level Water User Associations viz Project Level (PLA), Distributary Level (DLA), Canal level (CLA) they shall be considered as conveyance entities for the Entitlement purpose.

The conveyance losses in the system above the primary unit level (Minor Level) shall be the responsibility of the service provider/RBA.

(iv) PLAs, DLA or CLA have to manage Aggregate of Entitlements on behalf of a group of Entitlement holders, therefore, they may be issued as Aggregate Bulk Entitlement.

(v) RBA shall issue individual entitlement to Non-WUA entities i.e. for individual lift irrigation schemes from reservoir / canal or river within the limits prescribed by the Government. If sanctioned quantity is less than permissible limits, entitlement sanctioned for such individual lifts shall be taken into consideration for determination of entitlement to WUAs.

(vi) Water Entitlement orders as stated above in 11 (g) (ii) shall be such as to cover all the aspects given in Sec. 11 (g) (vi), that means a specific proportion of flow, storage or other determination of the annual yield of a water resources or facility. The entitlement shall be measured volumetrically in cum/sec. and with respect to time of

delivery per rotation in irrigation seasons. For domestic & industrial users, entitlements shall be in Million Litres per day (MLD) and Million Cubic Meter annually (Mcum).

(vii) The allocation of a percentage of the water available under the Entitlements of each project shall be determined jointly by and the River Basin Agencies and Water User Entities considering the current utilizable water availability in the project. This allocation shall be utilized for the determination of the amount of water to be made available under each Entitlement for that specific year or runoff season.

#### **3.4.4. Criteria for Modification in Entitlement**

As per, Section 11(h), of MWRRA Act 2005, “to lay down the criteria for modification in Entitlements for the diversion, storage and use of the surface and subsurface water of the State shall include the following”

(i) Aggregate Bulk Water Entitlements will be considered as Bulk Water Entitlements under the provisions of this Act except that they shall not be a usufructuary rights and will only be adjusted by the Authority if there is a compensating change, under the provisions of this Act, to any component Bulk Water Entitlement that comprise part of the Aggregate Bulk Water Entitlement;

(ii) In the event that any Water User Entity wishes to use its category priority to mandate a change in the use or volume of any Entitlement, that entity must demonstrate in a public hearing before the Authority, that it has exhausted all attempts to conserve, increase efficiency and manage its demand of water within its, Entitlement and has exhausted all opportunities to increase its Entitlement through a transfer within the voluntary, market-based economy. If, after such a public hearing, the Authority deems such a mandated transfer, on either an annual or permanent basis, to be legal and necessary in the interest of the people of the State, the Authority shall then determine a fair and just compensation as determined by the market value of the water resource, to be paid to the Entitlement holder by the entity exercising the mandated user category preference.

#### **3.4.5 Criteria for Trading,**

Provision as per Section 11(i), of MWRRA Act 2005, is as under:

“11 (i) to fix the criteria for trading of water Entitlements or Quotas on the annual or seasonal basis by a water Entitlement holder, which among others, include the following, -

(i) Entitlements, except Aggregate Bulk Water Entitlements, are deemed to be usufructuary rights which may be transferred, bartered, bought or sold on annual or seasonal basis within a market system and as regulated and controlled by the Authority as established in the rules of the Authority;

(ii) Quotas of water determined by the seasonal or annual allocation assigned to an entitlement shall be volumetric usufructuary rights which may be transferred,

bartered, bought or sold on an annual or seasonal basis within a market system as established and controlled by the rules of the Authority;

(iii) Bulk Water Entitlements or Quotas shall be transferable within the respective category of use as long as such transfers are compatible with the operation of the specific water resource facilities involved. Such annual transfers shall be managed and registered with the respective River Basin Agency which shall have the power to approve or deny such proposed transfers if they are incompatible with the operation of the facility or would damage the Entitlements or rights of other users within the system. The River Basin Agency may charge a nominal fee for the processing and registering such transfer but shall not participate in any compensation between Entitlement holders as a part of such transfer.”

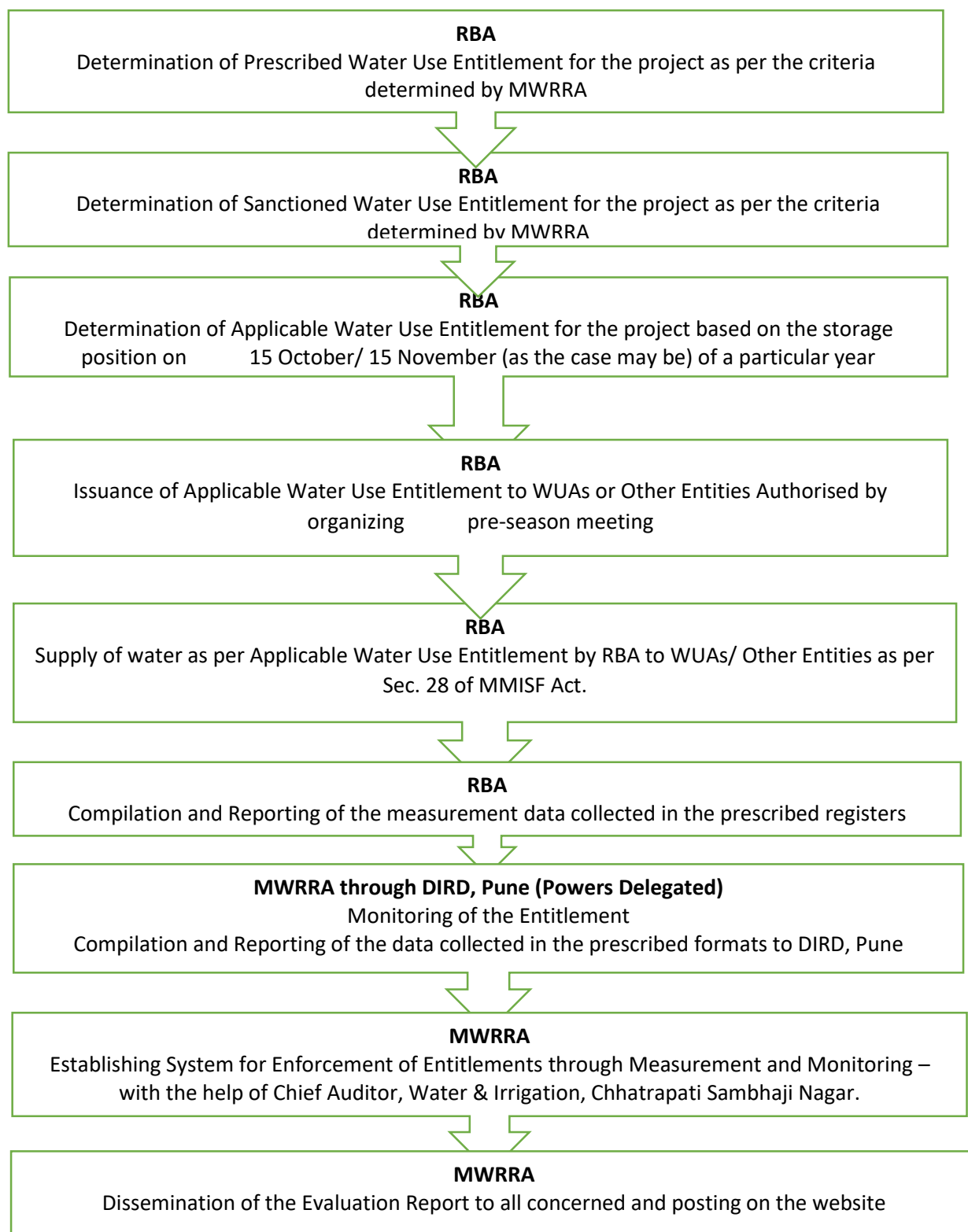
**However, detailed Criteria and system for trading of Entitlements has not been evolved.**

## 4.0 Entitlement Issuance, Modification, Distribution

### 4.1 Flow chart of Entitlement

Supply of water as per entitlements implemented in light of Section 28 of MMISF Act 2005 & Rule 18 of MMISF Rule 2006. A step-by-step procedure in Determining, Issuance, Monitoring, and Evaluation of the "Entitlement Programme" is shown in Figure - 1.

**Figure 1: Step-by-Step Procedure in Implementation of "Entitlement Programme"**



#### 4.1.1 Entitlement Approval & Issuance by RBA

Sr. No.	Particulars	Approval by	Issuance of Specific orders	Remark
A]	IRRIGATION -			
i)	Prescribed Water Use Entitlement – Major , Medium & Minor Projects	Superintending Engineer	Executive Engineer	As per Project Report
ii)	Sanctioned Water Use Entitlement to WUAs	Superintending Engineer	Executive Engineer	To be given in Agreement
iii)	Applicable Water Use Entitlements % cut	Executive Engineer	Executive Engineer	On Storage of 15 <sup>th</sup> Oct./15 <sup>th</sup> Nov. as the case may be .
	a) upto 30%			
	b) (Above) > 30%	Superintending Engineer	Executive Engineer	
B]	NON-IRRIGATION [Domestic, Industrial & thermal Power Stations]			
i)	Upto 15 % of Live Storage of the Project	Chief Engineer	Executive Engineer	Non-Irrigation Reservation shall include Evaporation loss, Conveyance loss & Other Losses .
ii)	15 to 25 % of Live Storage of the Project	Standing Committee at Secretary Level	Executive Engineer	
iii)	Above 25 % of Live Storage of the Project	High Power Committee at Minister Level	Executive Engineer	

[Ref.G.R. of Jan.2003 (No. Misc. 1001/ (154/10)/IMP) about Non-Irrigation (Domestic, Industrial, Thermal Power Stations, other agencies) & water supply]

## 4.2 Compilation of Information and data of irrigation projects

All the information and data available on various projects (from the approved Project Reports and Records) is to be compiled by RBA in Formats of Annexure 2 and 3 by ensuring the following points.

- ❖ designed utilization in kharif, rabi, hot weather,
- ❖ live, dead, gross storages.
- ❖ total cultivable / culturable command area (CCA),
- ❖ evaporation loss (annual, seasonal).
- ❖ river losses (if any pick-up weir is on downstream side of the storage dam).
- ❖ river gain (post monsoon flow, return/regeneration flow, if any),
- ❖ water allocation to bulk consumers for lift, pressurised irrigation system in the influence area of the project,
- ❖ Sanctioned lift irrigation, pressurised irrigation systems and corresponding CCA,
- ❖ net delineated CCA of flow area, total CCA of the project considering CCA on permissible lift from reservoir and canal lift and area of pressurized /drip irrigation systems sanctioned during project operation,
- ❖ water allocation to the domestic sector,
- ❖ water allocation to the industrial sector,
- ❖ list of WUAs at minor level with name, address, registration number and date, category, minor number, no. of beneficiaries, delineated CCA under each WUA,
- ❖ details about canal distribution network i.e. main canal and also each distributary/branch canal/minor etc. length/ discharge capacity/ present status of functioning/ and whether lined or unlined.

## 4.3 Determination of Prescribed Unit Water Use Entitlement (PUWUE)

The following table gives the conveyance efficiencies to be adopted for the main/branch canal, distributaries, and minor, and shall be used in determination of Entitlements in **Annexure 2 & 3**.

**Table 3. : Normative conveyance efficiencies**

Canal type	Lined		Unlined	
	Before improvement	After improvement	Before improvement	After improvement
Main/ Branch Canal	0.85	0.95	0.80	0.85
Distributary	0.85	0.90	0.80	0.85
Minor	0.85	0.90	0.80	0.85

**Note:** Field officers are advised not to adopt lower values for conveyance efficiencies without prior approval of WRD in case of Major projects, and from concerned Chief Engineer in case of other category projects.



The RBA will work out the Prescribed Unit Water Use Entitlement (PUWUE) for use in Kharif Season in a normal year as per project planning and also will determine the Applicable Entitlement for the adverse years after considering the water storage position. (See Format at **Annexure – 2**)

The RBA will work out the PUWUE for use in Rabi and Hot Weather season in a normal year as per project plan. (Format at **Annexure - 3**).

While arriving at Prescribed Water Use Entitlement based on information about water availability considering committed use for other categories, evaporation, loss due to siltation and conveyance loss as per various provisions given in this Annexures shall be used. For lift Irrigation sanctioned by RBA, the schematics diagrams given in Annexure -1 of MMISF Act's Rules, 2006 and **Annexure - 14 (A) & Annexure - 14 (B)** shall be referred to for any clarification.

#### **4.4 Determination of Applicable Water Use Entitlement**

For every year, considering water storage position on 15th Oct. RBA shall determine the Applicable Water Use Entitlement for Various Seasons as under:

##### **4.4.1 Kharif season**

The Applicable Unit Water Use Entitlement (Quota) for the Kharif season will be worked out by the RBA representative officer, only if the live storage attains at least 33% of the designed live storage as per Government policy. It will be on the same basis as the PUWUE (Kharif) for the given year. This will be determined as follows:

**Applicable entitlement for Kharif use for a WUA = PUWUE (Kharif) x CCA of WUA**  
(Worked Out as per **Annexure 2**)

##### **4.4.2 Rabi season**

The Applicable Unit Water Use Entitlement (Quota) for the Rabi season will be worked out by the RBA representative officer on the basis of the PUWUE (Rabi) for the given year as determined on the basis of the storage position of the year. This will be worked out as follows:

**Applicable entitlement for Rabi use for a WUA PUWUE (Rabi) x CCA of WUA**  
(Worked Out as per **Annexure 3**)

##### **4.4.3 Sharing Water Deficit**

While working out sharing water in deficit time, first a cut in non-irrigation uses (viz. domestic and industrial) shall be applied in a year when the reservoir has not attained its designed capacity on following lines so as to share the distress as per the **Criteria for Distribution of Surface Water Entitlements by River Basin Agencies for Domestic & Industrial Uses issued by the authority vide Order No. 19 of 22 Sept. 2017**. Relevant extract of the same is reproduced below:

## **8. Sharing Water Deficit**

### **8.1 For domestic WUEs -**

As per the State Water Policy, the domestic water use for drinking, cooking, hygiene and sanitation including livestock has first priority. However, natural water availability is extremely diverse across the various river basins and sub-basins of the state. Annual variations are approximately within the range of 30%. The annual fluctuations in rainfall and consequent water deficit in the reservoirs need to be addressed. During the deficit years, the DBWUs will also have to share some deficit. However, while doing so, the basic needs for health & hygiene should not be lost sight of. Considering this aspect;

Allocation for DBWUs from the reservoir in the deficit year shall be governed by following formula;

Allocation for Domestic,  $A_D$  (in percentage) =  $70 + [(U \times 30) / 100]$

Where  $U = \frac{(\text{Reservoir Storage on 15th October} + \text{Kharif Utilisation}) \times 100}{\text{Design Annual Utilization from the Reservoir}}$

Design Annual Utilization from the Reservoir

Applicable cut in % =  $100 - A_D$

**Note** - In case the live storage in the reservoir on 15th October is less than or equal to total domestic water entitlements from the reservoir for the balance year, all available water shall be kept reserved for domestic sector.

**Illustration:** - If the live storage as on 15th October plus the Kharif utilization already done is 90% i.e. deficit in water availability is 10%, the deficit to be shared by domestic sector shall be calculated as under;

$A_D = 70 + [(90 \times 30) / 100] = 97 \%$

Applicable cut =  $100 - 97 = 3 \%$

So Bulk Water User in Municipal corporations (having population less than 50 lakh) will get at  $135 \times 97 \% = 131 \text{ lpcd}$

### **8.2 For Industrial WUEs**

Allocation for IBWU from the reservoir in the deficit year shall be governed by the following formula;

Allocation for Industrial,  $A_I$  (in percentage) =  $60 + [(U \times 40) / 100]$

Where  $U = \frac{(\text{Reservoir Storage on 15th October} + \text{Kharif Utilisation}) \times 100}{\text{Design Annual Utilization from the Reservoir}}$

Design Annual Utilization from the Reservoir

Applicable cut in % =  $100 - A_I$

Taking into consideration the cut applicable to DBWUs & IBWUs the balance water available will be taken to determine Applicable Entitlement for irrigation as per procedure as prescribed earlier in Para 4.4.

## **4.5 General procedure applicable for all the three seasons**

1. Entitlements for irrigation use shall be given only to WUAs volumetrically for those areas of the project where compliance of all provisions under MMISF Act, 2005 is done.
2. In the areas where WUAs or other entities are not formed, supply of water for irrigation shall be given to other entities as per section 8 of MMISF Act, 2005 as per the provisions of Maharashtra Irrigation (MI) Act, 1976.

3. In projects where delineation of the WUA area has been completed partially but irrigation is required for the entire command area, in such cases the provisions under MMISF Act 2005 are applicable to that area where all compliances under the Act have been done. Whereas, in the remaining area water is to be supplied under the provisions of Maharashtra Irrigation Act 1976. Register of Individual Water Users shall be maintained as per **Annexure 3 (1) (a)**.

4. Non-irrigation (Domestic & Industrial) entitlements are to be given for all projects, even if they are not notified under MMISF Act, 2005.

5. Project Authority (Superintending Engineer for major and Executive Engineer for medium and minor projects) shall accord approval of Applicable Entitlement after following the procedure given in 4.4 above. (Quota for WUAs / Non WUA entities for utilization during Kharif, Rabi and Hot Weather Seasons.)

6. As per provisions in Sec. 53 (j) of MMISF Act, 2005, before the commencement of the season, concerned Engineers from Project Authority will convene a pre-season meeting with officials of all WUAs and inform about Applicable Water Entitlement (Quota) admissible to them, so that they can plan their rotation schedule.

7. The WUA has a right to check the calculations of the Applicable Entitlement and may raise objections if any discrepancy is found.

8. The minutes of the pre-season meeting will be prepared and shared with both parties.

9. After allocation of entitled quota the WUA have liberty to utilize the balance water if any to the subsequent irrigation season with accounting for losses where ever possible.

## **5.0 ENFORCEMENT of ENTITLEMENT through Measurement and Monitoring**

### **5.1 Objective**

The function of regulation is carried out by the Authority in light of Section 11(o) of the MWRRA Act (Amendments & Continuance) 2011, which reads as

*"(o) to establish a system of enforcement of the Entitlements issued by the concerned River Basin Agency to various Categories of Use and its regulation, through measurement and monitoring, with a view to ensure that the actual use of water, both in quantity and type of use, are in compliance with the Entitlements issued;"*

(i) To establish a system of enforcement of the Entitlement

(ii) Regulation of Entitlement issued

(iii) To establish a system for measurement and monitoring

To ensure the actual uses of water after their allocation to the WUA/non irrigation use, RBAs shall monitor the Entitlements of Various categories according to provision under 1) Revised Technical Manual for Determining, Regulating and Entering water Entitlements in Irrigation projects of Maharashtra and 2) Revised Criteria for Distribution of Entitlement for Domestic & Industrial water uses.

As per this revised manual the function of **monitoring** is delegated to DIRD Pune by MWRRA (**Annexure – 15**) and **enforcement** of entitlements will be done by MWRRA through Chief Auditor, Water and Irrigation, WALMI, Chhatrapati Sambhajanagar (**Annexure – 16**).

### 5.3 Calibration and Flow Measurements:

Sufficient number of Measuring Devices of standard make shall be installed at strategic locations such as head of minors, distributaries, branch and main canals from where Entitlement is to be given to the WUAs. To maintain the accuracy of flow measurements, the measuring devices installed at specific location has to be attended time to time by calibration by adopting standard procedure.

Calibrations of measuring devices should be carried out at the beginning of the Rabi season. The following table indicates the level of responsibility for calibration and cross checking of flow measurements. In all cases, the date and time of calibration, results, corrective measures/ adjustments done to MDs to obtain the rated discharge should be entered in the gauge discharge table shown as **Annexure 4**.

**Table 4. : Level of Responsibility for Cross Checking, Calibration and Flow Measurements**

<b>Location of Measuring Device</b>	<b>Officer Responsible for Calibration and Cross Checking of Flow</b>	<b>Remark</b>
<b>A) Major project</b>		
Head of main canal	Superintending Engineer (S E)	To be verified jointly by dam in-charge EE & Management EE.
Off-take points of distributary / branch canal	Executive Engineer (E E)	To be verified by the concerned Management SDE / SDO / AE Gr.-I/ AAE. 10% or minimum 1 recording to be checked by EE
Off-take points on minor	SDE / SDO / AE Gr.-I / AEE	To be verified by concerned Sectional Engineer / AE Gr. II 10% or minimum 1 recording to be checked by EE
<b>B) Medium Project</b>		
Head of main canal	EE	To be verified jointly by dam in-charge EE & the Management EE
Off-take points of distributary / branch canal	SDE/ SDO / AE Gr. –I / AEE	To be verified by concerned management SDE / SDO / AE Gr. –I / AEE. 10% or minimum 1 recording to be checked

		by EE
Off-take points of minor	SDE / SDO / AE Gr. –I / AEE	To be verified by concerned Sectional Engineer / AE Gr. II 10% or minimum 1 recording to be checked by EE
<b>C) Minor Project</b>		
Head of main canal	SDE / SDO / AE Gr. –I / AEE	To be verified by SDE / SDO / AE Gr. –I / AEE. 10% or minimum 1 recording to be checked by EE
Head of minor	SDE / SDO / AE Gr. –I / AEE	To be verified by concerned Sectional Engineer / AE Gr. II & WUA representative. 10% or minimum 1 calibration to be checked by SDE / SDO / AE Gr. –I / AEE.

Note: The record of cross-check specified as above shall be maintained by Canal officer & made available as and when requested.

Report of monitoring of calibration and cross checking of flow measurements by various officers as per above table will be sent to CE for Major projects and to SE for Medium and Minor projects.

## 6.0 MONITORING BULK WATER ENTITLEMENT:

### 6.1 Information to be furnished Before the Start of Season

#### [Section 11 (k)]

RBA representative shall conduct pre-season project wise meeting well before start of the season and furnish a copy of minutes of pre-season meeting to Authority in the Proforma prescribed. Such meeting shall be conducted before start of Kharif / Rabi as well as HW season.

RBA representative shall upload **Annexure 3 (1), and Annexure 3(2)** along with a copy of the minutes of pre-season meeting, on WRD Portal.

### 6.2 Delegation of Powers to Directorate of Irrigation Research and Development, (DIRD) Pune.

Directorate of Irrigation Research and Development (DIRD) Pune is already collecting the relevant data of Water Users Associations in the State. Hence powers are delegated to DIRD, Pune for Monitoring Bulk Water Entitlement vide Authorities letter No./MWRRA/CR48/2019/Entitlement/344 dated. 06/06/2024. All concerned RBAs shall provide the relevant data to DIRD, Pune. As **Annexure – 15**.

## **7.0 Development of State-Level Data-Base of Entitlement :**

### **7.1 Legal Provision:**

Section 11 (s) of the MWRRA Act, 2005 (modified from time to time) states that *“to develop the State Water Entitlement database that shall clearly record all Entitlements issued for the use of water within the State, any transfers of Entitlements and a record of deliveries and uses made as a result of those Entitlements;”*

### **7.2 State Water Informatics Centre (SWIC)**

The State Government has taken a decision to establish the State Water Informatics Centre (SWIC) vide G.R.No.MISC-2019/157.C.R.53/2019 dated 09/10/2024. Hence, Government has been asked to develop State Entitlement Data Base as a part of entire State Water Information within SWIC vide MWRRA's letter dated 28/02/2025.

### **7.3 Roles & Responsibilities RBA :**

- (i) The representative from RBA i.e. SE / EE shall ensure the uploading of all the data on total quantity of water released and reached at Head/ Middle/ Tail sections of WUA immediately after the each rotation during Kharif / Rabi / Hot Weather Season cultivations as per the Annexures 5(1), 5(2) and 5(3) The remark of DIRD, Pune shall also be obtained and uploaded at the end of each season for all WUA operating under the project.
- (ii) RBA representative shall also ensure the uploading of any correspondence or corrections made by DIRD Pune in connection with the enforcement of rotation or about standard format issued by them.

### **7.4 Information to be uploaded on the WRD Website at the End of the Irrigation Year**

- (i) RBA representatives viz. SE / EE shall upload the **Annexure 7** on WRD portal, showing project-wise information within 15 days after the last rotation of a particular year.
- (ii) The SE should upload the detailed report on Evaporation losses, Conveyance losses from canal and outcome sedimentation survey at the end of water year for all the Major and Medium Projects handled by him.

## 8. Registers to be maintained

Authority has evolved various proformas for monitoring the delivery of entitlements to

WUAs. Some registers as specified in the Table below are required to be maintained

by WUA and Field officers of RBA:

**Table 5. : Registers to be maintained by RBA and WUA as per MMISF Act 2005**

Title	Annexure No.	To be Maintained by
Sanctioned Water Use Entitlement for Normal Year for WUAs	3 (1)	Both WUA and RBA
Sanctioned Water Use Entitlement for Individual Farmers	3 (1) (a)	RBA
Applicable Water Use Entitlement WUA for storage of 15 <sup>th</sup> Oct.	3 (2)	Both WUA and RBA
Field Book of Gauge Readings	4	Both WUA and RBA
Kharif Water Use by WUA	5 (1)	Both WUA and RBA
Rabi Water Use by WUA	5 (2)	Both WUA and RBA
Hot Weather Water Use by WUA	5(3)	Both WUA and RBA
Water Use for Domestic Purpose.	6 (1)	Both PLA and RBA
Water Use for Industrial Purpose	6 (2)	Both PLA and RBA
Entitlement Actually Received and Sanctioned to WUAs	7	RBA
Register of Wells Within 35 m from Irrigation canal	8 (a)	RBA
Register of Wells In command area for Non Irrigation	8 (b)	RBA
Bill of Water Charges for WUAs	9	RBA
Receipt of Water Charges for Volumetric supply to WUA	10	RBA

- The project wise proforma (except Gauge Filed Book) will be got computerized by the RBA officer maintained and preserved in the concerned division / circle office. Copies of annexure may be furnished as per requirement.

- In addition, WUA & concerned RBA sub-division office / division office & circle office shall compile and furnish details to Authority as per proforma prescribed and also maintain such detailed information in connection with rotations for a particular irrigation year.
- The project authority shall maintain a register of wells in the command area, beneficiary-wise (**Annexure 8 a & 8 b**). WUAs shall promote use of groundwater to meet the objective of keeping the groundwater table in its area of operation beyond 3 m from the ground level to avoid incidence of salinity and waterlogging.
- Care should be taken to see that the measuring device is not tampered with by any miscreant nor any malpractice employed in its operation. Watch shall be kept both by WUA and the project authority. If it is found that MD is tampered with, action shall be taken as stipulated in Sections 60, 61 and 62 of the Maharashtra Management of Irrigation System by Farmers (MMISF) Act XXIII of 2005.
- The Gauge Discharge Table shall be available with the measure, Canal Inspector (CI), Sectional Officer (SO) and also with the concerned WUA.
- Daily readings shall be recorded in the time-bound manner in the “Gauge Field Book of Water Use” of this Technical Manual as stipulated in Annexure 4.
- In addition to the above instructions incorporated in Annexure-3 of Rule 14 of the MMISF Rules, 2006 shall also be scrupulously followed. (**See Annexure – 11**)

## 9. Dispute Resolution

- Water entitlements are to be decided after the preseason meeting & a record of it shall be maintained in **Annexure – 12**.
- The State Government shall authorize any competent officer or officers for each River Basin Agency as Primary Dispute Resolution Officer (PDRO) to resolve disputes with regard to the issuance or delivery of entitlements under the Act [(Section 22 (1))]. Accordingly, the Government has appointed two Chief Engineers for Godavari – Upper & Lower, two Chief Engineers for Vainganga – Nagpur & Amravati, and one Chief Engineer for Krishna, Bhima, Tapi & West flowing river of Konkan each vide G.R No. Misc./009/265/09/IM (P) dt. 25 Aug 2009 (Marathi).
- The PDRO shall follow such procedure as may be prescribed by the Authority while hearing the dispute. However, since there are no Rules notified by the Government for the MWRRA Act, PDROs shall follow a similar procedure as given in the MWRRA (Conduct of Business) Regulations, 2013, till such Rules are notified.
- While resolving the dispute, the PDRO shall take into account the observations of field officers noted down in the gauge register during rotation.
- Any person aggrieved by the order of the PDRO may, within 60 days from the date of receipt of such order, prefer and appeal to the Authority.
- In the case of ambiguity in the meaning of some term/definitions used in this manual, and provision of the act will prevail.



## **10.Validity of the Criteria / Technical Manual :**

This Criteria / Technical Manual is valid from June 2025 and will be valid for a period of five years. Thus, the earlier Technical Manual-May 2015 shall stand superseded from the issue of this document.

## **11. Financial Audit :**

Every WUA and Non WUA Entities shall get its account audited annually in the manner prescribed in Rule – 38 of MMISF, Rule 2006. For minor irrigation projects, the managing committee of WUA shall appoint an experienced auditor for the purpose, and for WUAs on major & medium projects, Chartered Accountants from a panel of CA's provided by the concerned Superintending Engineers for audit purposes.

## **12. Bulk Water Tariff**

- The project authority will levy tariffs for bulk volumetric supplies to irrigation and water supply as per the existing tariff orders.
- The WUA shall collect water charges from the beneficiaries as per section 27 of the MMISF Act, 2005.
- **Annexure 9** is for Water Tariff Information of charges by RBA and paid by WUAs, water charges billed by WUA to its members & collected, grants received by RBA to WUA is required.
- The Project Authority shall maintain data on water charges, billed and collected, in the proforma at **Annexure 10**.

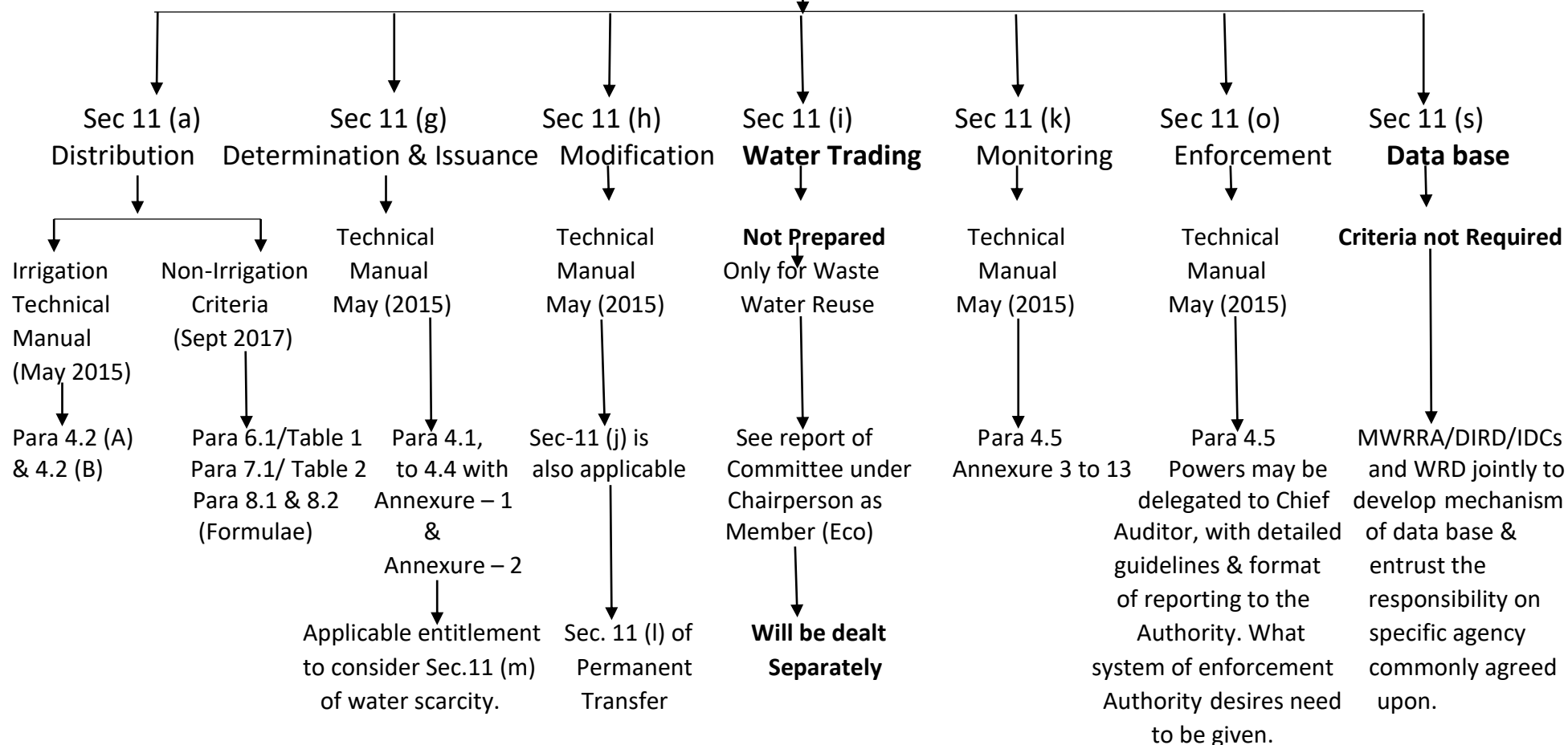
## **13. Annual Regional Entitlement Workshops:**

The Authority, Jointly with the WALMI / Any Selected University / concerned Irrigation Development Corporation will organize Entitlement Workshops at the Six Revenue Divisional Headquarters. The objective of such workshops shall be to take feedback from both, Service Providers and Water User Associations about implementation of this Technical Manual. Feedback taken in such workshops will help in the improvement of the Technical Manual in the next review & revision. Sample form of such feedback after workshops in 2010-11, is enclosed as **Annexure – 13**.

## **14. Difficulties in Implementation:**

In case of any difficulty in implementation of these Criteria, the DBWU / IBWU / WUA / RBA may approach the Authority with specific petition. The decision of the Authority shall be final.

## Various Provisions at a glance as per the Act to be included in the Criteria of the Entitlements in this Technical Manual



## ANNEXURE 2 (Para 4.3 & 4.4)

### FORMAT

#### CHECKLIST OF ENTITLEMENT

**Prescribed Unit Water Use Entitlement for flow irrigation for “Kharif Season”  
in “Normal year” For Irrigation Year.....**

Sr.No.	Description	Data
1	2	3
1	<b>Name of Project</b>	
2	Location	
i)	Taluka	
ii)	District	
3	Basin	
4	Sub-Basin	
5	Name of River/Nala	
6 (a)	Catchment Area (Sq.km.)	
(b)	Intercepted Catchment Area (Sq.km.)	
(c)	<b>Free Catchment Area</b> (Excluding the C.A of all U/s storages) (Sq.km.)	
7	Type [Major/Medium/Minor/Minor(LS)]	
8	<b>Year of completion of Dam</b>	
9	Type of dam	
10	Gross storage (Mm <sup>3</sup> )	
11	<b>Live storage (Mm<sup>3</sup>)</b>	
12	Dead storage (Mm <sup>3</sup> )	
13	75% Dependable yield at site (Mm <sup>3</sup> )	
14	50% Dependable yield at site (Mm <sup>3</sup> )	
15	Top Bund / Dam Level (TBL) in “m”	
16	Maximum Water Level (MWL) in “m”	
17	Full Reservoir Level (FRL) in “m”	
18	Spillway crest level in “m”	
19	Minimum Draw Down Level (MDDL) in “m”	
20	Maximum dam height (m)	
21	Sill level of head regulator/s (m)	
22	Length of Left Bank Canal [LBC in (km)]	
23	Length of Right Bank Canal [RBC in (km)]	
24	Capacity of LBC (m <sup>3</sup> /sec)	
25	Capacity of RBC (m <sup>3</sup> /sec)	
26	Gross Command Area (GCA) in ha	
27	Culturable Command Area (CCA) in ha	
28	Irrigable Command Area (ICA) in ha	
29	Area under MI Act,1976 (Non delineated area)	
	Individual Farmers as per (M I Act, 1976) – Total (Nos)	
	Water Utilization in (Mm <sup>3</sup> )	
	Irrigated area in (ha)	
30(a)	Total number of Water User Associations (PLA + DLA +CLA) under the	

Sr.No.	Description	Data
	project.	
(b)	<b>Total delineated area of the project for flow irrigation (ha)</b>	
(c)	No. of WUAs under Entitlement (PLA + DLA +CLA)	
(d)	WUA-wise delineated area of the project for flow irrigation (ha)	
(e)	Total number of members	
(f)	WUA-wise number of members.	
31	Cropping intensity % as per project report	
i)	Kharif	
ii)	Two seasonal	
iii)	Rabi	
iv)	Hot weather	
v)	Perennial	
32	<b>Approved utilization</b> (for irrigation) (Mm <sup>3</sup> ) as per project report.	
i)	Kharif	
ii)	Two seasonal	
iii)	Rabi	
iv)	Hot weather	
v)	Perennial	
33	Non-irrigation approved (Mm <sup>3</sup> ) with breakup as per project report.	
i)	Drinking Water	
ii)	Industrial use	
iii)	Other uses	
34	<b>Non irrigation actual</b> use (Mm <sup>3</sup> )	
i)	Domestic	
ii)	Industrial	
iii)	Other uses	
35	Season wise <b>evaporation loss</b> (Mm <sup>3</sup> )	
i)	Kharif	
ii)	Fair weather	
iii)	Total annual	
36	<b>Post monsoon inflow</b> (dry weather) (Mm <sup>3</sup> )	
i)	As per Project Report	
ii)	As per actual observation (Preferred)	
37	Reduction in Live Storage due to <b>siltation</b> in reservoir (Mm <sup>3</sup> )	
i)	Actual as per survey	
ii)	Or as per formula (considering free catchment 6-c) [1.5-hectare meter per 100 Sq.km. of catchment area per year].	
38	<b>Other obligatory commitment if any.</b> (Mm <sup>3</sup> )	
i)	Kharif	
ii)	Rabi	
iii)	Hot weather	
39	<b>Water availability @ canal head for Kharif.</b>	
i)	Water utilization as per Project Report (Mm <sup>3</sup> ).	

Sr.No.	Description	Data
ii)	Evaporation loss 35 (i) + [35 (ii) or 35 (iii)] (Mm <sup>3</sup> ).	
iii)	Deduction for siltation 37[(i) or (ii)] in Mm <sup>3</sup>	
iv)	Deduction for non-irrigation use [34 (i + ii + iii)] in Mm <sup>3</sup>	
v)	Deduction for irrigation use (excluding Kharif) [32 (ii+ iii+ iv+ v)] (Mm <sup>3</sup> ).	
vi)	Deduction for any other commitment [38 (i) + (ii) + (iii)] in (Mm <sup>3</sup> ).	
vii)	Water available @ canal head before reservoir lift [39 (i) – 39(ii+iii+iv+v+vi)] Mm <sup>3</sup>	
40	<b>Deductions for Reservoir / Canal Lift</b>	
i)	Reservoir lifts	
ii)	<b>Case (A) where canal takes off directly from the reservoir.</b>	
a)	Flow lifts	
i)	Maximum permissible area at 6% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 3.6% of water available at canal head (Mm <sup>3</sup> ) i.e. [39 (vii)]	
iv)	Actual water allowance for sanctioned area = =(ii / i)*0.036* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
b)	<b>Pressurized lifts (Drip/Sprinkler)</b>	
i)	Maximum permissible area at 14% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 5.65% of water available @ canal head [39(vii)] in (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area =(ii / i)*0.0565* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
c)	<b>Canal lift (Outside command)</b>	
i)	Maximum permissible at 10% of (CCA-perennial area) (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance @ 7% of water available at canal head i.e. [39(vii)] in (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area =(ii / i)*0.07* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
41	<b>Case (B) where canal takes off from the D/s of pick up weir.</b>	
a)	<b>Lift from dam storage.</b>	
i)	Maximum permissible area at 1% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 0.6% of water available at canal head [39(vii)] in (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area =(ii / i)*0.006* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
b)	<b>Pressurized lift (Drip/Sprinkler)</b>	
i)	Maximum permissible area at 14% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 5.65% of water available at canal head [39(vii)] in (Mm <sup>3</sup> )	

Sr.No.	Description	Data
iv)	Actual water allowance for sanctioned area =(ii / i)*0.0565* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
c)	<b>Lift on river portion between dam to pick up weir.</b>	
i)	Maximum permissible area at 5% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 3% of water available at canal head [39(vii)] in (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area =(ii / i)*0.03* water @ canal head [39(vii)] in (Mm <sup>3</sup> )	
d)	<b>Deduction for transit loss in the river portion in fair weather.</b>	
	= 10% of water @ canal head.	
e)	<b>Deduction of water quantity for non-irrigation use in between the river portion (between dam to pick up weir)</b>	
f)	<b>Canal Lift ( Outside command )</b>	
i)	Maximum permissible area at 10% of [CCA - Perennial area] (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 7% of water available at canal head [39(vii)] in (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area =(ii / i)*0.07* water @ canal head [39 (vii)] in (Mm <sup>3</sup> )	
42	Net water available at canal head in (Mm <sup>3</sup> )	
	Case A [39 (vii) - 40 (a (iv) + b (iv) + c (iv)).....or	
	Case B [39 (vii) - 41 (a (iv) + b (iv) + c (iv) + d + e + f (iv))	
43	Net water available at canal head considering canal losses (Item No.42 * conveyance efficiency #) (Mm <sup>3</sup> )	
44	Net Area i.e. [30 (b)] \$ (ha)	
45	<b>Prescribed unit water use entitlement for Kharif (43/44) (Mm<sup>3</sup>/ha)</b>	
	i.e. cum / ha	
	Delta (cm)	
#	(1) Conveyance efficiency of 0.80 is assumed for minor tanks, 0.80*0.80 (i.e.0.64) for medium projects and 0.80*0.80*0.80 (i.e. 0.512) for major projects. (2) The efficiency be taken as per Table 4 of this Technical Manual (3) In case actual observed data for conveyance efficiency is available, the observed data be used provided it is <b>duly approved by competent Authority</b> . [WRD in case of Major Projects & from concerned Chief Engineer in respect of other category projects.]	
\$	Net Area is the delineated area of the project (in case the entire CCA is delineated). If the entire CCA is not yet delineated, the CCA be taken as Net area. The Net area is solely flow irrigation area (i.e. exclusive of the lift area).	
NB:-	6 (b) Intercepted Catchment Area is that part of the catchment area which drains into upstream storages / weirs of the project under consideration.	

### ANNEXURE 3 (Para 4.3 & 4.4)

#### FORMAT

#### CHECKLIST OF ENTITLEMENT

Prescribed Unit Water Use Entitlement for flow irrigation for “Rabi season”  
in “Normal Year” For Irrigation Year.....

Sr. No.	Description	Data
1	<b>Name of Project</b>	
2	Location	
i)	Taluka	
ii)	District	
3	Basin	
4	Sub- Basin	
5	Name of River / Nalla	
6 (a)	Catchment Area ( Sq. km )	
(b)	Intercepted Catchment Area (sq.km.)	
(c)	<b>Free Catchment area</b> (excluding the C.A. of all U/s storages) (sq.km.)	
7	Type [Major/Medium/Minor/Minor(LS)]	
8	<b>Year of Completion of Dam</b>	
9	Type of dam	
10	Gross Storage (Mm <sup>3</sup> )	
11	<b>Live Storage (Mm<sup>3</sup>)</b>	
12	Dead Storage (Mm <sup>3</sup> )	
13	75% Dependable yield at site (Mm <sup>3</sup> )	
14	50% Dependable yield at site (Mm <sup>3</sup> )	
15	Top Bund / Dam Level (TBL) in “m”	
16	Maximum Water Level (MWL) in “m”	
17	Full Reservoir Level (FRL) in “m”	
18	Spillway Crest Level (m)	
19	Minimum Draw Down Level (MDDL) in “m”	
20	Maximum Dam height (m)	
21	Sill Level of Head Regulator/s (m )	
22	Length of Left Bank Canal [LBC in (km)]	
23	Length of Right Bank Canal [RBC in (km)]	
24	Capacity of LBC (m <sup>3</sup> / sec)	
25	Capacity of RBC (m <sup>3</sup> / sec)	
26	Gross Command Area (GCA) in ha	
27	Culturable Command Area (CCA) in ha	
28	Irrigable Command Area (ICA) in ha	
29	Area under MI Act, 1976 (Non delineated area)	
	Individual Farmers as per (M I Act, 1976) – Total Nos	
	Water Utilization in (Mm <sup>3</sup> )	
	Irrigated area in (ha)	
30(a)	Total number of Water User Associations (WUA) (PLA + DLA +.CLA) under the project.	
(b)	<b>Total delineated area of the project for flow irrigation (ha)</b>	

Sr. No.	Description	Data
(c)	No. of WUAs under Entitlement (PLA + DLA + CLA)	
(d)	WUA-wise delineated area of the project for flow irrigation (ha)	
(e)	Total number of members	
(f)	WUA- wise number of members.	
31	Cropping intensity % as per project report	
i)	Kharif	
ii)	Two Seasonal	
iii)	Rabi	
iv)	Hot Weather	
v)	Perennial	
32	<b>Approved utilization (for irrigation) (Mm<sup>3</sup>)</b> as per Project Report	
i)	Kharif	
ii)	Two Seasonal	
iii)	Rabi	
iv)	Hot Weather	
v)	Perennial	
33	Non-Irrigation approved (Mm <sup>3</sup> ) with breakup as per Project Report.	
i)	Drinking Water	
ii)	Industrial use	
iii)	Other uses	
34	<b>Non Irrigation Actual (Mm<sup>3</sup>)</b>	
i)	Drinking Water	
ii)	Industrial use	
iii)	Other uses	
35	Season wise <b>Evaporation Loss (Mm<sup>3</sup>)</b>	
i)	Kharif	
ii)	Fair Weather	
iii)	Total Annual	
36	<b>Post monsoon inflow ( dry weather) (Mm<sup>3</sup>)</b>	
i)	As per Project Report	
ii)	As per actual observation	
37	Reduction in Live Storage due to Siltation in Reservoir (Mm <sup>3</sup> )	
i)	Actual as per Survey	
ii)	Or as per formula (considering free catchment 6c) [1.5-hectare meter per 100 sq.km. of catchment area per year)	
38	<b>Other Obligatory commitment if any.</b>	
i)	Kharif	
ii)	Rabi	
iii)	Hot weather	
39	Water availability @canal head.	
i)	Water utilization as per project report (Mm <sup>3</sup> )	
ii)	Deduct water utilization for use in Kharif Mm <sup>3</sup> [32 (i)+34 (i)+35 (i)+ 38 (i)]	



Sr. No.	Description	Data
iii)	Water available at the beginning of Rabi [39 (i) – 39 (ii)] (Mm <sup>3</sup> )	
40	Deductions to get water available at the canal head.	
i)	Deduct [34 (ii)] as per for evaporation loss (Mm <sup>3</sup> )	
ii)	Deduction for siltation [37 (i) or (ii)] (Mm <sup>3</sup> )	
iii)	Deduction for fair weather non-irrigation use [34 (ii)+34 (iii)] (Mm <sup>3</sup> )	
iv)	Deduction for any other commitment [38 (ii) + (iii)] (Mm <sup>3</sup> )	
v)	Water available at canal head before reservoir lift [39 (iii)+36 (ii) -40 (i) +(ii)+(iii)+(iv)]	
41	<b>Deductions for Reservoir Lift</b>	
	<b>Reservoir Lift</b>	
	<b>Case (A) Where canal takes off directly from the reservoir</b>	
(a)	<b>Flow Lift</b>	
i)	Maximum permissible area at 6 % of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 3.6 % of water available at the canal head (Mm <sup>3</sup> ) i.e. [40 (v)]	
iv)	Actual water allowance for sanctioned area	
	= (ii / i) * 0.036 * water @ canal head [40 (v)] in (Mm <sup>3</sup> )	
(b)	<b>Pressurized Lift (Drip/Sprinkler)</b>	
i)	Maximum permissible area at 14 % of CCA (ha)	
ii)	Actual sanctioned area ( ha)	
iii)	Maximum allowable water allowance at 5.65 % of water available @ the canal head [40 (v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area	
	= (ii / i) * 0.0565 * water at canal head [40 (v)] in (Mm <sup>3</sup> )	
(c)	<b>Canal Lift (Outside command)</b>	
i)	Maximum permissible at 10 % of (CCA -perennial area) (ha)	
ii)	Actual sanctioned area ( ha)	
iii)	Maximum allowable water allowance @ 7 % of water available at canal head [40 (v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area	
	= (ii / i) * 0.07 * water @ canal head [40 (v)] in (Mm <sup>3</sup> )	
42	<b>Case (B) Where Canal takes off from the D/S of pick up weir</b>	
(a)	<b>Lift from dam storage</b>	
i)	Maximum permissible area at 1 % of CCA (ha)	
ii)	Actual sanctioned area ( ha)	
iii)	Maximum allowable water allowance at 0.6 % of water available at the canal head [40 (v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area	
	= (ii / i) * 0.006 * water at canal head in (Mm <sup>3</sup> )	
(b)	<b>Pressurized Lift (Drip/Sprinkler)</b>	
i)	Maximum permissible area at 14 % of CCA (ha)	
ii)	Actual sanctioned area ( ha)	

Sr. No.	Description	Data
iii)	Maximum allowable water allowance at 5.65 % of water available @ the canal head [40 (v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance = (ii / i) * 0.0565 * water @ canal head [40(v)] in (Mm <sup>3</sup> )	
c)	Lift on river portion between Dam to pick up weir	
i)	Maximum permissible area at 5% of CCA (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance at 3% of water available @ the canal head [39(v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance	
	= (ii / i) * 0.03 * water @ canal head [40 (v)] in (Mm <sup>3</sup> )	
(d)	<b>Deduction for transit loss in the river portion in fair weather</b>	
	= 10% of water @canal head	
(e)	<b>Deduction of water quantity for non-irrigation use in between the river portion (between dam to pick up weir)</b>	
(f)	<b>Canal Lift (Outside command)</b>	
i)	Maximum permissible at 10 % of (CCA -perennial area) (ha)	
ii)	Actual sanctioned area (ha)	
iii)	Maximum allowable water allowance @7% of water available at canal head [40 (v)] (Mm <sup>3</sup> )	
iv)	Actual water allowance for sanctioned area	
	= (ii / i) * 0.07 * water @ canal head [40 (v)] in (Mm <sup>3</sup> )	
43	Net water available at canal head (Mm <sup>3</sup> )	
	Case A [40 (v) - 41 a (iv) + b (iv) + c (iv)] .....or	
	Case B [40 (v) - 42 a (iv) + b (iv) + c (iv) + d + e + f (iv)]	
44	Net water available at canal head considering canal losses (Item No.43 * conveyance efficiency #) in (Mm <sup>3</sup> ).	
45	Share of water for Hot Weather irrigation as per Project Report (Mm <sup>3</sup> )	
46	Water available for Rabi flow irrigation (44 - 45)	
47	Net Area i.e. [30 (b)] \$ (ha)	
48	<b>Prescribed unit water use entitlement for Rabi (46/47) (Mm<sup>3</sup>/ha)</b>	
	i.e. cum / ha	
	Delta (cm)	
49	<b>Prescribed unit water use entitlement for HW (45/47) (Mm<sup>3</sup>/ha) ?</b>	
	i.e. cum / ha	
	Delta (cm)	
#	<p>(1) Conveyance efficiency of 0.80 is assumed for minor tanks, 0.80*0.80 (i.e. 0.64) for medium projects and 0.80*0.80*0.80 (i.e. 0.512) for major projects.</p> <p>(2) The efficiency be taken as per Table 4 of this Technical Manual</p> <p>(3) In case actual observed data for conveyance efficiency is available, the observed data be used provided it is <b>duly approved by competent Authority</b>. [WRD in case of Major Projects &amp; from concerned Chief Engineer in respect of other category projects.]</p>	

<b>\$</b>	Net Area is the delineated area of the project (in case the entire CCA is delineated). If the entire CCA is not yet delineated, the CCA be taken as Net area. The Net area is solely flow irrigation area (i.e. exclusive of the lift area).
<b>?</b>	If the water planning of the project, apportions water between Rabi and Hot Weather seasons, then the entitlement for the Hot Weather season is to be computed in proportion to the apportionment.
<b>NB:-</b>	6 (b) Intercepted Catchment Area is that part of the catchment area which drains into upstream storages / weirs of the project under consideration.

**ANNEXURE 3(1) [PARA 6.1]****REGISTER FOR SANCTIONED WATER USE ENTITLEMENT FOR A NORMAL YEAR**

Name of Project :

Tal.:

Dist.:

Name of Irrigation Division :

Irrigation Year: -

**For Irrigation Use**

Sr. No	Name & Address of WUA	Registration No. & Date	Category of WUA flow/lift combined	Minor/ Distributary No.	Total area Delin eate d (ha)	No. of Beneficia rise	No.& Nameof villages benefitted	Normal Sanctioned water use entitlement for Kharif (Tcum)	Normal Sanctioned water use entitlement for Rabi (Tcum)	Normal Sanctioned water use entitlement for Hw (Tcum)	Total entitlement (Tcum)
1	2	3	4	5	6	7	8	9	10	11	12

**\*Note:** Entitlement shown in columns 9 & 10, 11 & 12 shall be for Designed Live Storage in Reservoir full condition.

**Signature of Canal Officer****(Name & Designation)**

**ANNEXURE 3(1) (A) [PARA 4.5 (3)]****REGISTER FOR SANCTIONED WATER USE ENTITLEMENT FOR A NORMAL YEAR OF INDIVIDUAL WATER USERS**

Name of Project :

Tal.:

Dist.:

Name of Irrigation Division :

Irrigation Year: -

**For Irrigation Use**

Sr.No	Name of Individual Farmer	Minor/ Distributary No.	Total area CCA (ha)	Total Nos. of (Individual Farmer)	No. & Name of villages benefitted	Water Use entitlement for Kharif (Tcum)	Water Use Entitlement for Rabi (Tcum)	Water Use Entitlement for HW (Tcum)	Total Water Use	Area Irrigated	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

**Signature of Canal Officer****(Name & Designation)**

**ANNEXURE 3(2) [ PARA 6.1]****REGISTER FOR APPLICABLE WATER ENTITLEMENT**

Name of Project :

Tal.:

Dist.:

Name of Irrigation Division :

Irrigation Year: -

**For Irrigation Use**

Sr. No.	Name & Address of WUA	Registration No. & Date	Category of WUA flow/lift combined	Minor/ Distributary No.	Total area Delimited (ha)	No. of Beneficiaries	No. & Name of villages benefitted	Applicable water entitlement for Kharif (Tcum)	Applicable water entitlement for Rabi (Tcum)	Applicable water entitlement for HW (Tcum)	Applicable total entitlement (Tcum)
1	2	3	4	5	6	7	8	9	10	11	12

Note: Applicable Entitlement shown in column 9, 10, 11 & 12 shall be for the reservoir storage condition as on start of the irrigation season.

**Signature of Canal Officer****(Name & Designation)**

## ANNEXURE 4 [ PARA 8 ]

### GAUGE FIELD BOOK OF WATER USE

Name of Project :

Tal. :

Dist. :

Name of Irrigation Division :

Irrigation Year :

**For Irrigation Use**

**Season : Kharif / Rabi / Hot Weather**

TYPE AND REGISTRATION NO. OF WUA :

Location of Gauge	Rotation Days											Total Qty. of water supplied during rotation in Tcum	Signature of authorized representative of WUA	Signature of Department's authorized representative (with designation)	Remarks
	No. of Rotation	1	2	3	4	5	6	7	8	9	10				
	Rotation Date														
	Gauge reading timing														
	@ 8.00 hours @ 17.00 hours Average Gauge														
	Qty. supplied per day (Tcum)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q			

Tcum = Thousand Cubic meter

Enclosure: - Gauge vs Discharge Table with the type of measuring device

**Note:** (1) When and by whom the calibration is carried out? ..... (2) When and by whom crosschecking of flow measurements is carried out? .....

**Signature of Canal Officer**

**(Name & Designation)**

# ANNEXURE 5 (1) [ PARA 7.3 ]

## SEASON WISE (KHARIF) WATER USE OF WUA FOR THE YEAR (AT HEAD / MIDDLE & TAIL)

Name of Project:

Tal.

Dist. :

Name of Irrigation Division :

(For Kharif)

Season	Applicable water Entitlement (Tcum)	Rotation Details					Remarks of Project Authority or its representative
		Actual dates of rotations		Actual volume supplied rotation wise (Tcum)	Cumulative volume (Tcum)	Date of visit	
1	2	3		4	5	6	7
Tail		No.	Rotation Date				
			From	To			
		1					
		2					
Middle		3					
		1					
		2					
		3					
Head		1					
		2					
		3					

Note: 1) Figure shown in column (3) will depend on actual reservoir storage available for Rabi season Which will be decided by the Project Authority.

**Signature of canal Officer  
(Name & Designation)**



# ANNEXURE 5 (2) [ PARA 7.3 ]

## SEASON WISE (RABI) WATER USE OF WUA FOR THE YEAR (AT HEAD /MIDDLE &TAIL)

Name of Project:

Tal. :

Dist. :

Name of Irrigation Division :

(For Rabi)

Season	Applicable water Entitlement (Tcum)	Rotation Details					Remarks of Project Authority or its representative
		Actual dates of rotations		Actual volume supplied rotation wise (Tcum)	Cumulative volume (Tcum)	Date of visit	
1	2	3		4	5	6	7
Tail		No.	Rotation Date				
			From	To			
		1					
		2					
Middle		3					
		1					
		2					
Head		3					
		1					
		2					

Note: 1) Figure shown in column (3) will depend on actual reservoir storage available for Rabi season

Signature of Canal Officer

Which will be decided by the Project Authority.

(Name & Designation)

**ANNEXURE 5 (3) [ PARA 7.3]**

**SEASON WISE (HOT WEATHER) WATER USE OF WUA FOR THE YEAR  
[(KHARIF / RABI & HOT WEATHER) AT HEAD /MIDDLE &TAIL]**

Name of Project:

Tal. :

Dist.:

Name of Irrigation Division :

**(For Hot Weather)**

Season	Applicable water Entitlement (Tcum)	Rotation Details					Remarks of Project Authority or its representative
		Actual dates of rotations		Actual volume supplied rotation wise (Tcum)	Cumulative volume (Tcum)	Date of visit	
1	2	3		4	5	6	7
Tail		No.	Rotation Date				
			From	To			
		1					
		2					
Middle		3					
		1					
		2					
Head		3					
		1					
		2					
		3					
		1					
		2					

Note: 1) Figure shown in column (3) will depend on actual reservoir storage available for Rabi season Which will be decided by the Project Authority.

**Signature of Canal Officer  
(Name & Designation)**

## ANNEXURE 6(1) [PARA 4.4.4]

### REGISTER FOR ENTITLEMENT AND ITS USE FOR DOMESTIC USE

Name of Project :

Tal.

Dist.:

Name of Irrigation Division :

Name of water use Entity:

Utility located @ \_\_\_\_\_

Entitlement Register No. \_\_\_\_\_

Sr. No.	Name and address of Water Supply Entity with Registration Number & date	Category of Entity**	Population	Total Water Demand & Purpose (Tcum)				Water lifting point***	Sanctioned Water use Entitlement (Tcum)	Actual utilization of the Entitlement	
				Domestic	Commercial	Industrial	Total			Mld	Tcum/Year
1	2	3	4	5(a)	5(b)	5(c)	5(d)	6	7	8(a)	8(b)

\*\* = Category of water use entity Municipal Corporation, Municipal Council, Regional/Rural Water Supply Scheme, Village Water Supply Scheme, City/ Taluka/ Village/ Grampanchayat (Group)  
Tcum = Thousand cubic meter      Mld = Million liters per day

\*\*\* = 1) Directly from WRD storage. 2) From river below storage by lift.  
3) From canal, a) having appropriate storage facility. b) Without storage facility. 4) Storage owned by the user.

**Signature of Canal Officer**

**(Name & Designation)**

**ANNEXURE 6(2) [PARA 4.4.4]**

**REGISTER FOR ENTITLEMENT AND ITS USE FOR INDUSTRIAL USE**

Project: .

Dist :

Tal :

Name of Irrigation Division :

Name of water use Entity:

Entitlement Register No. \_\_\_\_\_

For the Year: \_\_\_\_\_

Sr. No.	Name and address of Industrial Entity with Registration number & date	Category of Entity(+)	Sanctioned water use Entitlement Tcum/ Year		Actual utilization of the Entitlement Tcum/ Year	
			Industrial	Domestic	Industrial	Domestic

Tcum = Thousand Cubic Meter    MLD = Million Liters per day    Enclosure : Monthly Abstract

**Signature of Canal Officer**

**(Name & Designation)**

## ANNEXURE 7 [PARA 7.4]

### ABSTRACT SHOWING PERCENTAGE OF ENTITLEMENT ACTUALLY RECEIVED V/S SANCTIONED TO WUA FOR THE IRRIGATION YEAR \_\_\_\_\_

Name of Project:

Tal :

Dist. :

Name of Irrigation Division :

Sr. No.	WUA in Project	No. of WUAs	Corresponding Delineated Area (ha)	Applicable Water Entitlement (Tcum)			Actual entitlement received (Tcum)			Percentage			Area irrigated during the season (ha)			No. of farmers taken up irrigation during the season			Remarks
1	2	3	3a	4			5			6			7			8			9
				Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather	
	Head reach																		
	Middle reach																		
	Tail reach																		

TCum = Thousand cubic meter

WUA = Water User Association

Signature of Canal Officer  
(Name & Designation)

**ANNEXURE 8 (A) [Para 8]**

**REGISTER OF IRRIGATION WELLS LOCATED WITHIN 35M FROM THE CANAL**

Name of Irrigation Project

Tal :

Dist.:

Name of Irrigation Division :

Area under Crops on Well

Village:

Area		ha		Branch No./Distributary No./Minor No. _____		Year _____									
Sr. No.	Outlet No.	Name of beneficiaries	Survey No.	Gut No.	No. of wells	Cash crop area on well									Remarks
						Sugar cane	Banana	Grape	Pomegranate (Dalimb)	Plum / Berry (Bor)	Others	Total	Cereals	Grand Total	
1	2	3	4	5	6	7(a)	7(b)	7(c)	7(d)	7(e)	7(f)	7(g)	7(h)	7(i)	8

Signature of Canal Officer  
(Name & Designation)

**ANNEXURE 8 (B) [PARA 8]****REGISTER OF WELLS, TO BE USED FOR NON-IRRIGATION PURPOSE WITHIN CANAL COMMAND AREA.****Name of Project****Tal :****Dist. :****Name of Irrigation Division :****Area under Crops on Well****Village:****Area****ha****Branch No./Distributary No./Minor No.\_\_\_\_\_****Year \_\_\_\_\_**

<b>Sr. No.</b>	<b>OutletNo.</b>	<b>Name of beneficiaries</b>	<b>SurveyNo.</b>	<b>Purpose</b>		<b>Total</b>	<b>Remarks</b>
1	2	3	4	5		6	7
				<b>Domestic</b>	<b>Industrial</b>		

**Signature of Canal Officer****(Name & Designation)**

# ANNEXURE 9 [ PARA 13 ]

## VOLUMETRIC SUPPLY TO WATER USERS

### ASSOCIATION BILL OF WATER CHARGES

Irrigation Division: \_\_\_\_\_ Name of Project: :\_\_\_\_\_ Tal. \_\_\_\_\_ Dist. \_\_\_\_\_  
 Irrigation Sub-Division : \_\_\_\_\_ Irrigation Section : \_\_\_\_\_  
 Bill No. : \_\_\_\_\_ Bill Date: \_\_\_\_\_

Water User's Association		Season	Year	Entitlement (Tcum)		Water Rate (Rs./ Tcum)	Water charges (Rs.) 6 * 7	Local Cess (Rs.) 20% of 8	Penalty (**) (If any)	Current Bill (Rs). 8+9+10	Previous dues (Rs.)	Total Bill (Rs.) 11+12
Regis ter No.	Name			Applicable*	Used							
1	2	3	4	5	6	7	8	9	10	11	12	13

NOTE. -

- 1) Season wise Dew dates for payment of bill: (Kharif 1 Feb.), (Rabi 15 May), (Hot Weather 15 Oct.)
- 2) Penalty / year shall be levied for late payment as per the prevailing rate structure.

\*In case of Hot Weather Season, Applicable entitlement shall be inclusive of water allowed to carry over to Hot Weather (conditions apply).

\*\* **Penalty** is imposed on Water User's Association for violation of Maharashtra Management of Farmers Irrigation Systems Act, 2005 and rules thereof as per details specified below.

Sr. No.	Offence / Irregularity	Section of the Act	Rule No.	Penalty Amount (Rs.)
Total				

**Signature of Canal Officer  
(Name & Designation)**



## ANNEXURE 10 [ PARA13 ]

### VOLUMETRIC SUPPLY TO WATER USERS

#### ASSOCIATION RECEIPT OF WATER CHARGES

Irrigation Division: \_\_\_\_\_

Name of Project: : \_\_\_\_\_ Tal : \_\_\_\_\_ Dist. \_\_\_\_\_

Irrigation Sub-Division : \_\_\_\_\_

Irrigation Section : \_\_\_\_\_

Bill No. : \_\_\_\_\_ Payment Date: \_\_\_\_\_ (Intime / Late)

Receipt No.:

Receipt Date: \_\_\_\_\_

Water User's Association		Details of Bill						Details of Amount paid			
Regis ter No.	Name	Water charges (Rs.)	Local Cess	Penalty (Rs.)	Current bill (3+4+5)	Previous dues (Rs.)	Total Bill Amt. (Rs.) (6+7)	Penalty (Rs.)	Grand Total bill (Rs.)	Net Amount Paid (Rs.)	Balance (Rs.)
1	2	3	4	5	6	7	8	10	11	12	13

NOTE. - IF AMOUNT PAID IS LESS THAN THE REVISED BILL AMOUNT, MENTION / HIGHLIGHT ONE OF THE REMARKS GIVEN BELOW:

1) Water User's Association agrees to pay the complete bill in principle but paid in part because of certain difficulties mentioned in its application.

2) Water User's Association does not agree to pay Rs. \_\_\_\_\_ towards \_\_\_\_\_ for reason 1 -----, 2---  
-----,  
-----, 3 ----- (also vide application)

**Signature of Canal Officer  
(Name & Designation)**

**FLOW MEASUREMENT AND ITS RECORD**

**(A) FLOW MEASUREMENT AND ITS RECORD**

(i) Copy of the record drawing and discharge table of measuring devices shall officially be given to Water User's Association and kept with Sectional Officer, Canal Inspector, Gauge Karkoon of the Water Resources Department.

(ii) All the dimensions as well as control levels of measuring device as per design be checked before handing over the same to Water User's Association. If there are any deviations or errors, the same should be rectified.

(iii) Ensure that the device is hydraulically functioning properly (e.g. absence of formation of hydraulic jump, existence of free flow condition, etc.)

(iv) Ensure that gauge is accurate and readable.

(v) If measuring device consists of some moving components, they shall be maintained periodically (e.g. oiling, greasing, filling of ink, replacement of data sheets or pens, etc.)

(vi) In case of manual discharge measurements, the gauge and discharge measurements shall be taken at least twice a day (preferably at 12 hours interval) in the presence of the representatives of the Water Resources Department and Water User's Association and signed in conformity. The measurements may be recorded in the format as given in Annexure - 4

(vii) In case of automatic measuring device, the result sheets shall be signed by both the agencies. As far as flow meters in pressure pipelines are concerned, the measurements may be taken once a day and signed by both the agencies.

**(B) PERIODIC EVALUATION OF MEASURING DEVICES**

**(1) Evaluation of measuring devices in open channel**

The evaluation of measuring devices in open channel shall be carried out at least once a year by the Canal Officer or his nominee. Following general procedure may be followed (The specific items to be included in evaluation will depend upon the

type of measuring device):-

- (i) Obtain design drawing and discharge table.
- (ii) Before releasing water, take actual dimensions of all components and control levels (e.g. u/s Canal Bed Level, d/s Canal Bed Level, hump level /sill level, zero gauge level etc.
- (iii) Note down condition of gauge chamber (e.g. extent of silting, readability and accuracy of gauge plate, functioning of connecting pipes etc.).
- (iv) After releasing water observe the hydraulic performance (e.g. formation of hydraulic jump, free flow condition, etc.).
- (v) Compare actual dimensions, levels and hydraulic performance with the designed one and if there are any variations or deviation, the same shall be rectified.
- (vi) Ensure that discharge table is based on actual dimensions or levels or appropriate discharge coefficients.
- (vii) In case of measuring devices provided with automatic recorders, the measurements should be verified with manual measurements (e.g. volume recorded by automatic recorder in a given period be verified by manual measurements). These automatic devices be calibrated periodically from the authorized agencies.
- (viii) After evaluation if any deviations or errors are detected, the reasons for the same should be identified and remedial measures be suggested to bring back the device in proper working condition. This should be brought to the notice of the concerned Water User's Association. Thereafter the concerned Water User's Association shall get the same repaired and set right at its own cost within a period of 30 days.

## **(2) EVALUATION OF WATER METERS IN PRESSURE PIPELINES**

As per section 47 of the Act, the responsibility of providing, installing and calibration of water meters for flow measurement in every water lifting device lies with the Lift Irrigation Water User's Association. The water meters shall have to

be as per Bureau of Indian Standards (BIS). The Canal Officer, duly empowered in this behalf, has the powers to inspect and test the water meters. The measurements shall be verified based on discharging capacity of the pump considering suction head, delivery head, head loss in pipe line, horse power of the pump etc. and running period. This shall be done at least twice a year. If the meter is found to be defective, the concerned Water User's Association shall get the same repaired and set right at its own cost within a period of 30 days.

**(C) ASCERTAINING VOLUME OF WATER DURING THE PERIOD OF NON-FUNCTIONING OF MEASURING DEVICE:-**

Following procedure may be followed to ascertain the volume of water during the period of non-functioning of a measuring device.

**(1) OPEN CHANNELS**

The head regulator through which water supply is regulated in open channel, if falls, pipe crossings are available at convenient location may be calibrated to estimate the discharge. The arrangements for measuring actual water levels at these structures will have to be provided. The measurements and discharge be recorded as usual i.e. twice a day and signed by both the agencies.

The period of non-functioning of measuring device shall not be more than 30 days i.e. it shall be repaired and brought into use within 30 days by the concerned Water User's Association. If the device remains out of order for a period exceeding 30 days, the quantity of water measured using other structures as mentioned earlier shall be increased by 25% for billing purposes.

**(2) LIFT IRRIGATION SCHEMES**

The discharging capacity of the pump considering minimum suction head, actual delivery head, head losses in the pipeline, horsepower of the pump shall be computed. The volume of water pumped may be estimated considering this discharging capacity and average running period per day. This volume may be increased by 25% as a penalty for not keeping the meter in working condition, if the measuring device is not repaired and brought into use within a period of 30 days.

### **(3) Data Record keeping**

Accurate record – keeping and computerization of measurement data are very crucial for ensuring the reliability and precision of the devices. Maintaining the detailed record of measurement, calibration and maintenance of measuring device will help the organization in tracking the performance, identify the trends and also in data driven decisions. Computerization of these record not only provide facilities to store, retrieve and analyses the data but also help in decision making in future planning and activities of the department.

## ANNEXURE 12 [ PARA 9 ]

### FORMAT FOR RECORDING MINUTES OF PRE-SEASON MEETING

Date of Meeting: \_\_\_\_\_ Place: \_\_\_\_\_

Sr. No	Particulars			
1	Name of Project			
2	Name of Division			
3	Name of Executive Engineer			
4	Season / Irrigation year	Kharif / Rabi /HW of Irrigation year 20.. – 20..		
5	Details of Officers Attending the Meeting : Name & Designation -			
6	Name of PLA / DLA / CLA, WUAs with Registration No. and Office bearers concern with & invited for the meeting & their attendance	Name & Registration of WUA	Name & Designation of Representative	Contact Details / Mobile No.
7	Actual water demand by, PLA / DLA / CLA, WUAs in (Tcum)	WUA	Area under WUA	Water Demand (Tcum)
		<b>Total</b>		
8	Applicable Entitlement as per storage available as on 15 Oct. 20..... (Tcum )			
9	Probable Rotation Period & Rotation wise probable quantity as decided in meeting	Rotation dates		Probable quantum (Tcum)
		from	to	
	Rotation no. 1			
	Rotation no. 2			
	Rotation no.3			
	Rotation no.4			
	<b>Total</b>			
10	General Remarks of Officer Conducting Meeting			

Copy submitted to the concerned Head of

Department:

Copy to concerned PLA / DLA / CLA, WUAs:

Copy to concerned field

officer:

## **ANNEXURE 13 [ PARA 14]**

### **FEEDBACK FROM ANNUAL REGIONAL ENTITLEMENT WORKSHOPS**

The Authority, jointly with the WALMI, Aurangabad organizes Entitlement workshops annually in the six revenue divisions before the commencement of Rabi season. These workshops provide a platform for interaction among the WRD field officers and staff, WUA management staff and regulators. Success stories of WUAs who have implemented the Entitlement Programme effectively are presented in the workshop, which inspires other WUAs to improve their performance. Initially, from 2007-08 to 2009-10, annually only one workshop was organized, followed by 3 workshops in 2010-11, and 6 workshops commencing from 2011-12 onwards are being organized. The participation grew from 74 to about 950 persons in these workshops. One special workshop for Regulators was also organized at WALMI, Aurangabad in March 2010. The regulators are appointed by the MWRRRA to enforce and ensure the deliverance of entitlement to WUAs. In all, 61 regulators participated in the workshop. Difficulties encountered by WUAs in irrigation management, the field staff of WRD in its implementation and by the Regulators in monitoring the entitlement programme were discussed freely during these workshops. The major issues and suggestions put forth by the participants during the deliberations were as follows:

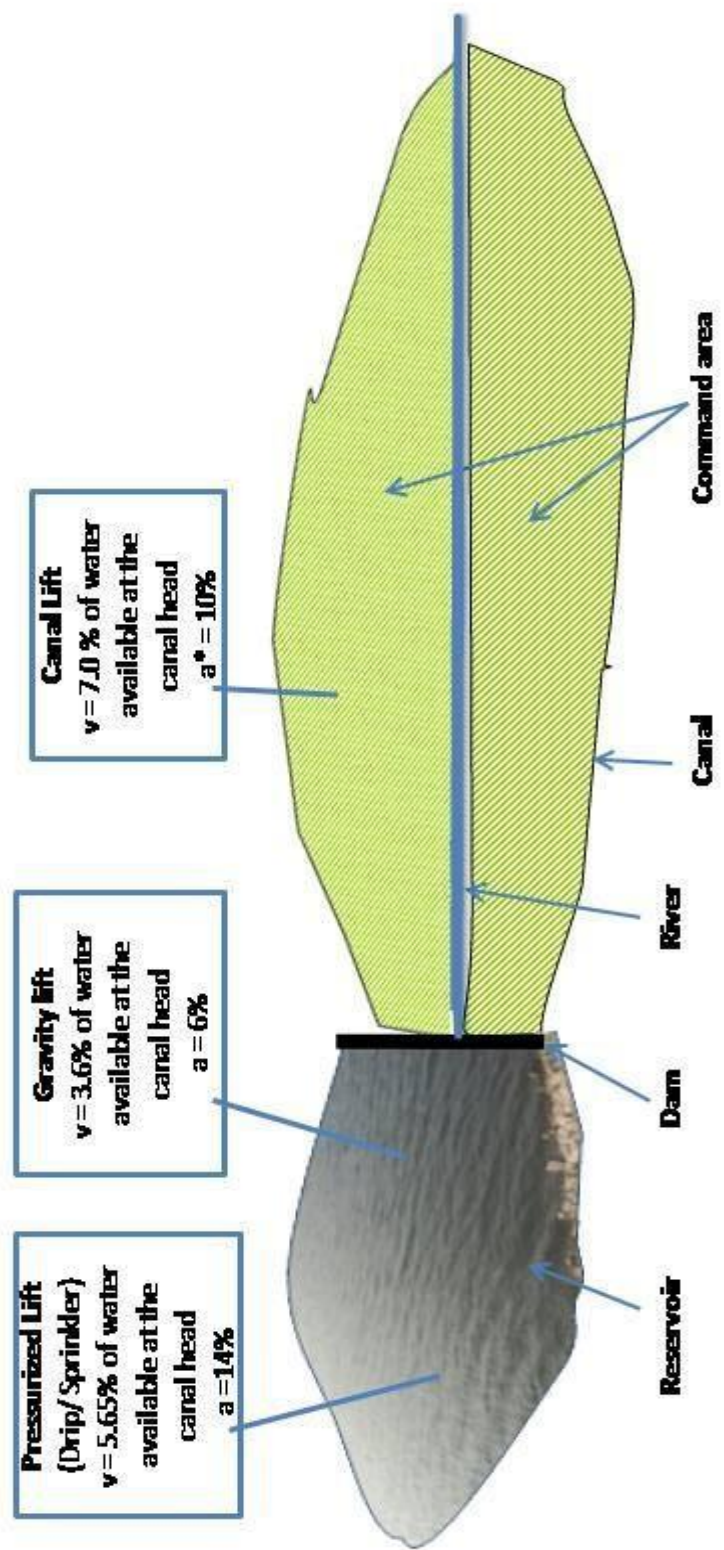
- The portion from the water charges recovered from the farmers and paid to the Government by the WUAs and returnable to them are not received in time. It should be paid in one installment before the Rabi season.
- The programme of irrigation rotation is prepared without taking the WUAs into confidence, which discourages their effective participation.
- The Govt. needs to subsidize the small farmers who construct farm ponds even in the initial reaches of command.
- Appropriate honorarium to the Chairman and other Office Bearers of WUAs should be given by the Government. Required provision in the grant to be given to WUAs may be made accordingly.
- The M&R grants due to WUAs as per WRD GR dated 22/6/2007 are inadequate. The GR needs to be revised immediately as per MWRRAs proposal.
- Due to inadequate manpower with WUAs, the recovery of arrears of water charges is low.

- The regulators are not receiving the reimbursement of incidental expenses / T.A. bills etc.
- The Section Offices of irrigation on the field are understaffed. The beat staff and their leader are absent in the Section Offices. There are difficulties in distribution of water, conducting *panchanamas*, recovery of water charges etc.
- Prior to handing over the area to WUAs, ensure that release of water in canal system reaches the tail end.
- The measuring devices installed should be in good condition. The gauge should be precisely calibrated & maintained.
- The representatives of WUAs should be invited to the meetings of canal advisory committees. The tail end WUAs should receive their rightful share of water.
  - Government should make efforts to constitute federation of WUAs.
  - The fishery rights of the tank water should be entrusted to WUAs.
  - It is necessary to impart training to the Secretaries of WUAs.
- The incomplete works of repairs of the irrigation system in the delineated area of WUAs and those formed under the Cooperative Act should be carried out by the WRD on top priority.
- Grants be made available through the Agriculture Department for implementing drip irrigation system for expansion of irrigated area.
- There should be coordination between WUAs and management staff of WRD. MWRRRA tries to address the above issues by holding meetings with the concerned field officers of WRD to find feasible solution. If the problem pertains to policy issues, the MWRRRA formulates comprehensive proposals for consideration of the WRD. The Authority also follows up with other Departments such as Finance, Agriculture, etc. to act on the proposal. As per the directives in the Govt. circular (WRD, 24/7/2013) for the M&R of the irrigation system, the works of repairs to old canals / distributaries, canal cleaning, desilting can be carried out under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The implementation of this provision may be effected by all the Irrigation Circles so that additional area can be brought under irrigation, especially of the tail reaches.



Maximum permissible lift Irrigation on Reservoir, Canal and River (Canals from Reservoir) [ Para 4.3 ]

ANNEXURE 14A



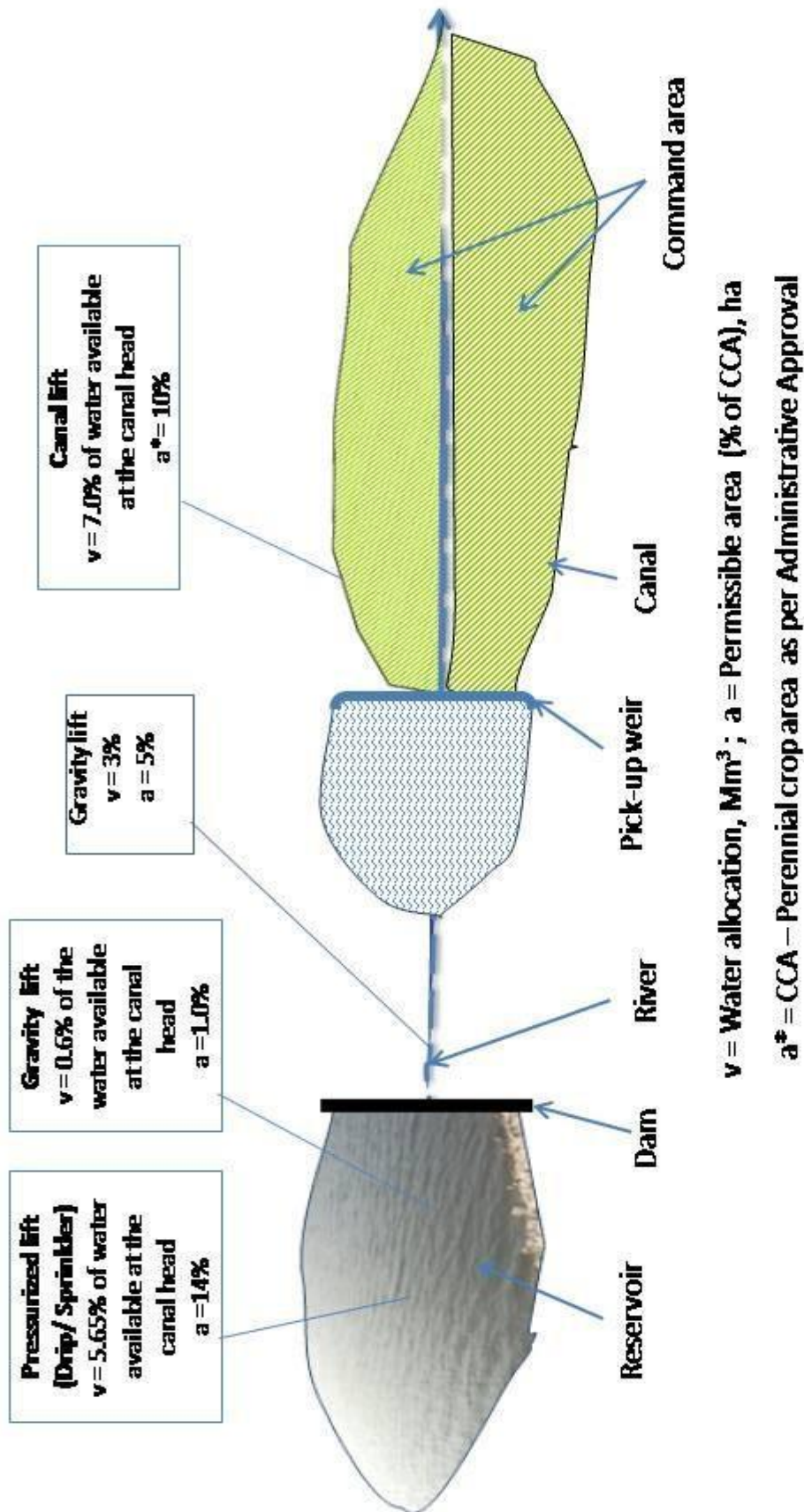
$v$  = Water allocation,  $Mm^3$ ;  $a$  = Permissible area (% of CCA), ha

$a^*$  = CCA – Perennial crop area as per Administrative Approval

**CASE A:** A Schematic of a reservoir and a canal system showing water allocation ( $v$ ) and permissible area ( $a$ ) for gravity lift, pressurized lift, and canal lift

As per the guidelines for sanctioning lift irrigation; G.R. (Irrigation Dept.); No. MISC 10.1/(378/2001)/IM(P), dated 21/11/2002

ANNEXURE 14B



**CASE B:** A schematic of a reservoir , pick-up weir and canal system showing water allocation ( $v$ ) and permissible area ( $a$ ) for gravity lift and pressurized lift schemes

**Monitoring of Bulk Water Entitlement – Delegation of Powers to Directorate of Irrigation Research & Development (DIRD) Pune dt.06/06/2024.**



**महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण**  
(महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण अधिनियम, 2005 चे कलम 3 अन्वये स्थापित वैधानिक प्राधिकरण)  
**Maharashtra Water Resources Regulatory Authority**  
(A Statutory Authority Established u/s 3 of Maharashtra Water Resources Regulatory Authority Act, 2005)



No. MWRRRA/CR 48/2019/Entitlement/344

Date :06/06/2024.

To,  
The Superintending Engineer & Director,  
Directorate of Irrigation Research & Development,  
Moledina Road, Camp,  
Pune – 411 001.

**Sub : Monitoring Bulk Water Entitlement – Delegation of Powers.**

Water Entitlements are being issued by River Basin Agencies (RBA's) as per Section 11(g) of MWRRRA Act, 2005 according to Technical Manual (2007) modified in 2015 and as amended from time to time.


As per Section 11(k) – “Bulk Water Entitlements shall be registered by the River Basin Agency and shall be monitored by the Authority or its duly delegated competent representative”;

Directorate of Irrigation Research and Development (DIRD), Pune is already collecting the relevant data of Water Users Associations in the State. The issue of entrusting monitoring work of Entitlements and Development of entitlement data base as per sec. 11(k) & sec. 11(s) respectively was under consideration of the Authority and it was primarily discussed during the visit of Authority at DIRD, Pune dated 28<sup>th</sup> Feb, 2023. Various issues of WUA formation, delineation of Areas and Entitlements as per Technical Manual, 2015 were also discussed in the meeting at DIRD, Pune.

**"Order"**

The powers are delegated to the Directorate to collect the information of Entitlements issued for the use of water within the State, any transfers of Entitlements and the record of deliveries and uses made as a result of those Entitlements; to develop the State Water Entitlement data base that shall clearly record all entitlements issued, and submit the quarterly progress report commencing from Rabi 2024 season to the Authority in the formats prescribed in Technical Manual for Entitlements (2015). Necessary guidelines for monitoring along with formats is enclosed herewith.

Encl : Guidelines with prescribed formats.

  
(Narendra Tayade)  
Secretary, MWRRRA

**Copy to : (With Encl)**

- 1) The Additional Chief Secretary, WRD, Mantralaya, Mumbai for information please  
[Attention : Smt. Namita Baser, D.S. (सि.व्य-धोरण)]
- 2) The Secretary (CAD), Water Resources Department, Mantralaya, Mumbai  
for information please.
- 3) Executive Director, Maharashtra Krishna Valley Development Corporation, Sinchan Bhavan, Barne Road, Pune, Maharashtra – 411011. For information and Necessary Action.
- 4) Executive Director, Vidharbha Irrigation Development Corporation, Sinchan Sewa Bhavan, near Old Secretary Building, Civil Lines, Nagpur, Maharashtra - 440 001. For information and Necessary Action.
- 5) Executive Director, Godavari Marathwada Irrigation Development Corporation, All India Radio Staff Quarters, Vishnu Nagar, Sindhi Colony, Aurangabad, Maharashtra - 431 001. For information and Necessary Action.
- 6) Executive Director, Tapi Irrigation Development Corporation, Sinchan Bhavan, Akashwani chauk, Prabhat Colony, Jalgaon, Maharashtra - 425 001. For information and Necessary Action.
- 7) Executive Director, Kokan Irrigation Development Corporation, 2nd Floor, Sinchan Bhavan, Kopri Colony, Thane (E) - 400 603 For information and Necessary Action.

With request to provide necessary information to Directorate (DIRD), Pune  
for future action please

### **Guidelines for Monitoring Of Entitlements at State Level/ Project Level**

'Monitoring' means to check, record or test the activity regularly for a period of time. It means paying close attention. It is a type of systematic observation. Monitoring involves evaluating the projects progress against its overarching goals, specific objectives and key performance.

MWRRA's Criteria of 22/09/2017 in its para no.10, has specifically issued instructions to RBA's to submit within one month after expiry of each water year (1st July to 30th June) in prescribed format. It is also mandated to RBA's to keep such information in public domain by displaying on its official website.

Entitlements are to be issued by River Basin Agencies (RBA) which are presently Irrigation Development Corporations (IDCs) as per definition in the Act. These Entitlements are for all categories i.e. domestic, industrial & irrigation agriculture. Hence, monitoring of Entitlements shall not be restricted only for Agriculture.

Criteria for distribution of Entitlements for domestic & industrial water users has been revised by the Authority and issued vide order dated 22Sept 2017

### **Legal Provisions about Entitlement:**

The term 'Entitlement' is defined in both MWRRA & MMISF Acts. While it is meant as 'any authorization by RBA to use the water for the purposes of 'MWRRA Act' (Sec. 2(1) (i)) i.e. Domestic/Industrial/ Agriculture/Commercial etc. it slightly differ in definition of MMISF Act (Sec 2 (1) (m). It is 'Bulk Water Use Entitlement BWUE or Individual Entitlement as determined by Appropriate Authority'. The term 'BWUE' is used here because the act is related to WUA's to whom Bulk Water is to be supplied at minor head or canal head. However, since large quantity of water is still used in about 90% area of Irrigation Potential created, by individual supply and most of industrial supply to small units as well as domestic for Grampanchayats is of very small quantity, there is provision of Individual Entitlement in definition.

In this regard, two more definition must be taken into consideration that is 'Sanctioned WUE', in relation to an Agreement with WUA. Sec. 21 of the MMISF act mandates WUA to enter into an agreement for supply of water in the form, specified as per Sec. 29 of the same act. Agreement is to be entered between minor level WUA and upper level WUA. (i.e. DLA/CLA/PLA) or canal officer for volumetric supply and handing over the physical system as per definition u/s 2(1) (b). WRD has finalized format of agreement between WUA and canal officer

by format of agreement between WUA and higher level WUA is yet to be finalized. In addition, the 'Sanctioned WUE' as per Sec. 2(1) (ag) is defined as total volume of water guaranteed to be supplied to WUA at the agreed point of supply in different seasons in a 'Normal Year'. The yearly sanctioned WUE for a WUA in Normal year can be worked out with multiplying prescribed Unit WUE by the delineated CCA of WUA. This can be used into different seasons as per water requirement of WUA.

It may be observed that MWRRA Act talks about only Entitlement while MMISF act classifies it in above 3 different types.

For simplified view, these different WUEs can be given as under –

1. Prescribed unit WUE use  
(Cum/ha/season or year/WUA)  $= \left[ \frac{\text{Total Designed Storage} - \text{Losses} - \text{N.I.}}{\text{Total delineated area (CCA)}} \right]$   
... For a Normal Year
2. Sanctioned WUE  
(Cum/Season or year/WUA)  $= \text{Total Volume guaranteed in different seasons in a Normal Year}$   
 $= \left[ \text{Prescribed Unit WUE} \times \text{CCA of WUA} \right]$   
... For a season or Normal Year
3. Applicable WUE  
(Cum/WUA/Year)  $= \left[ \text{Total Water Quota -guaranteed to WUA At agreed point of supply in any year} \right]$   
 $= (\text{Live storage} - \text{Losses} - \text{NI use})$   
On 15<sup>th</sup> October  
At agreed point of supply in any year.

All these Entitlements including Individual Entitlements, are to be issued by RBA as per Section 11(g)(i) of MWRRA Act. The term RBA is defined in Sec. 2 (i) (u) of MWRRA Act as relevant or any one of 5 IDCs viz. MKVDC, VIDC, KIDC, TIDC, & GMIDC - However, looking to necessity of a Multidisciplinary Organization for shifting from 'Construction Oriented' to 'Management Oriented' Organization to achieve Integrated Water Resource Management (IWRM), some sort of reform in IDCs is necessary. The Authority (MWRRA) may suggest Govt. (WRD) in this regard, to carve out management organization of IDCs, and empower them to act as RBA.

Following provisions in the Act relevant to monitory of Entitlements need to be taken into consideration.

Section.II “(0) of MWRRA (Amendment & Continuance) Act, 2011 gives specific objective of monitoring of Entitlements. The provision is as under.”



II "(o) to establish a system of enforcement of the Entitlements issued by the concerned River Basin Agency to various Categories of Use and its Regulation, through measurement and monitoring, with a view to ensure that the actual use of water, both in quantity and type of use, are in compliance with the Entitlements issued,"

II "(g) to lay down the criteria and monitor the issuance of Entitlements. These criteria among others shall also include the following."

II "(h) to lay down the criteria for modification in Entitlements for the diversion storage and use of the surface and subsurface waters of the State. These criteria shall among others, include the following."

II "(k) Bulk Water Entitlements shall be registered by the River Basin Agency and shall be monitored by the Authority or its duly delegated competent representative;"

II "(m) in the event of water scarcity, the Authority, in compliance with its policy and rules for allocating such scarcity, shall adjust the quantities of water to be made available to all Entitlement and shall permit the temporary transfer of Water Entitlements between users the Categories of Users in accordance with the approval of the River Basin Agencies;"

II "(s) to develop the State Water Entitlement data base that shall clearly record all Entitlements issued for the use of water within the State, any transfers of Entitlements and a record of deliveries and uses made as a result of those Entitlements;"

Thus, the objective of Measurement and Monitoring laid down in the Section II(o) of amended MWRRA Act, 2011 is

- (i) To establish a system of enforcement of the Entitlement issued by the concerned RBA to various categories of use;
- (ii) Regulation of Entitlement issuance and;
- (iii) To ensure that actual use of water both in quantity & type of use RBAs shall monitor the Entitlements to Various categories of use according to provision in 1) Technical manual for Detering, Regulating and Entering water Entitlements in Irrigation projects of Maharashtra of May2015, and 2) Criteria for Distribution of Entitlement for Domestic & Industrial water use Date 22/09/2017. The first one is basically for irrigation specifically for Water User Association in such area where compliance of all provisions in MMISF Act 2005 are made. The second is for non-irrigation Entitlements (Water rights or sanctions).

### **Delivery, Enforcement and Monitoring of the Entitlements**

- Irrigation management shall be carried out by PLA / CLA/ DLA / WUA as the case may be. Necessary coordination between project officers and WUAs be established and requisite discharge through the canal system be maintained during each rotation period. Irrigation shall be carried out from tail-to-head. In case of any lapses, the regulator concerned and the field officer shall find an appropriate solution to resolve the situation. The planned dates of rotation for release of water be informed to concerned WUAs. The volume of water to be released and rotation schedule shall be planned in consultation with the WUAs during the pre-season meetings.
- Necessary planning for achieving requisite discharges at various off-take points to achieve adequate quantum of water for every CLA / DLA / WUA be carried out jointly by PLA/ CLA / DLA / WUA and concerned field officer.
- Shortfall in supply of due entitlement in a particular rotation be made good in the subsequent rotations. However, this will not apply if WUA voluntarily requests for further additional cut in supplies due to rainfall etc.

### **Monitoring expected by Directorate, Irrigation Research and Development (DIRD) Pune :-**

1. Co-ordination between Rives Basin Agency (RBA) and DIRD, Pune is necessary as per pre-season meeting.
2. Information about entitlements/ season & for the year as well as actual rotations given with dates need to be informed to DIRD by RBA
3. RBA to provide project wise information of all WUAs in from 3(1) Sectioned WUE & 3(2) Applicable WUE
4. RBA to provide actual water supply with rotations in form 4 & 5 from gauge book
5. RBA to provide information about water use in Head/Middle/Tail reach of canal to DIRD

Respective formats for the monitoring by DIRD are enclosed herewith.



#### Registers to be maintained

Authority has evolved various proformas for monitoring the delivery of entitlements to WUAs. Some registers as per below are required to be maintained by WUA and Field officer of RBA:

Title	Annexure No.	To be maintained by
Sanctioned Water Use Entitlement	3 (1)	both WUA and RBA
Applicable Water Use Entitlement	3 (1)	both WUA and RBA
Field Book of Gauge Readings	4	both WUA and RBA
Kharif Water Use by WUA	5 (1)	both WUA and RBA
Rabi Water Use by WUA	5 (2)	both WUA and RBA
Hot Weather Water Use by WUA	5 (3)	both WUA and RBA
Water Use for Domestic Purpose.	6(1)	both PLA and RBA
Water Use for Industrial Purpose	6(2)	both PLA and RBA
Entitlement Actually Received and Sanctioned to WUAs	7	RBA
Register of Wells	8	RBA
Bill of Water Charges	9	RBA
Recovery of Water Charges.	10	RBA

- The projectwise proforma (except Gauge Field Book) will be got computerized by the RBA officer maintained and preserved in the concerned division / circle office. Copies of annexure may be furnished as per requirement.
- In addition, WUA & concerned RBA sub-division office / division office & circle office shall compile and furnish details to Authority as per proforma prescribed and also maintain such detailed information in connection with rotations for a particular irrigation year.
- The project authority shall maintain a register of wells in the command area, beneficiary-wise (Annexure 9).

**महाराष्ट्र जलसंपत्ती नियमन प्राधिकरणास पाणी हक्कदारीचे सनियंत्रणासाठी  
आवश्यक माहीती.**

०१	मुख्य अभियंता कार्यालयाचे नांव	
०२	मंडळ कार्यालयाचे नांव	
०३	विभागाचे नांव	
०४	प्रकल्पाचे नांव (मोठा/मध्यम/लघु)	
०५	प्रकल्पाचा प्रकार (पूर्ण/बांधकामाधीन)	
०६	पाणी वापर संस्थेचे नांव	
०७	कार्यान्वित/अकार्यान्वित (पा वा सं)	
०८	पाणी वापर संस्थेचा तपशिल (कालवा/वितरिका/इ.साखळी क्रमांकासहित)	
०९	पाणी वापर संस्थेचे क्षेत्र (हे)	
१०	अनुज्ञेय पाणी वापर (दलघमी) (पाणी हक्कदारी)	
११	प्रत्यक्ष पाणी वापर (Applicable Entitlement)	
i)	खरीप	
ii)	रब्बी	
iii)	उन्हाळी	
	एकुण	
१२	त्या- त्या वर्षाचे प्रत्यक्ष सिंचन क्षेत्र (हे)	
१३	घरघुती पाणी वापर - (एकुण वार्षिक)	
i)	एकुण पाणी वापर कर्त्या संस्था	
ii)	मंजूर पाणी कोटा	
iii)	प्रत्यक्ष पाणी वापर	
१४.	औद्योगिक पाणीवापर - (एकुण वार्षिक)	
i)	एकुण इंडस्ट्रीज	
ii)	मंजूर पाणी कोटा	
iii)	प्रत्यक्षात पाणी वापर	
१५	लाभक्षेत्रातील विहीरींची माहीती (पा वा सं) निहाय	
अ)	एकुण विहिरींची संख्या	
ब)	घेतलेली पिके	

i)	ऊस	
ii)	फळबाग	
iii)	इतर	
	एकुण	
१६	पाणी मागणी अर्ज (नमुना - ७) नुसार देण्यात आलेली हक्कदारी	
१७	नमुना - ७ नुसार प्रत्यक्ष पाणी वापर	
१८	पा वा सं/नमुना - ७ व्यतीरीक्त हक्कदारी न देताचा पाणी वापर	
i)	एकुण लाभधारक	
ii)	एकुण पा वा सं	
	एकुण पाणी वापर	

### ANNEXURE 3

#### Register for Applicable Water Entitlement

Ref. — Act Clause 11 (g)

[For Irrigation Use]

Name of Division:

Name of Project:

District: \_\_\_\_\_

Irrigation Division \_\_\_\_\_

Irrigation Year: -

Sr. No.	Name & Address of WUA	Registration No. & Date	Category of WUA flow/lift combined	Minor/ Distributary No.	Total area CCA (ha)	No. of Beneficiaries	No. & Name of villages benefitted	Applicable water entitlement for Kharif (Tcum)	Applicable water entitlement for Rabi (Tcum)	Applicable water entitlement for HW (Tcum)	Applicable total entitlement (Tcum)
1	2	3	4	5	6	7	8	9	10	11	12

Note: Applicable Entitlement shown in column 9, 10, 11, & 12 shall be before the reservoir storage condition as on start of the irrigation season

# ANNEXURE 4

Season wise Water Use by WUA for the Year \_\_\_\_\_  
 Reach Head / Middle / Tail

Taluka: \_\_\_\_\_  
 District: \_\_\_\_\_

Name of Division:  
 Name of Project:

Sr. No.	Season	Applicable water Entitlement (Tcum)	Actual volume supplied season wise (Tcum)	Reaches			Remarks
				Head	Middle	Tail	
1	2	3	4		5		6
	KHARIF						
	RABI						
	HOT Weather						

Note: Figure shown in column (3) will depend on actual reservoir storage available for kharif, Rabbi & Hot Weather seasons which will be decided by the Project Authority, Tcum = Thousand cubic meter

# ANNEXURE 5

## Register for Entitlement and its Use

Ref. — Act Clause 11 (g)

[For Domestic & Industrial use]

Name of Division:

Name of Project:

[For Domestic use]

For the Year: \_\_\_\_\_

Utility located @ \_\_\_\_\_ Tal. \_\_\_\_\_ Dist. \_\_\_\_\_

Entitlement Register No. \_\_\_\_\_

Sr.No.	Name of Water Use Entity	Sanctioned Water use Entitlement	Actual utilization of the Entitlement	Remarks
1	2	3	4	5

[For Industrial use]

For the Year: \_\_\_\_\_

Industry located @ \_\_\_\_\_ Tal. \_\_\_\_\_ Dist. \_\_\_\_\_

Sr.No.	Name of Industrial Entity	Sanctioned Water use Entitlement	Actual utilization of the Entitlement	Remarks
1	2	3	4	5

## ANNEXURE 6

Abstract Showing Percentage of Entitlement Actually Received  
vs. Sanctioned to WUA for the Irrigation Year \_\_\_\_\_

Name of Division: \_\_\_\_\_

Taluka: \_\_\_\_\_

Name of Project: \_\_\_\_\_

District : \_\_\_\_\_

Sr. No.	WUA in _____	No. of WUAs	Corresponding Delineated Area (ha)	Applicable Water Entitlement (Tcum)			Actual entitlement received (Tcum)			Percentage			Area irrigated during the season (ha)			No. of farmers taken up irrigation during the season			Remarks
				3a	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	2	3	3a		Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather			Kharif	Rabi	Hot Weather	Kharif	Rabi	Hot Weather	
	Head reach																		
	Middle reach																		
	Tail reach																		

## ANNEXURE 7

### Register of Wells

Name of Project \_\_\_\_\_ Tal \_\_\_\_\_ Dist \_\_\_\_\_ Branch No./Distributary No./Minor No. \_\_\_\_\_

Area of crops on well / Branchwise / Village wise \_\_\_\_\_ Village: \_\_\_\_\_ Taluka: \_\_\_\_\_

Area \_\_\_\_\_ ha Year \_\_\_\_\_

Sr. No.	Outlet No.	Name of beneficiaries	SurveyNo.	Gut No.	No. of wells	Crops area on well irrigation				Total	Remarks
						Sugarcane	Horti - culture	Other			
1	2	3	4	5	6	7	8	9	10	11	



# ANNEXURE A

Information of Entitlements issued in 2022-23 (Agriculture Use)					
Name of the IDC					
Sr.No	Type of the Project	Total Area delineated u/s 5 of MMISF Act,2005	Total No of WUA's registered as per Section 8 of MMISF Act,2005	No of WUA's under Entitlements as per Section 11(k) of MWRRA Act,2005	Total quantity of Entitlements (in '000 cum )
I	Major				
	1				
	2				
	3				
	.....				
	Sub total				
II	Medium				
	1				
	2				
	3				
	.....				
	Sub total				
III	Minor (Total)				
	Grand Total (I,II and III)				

# ANNEXURE B

Details of WUA's & Entitlement given for Projects notified under the MMISF Act, 2005					
Name of the IDC					
Sr. No	Type of Projects (Major, Medium & Minor)	No of WUA's formed	Delineated Areas (in ha)	Entitlement given (in '000 cum)	Total estimated cost of repair
1	2	3	4	5	6
	1.				
	2.				
	3.				
	Grand Total				

**Annexure – 16**

**Establishing System for Enforcement of Entitlements through Measurement  
and Monitoring – with the help of Chief Auditor, Water & Irrigation, Ch.  
Sambhaji Nagar.**



**महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण**

(महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण अधिनियम, २००५ चे कलम ३ अन्वये स्थापित वैधानिक प्राधिकरण)

**Maharashtra Water Resources Regulatory Authority**

(A Statutory Authority Established u/s 3 of Maharashtra Water Resources Regulatory Authority Act, 2005)

No. MWRRRA/Enforcement of Entitlement/229

Date: 30.04.2025.

To,  
The Chief Auditor (Water & Irrigation),  
WALMI, Kanchanwadi, Paithan Road,  
Ch. Sambhajinagar (Aurangabad),  
Pin Code – 431 005.

**Sub : Establishing the System For Enforcement of Entitlements through  
Measurement and Monitoring –**

Water Entitlements are to be issued by River Basin Agencies (RBA's) as per Section 11(g) of MWRRRA Act, 2005 according to the revised Technical Manual (2025) for irrigation; and for non-irrigation, as per "Criteria for Distribution of Surface Water Entitlements by River Basin Agency for Domestic & Industrial users," Sept. 2017.

As per section 11(o) of the MWRRRA Act, 2005; (as amended in 2011) Authority is empowered to establish a system of Enforcement of the Entitlements:

*"to establish a system of enforcement of the Entitlements issued by the concerned River Basin Agency to various Categories of Use and its regulation, through measurement and monitoring with a view to ensure that the actual use of water, both in quantity and type of use, are in compliance with the Entitlements issued".*

Chief Auditor (Water and Irrigation) Maharashtra State, Ch. Sambhajinagar is already conducting the water audit of irrigation projects and also examines the water uses of different Non Irrigation Bulk Water User like Industries, Municipal Corporations etc. The issue of, "Establishing System of Enforcement of Entitlements through Measurement and Monitoring" as per section 11(o) [as amended in 2011]

was under consideration of the Authority and it was discussed in details during the Authority visit to the office of Chief Auditor, Aurangabad dated 08.02.2023.

As per the powers given to the Authority under section 11 (o) of MWRRA Act, 2005 (as amended time to time) the work of enforcement of entitlement, hereby is entrusted to the Chief Auditor as per the Authority order as enclosed. Procedure for Regulation and Enforcement of Entitlements is also attached with Order, as Annexure – A

The “Monitoring of Entitlements” as per section 11(k) of MWRRA Act, 2005 has already been entrusted to, The Directorate of Irrigation Research and Development (DIRD), Pune vide this office order dated 06.06.2024. However, the Chief Auditor has every right to obtain any data pertains to Enforcement of Entitlement especially for selection of region wise projects/WUA from the DIRD, Pune for the purpose of Audit.

Initially three (One major, One medium and One minor) projects shall be selected from each IDC for first year on which all or maximum WUAs /entity establish as per Sec.8 of MMISF Act are formed and areas delineated. WUAs in Head/Middle/Tail reach as well as on Distributaries in case of major and medium projects be selected. Similarly, while auditing on criteria of distribution of entitlements dt. 22 September, 2017, at least two Municipal Co-operations / two Nagar Palika/Parishad and two large Industries (1 process and 1 raw) having maximum water use be selected from jurisdiction of each IDC.

Chief Auditor shall also prepare and provide Annual Audit Plan for enforcement of entitlements based on ‘Procedure for Regulation and Enforcement of Entitlements’. The Audit plan to include (i) Season wise audit of entitlements for Irrigation as per Technical Manual 2025 (ii) Audit of non-irrigation Entitlements as per criteria of September, 2017 and (iii) Audit of non-irrigation tariff as per MWRRA’s tariff order. The Audit Plan for the year shall include list of projects and WUAs for irrigation and for non-irrigation list of domestic and industrial entities selected for audit purpose. First such Audit Plan for hydraulic year (1<sup>st</sup> July, 2025 to 30<sup>th</sup> June, 2026) shall be provided to Executive Director of all Irrigation Development Corporations for extending necessary co-operation to water entitlement auditors appointed by the Chief Auditor. One copy of yearly audit plan should be submitted to MWRRA for information.

Chief Auditor will finalise and provide checklist for Enforcement of Entitlements at field level and also at the office of Canal Officer, for all categories of water use to the water entitlement auditor.

Compliance in the form of action taken report shall be submitted to MWRRRA periodically within a month after completion of each season and annual report within a month after completion of hydraulic year, every year.

(By the order of the Authority)

Encl.1) Authority order dt. 30.04.2025

2) Procedure for Regulation and  
Enforcement of Entitlement  
of water entitlement Auditor and responsibilities of RBA)

(Mallikarjun Dharane)  
Secretary, MWRRRA

Copy to :

- 1) The Additional Chief Secretary, WRD, Mantralaya, Mumbai for information please  
[Attention – Smt. Namita Baser, Dy. Secretary (सिंचन व्यवस्थापन)]
- 2) The Secretary (CAD), Water Resources Department, Mantralaya, Mumbai For  
information please
- 3) The Superintending Engineer & Director, Directorate of Irrigation Research &  
Development, Moledina Road, Camp, Pune – 411001 For Co-ordination with the  
Chief Auditor (Water & Irrigation) Sambhaji Nagar (Aurangabad) for Enforcement  
of Entitlements.
- 4) Executive Director, Vidarbha Irrigation Development Corporation, Sinchan Seva  
Bhavan, Civil Lines, Nagpur 440 001.
- 5) Executive Director, Godavari Marathwada Irrigation Development Corporation,  
1<sup>st</sup> floor, Sinchan Bhavan, Jalna Road, Aurangabad-431 005.
- 6) Executive Director, Tapi Irrigation Development Corporation, Sinchan Bhavan,  
Aakashwani Chowk, Jalgaon-425001.
- 7) Executive Director, Konkan Irrigation Development Corporation, 2nd floor,  
Sinchan Bhavan, Kopari Colony, Bara Bungalow Area, Thane (East), 400 603.
- 8) Executive Director, Maharashtra Krishna Valley Development Corporation, Sinchan  
Bhavan, Barane Road, Mangalwar Peth, Pune 411 011.

With request to provide necessary information to Directorate (DIRD), Pune and  
cooperate to Water Entitlement Auditor appointed by Chief Auditor, Ch.  
Sambhajinagar for Enforcement of Entitlement.



## महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण

(महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण अधिनियम, २००५ चे कलम ३ अन्वये स्थापित वैधानिक प्राधिकरण)

### Maharashtra Water Resources Regulatory Authority

(A Statutory Authority Established u/s 3 of Maharashtra Water Resources Regulatory Authority Act, 2005)

#### ORDER NO 1 OF 2025

No. MWRRRA/Enforcement of Entitlements /229

Date: 30.04.2025

Section 11 (o) of MWRRRA (Amendment and Continuance) Act, 2011 reads as follows-

*"to establish a system of enforcement of the Entitlements issued by the concerned River Basin Agency to various Categories of Use and its regulation, through measurement and monitoring with a view to ensure that the actual use of water, both in quantity and type of use, are in compliance with the Entitlements issued"*.

As per Section 11(o) above, the Authority is empowered to evolve the system of enforcement of entitlements. In pursuance of this, Authority hereby directs Chief Auditor (Water and Irrigation) Maharashtra State, Ch. Sambhajinagar to audit the entitlements issued by River Basin Agencies to the various categories of users. The detailed procedure of Audit is enclosed in Annexure 'A'.

(Approved by Authority)

(Mallikarjun Dharane)  
Secretary, MWRRRA



**MAHARASHTRA WATER RESOURCES  
REGULATORY AUTHORITY**



ANNEXURE – A

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**PROCEDURE FOR REGULATION  
&  
ENFORCEMENT OF ENTITLEMENTS**

**Powers & Functions  
Of  
Water Entitlement Auditor  
under Chief Auditor, Chhatrapati. Sambhajnagar**

**AND**

**RESPONSIBILITIES OF RBA (Canal Officers)**

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9<sup>th</sup> floor, World Trade Centre-1, Cuffe Parade, Mumbai – 400 005

Emails: - i) [mwrralibrary@yahoo.co.in](mailto:mwrralibrary@yahoo.co.in) ii) [mwrra@mwrra.in](mailto:mwrra@mwrra.in)

Web site : [www.mwrra.maharashtra.gov.in](http://www.mwrra.maharashtra.gov.in)

Phone No. 022-2215 2019 / 022 6937 2000

( APRIL 2025 )

## **POWERS & FUNCTIONS OF WATER ENTITLEMENT AUDITOR**

### **1. Provisions in the Act**

Under Section 11 (a) of the MWRRA (Amendment & Continuance) Act 2011, the Authority is to determine the Criteria for Distribution of Entitlements 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.

Under Section 11 (o) of the Amended Act, 2011, 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 i.e. RBA.

### **2. Technical Manual and Criteria**

The Authority has under taken revision of its Technical Manual of 2015, as the 'Technical Manual on Criteria, Regulation, and Enforcement of Water Entitlements for Irrigation in Maharashtra (2025).

Authority has also issued Criteria for Distribution of Entitlements for Domestic and Industrial use on 22 Sept. 2017.

The Chief Auditor, (Water & Irrigation) Maharashtra; Ch. Sambhajinagar shall carry out audit for the Enforcement of Entitlements. He will appoint one officer for the project / projects at an appropriate level within his establishment not below the rank of Sub – Divisional Engineer / Assistant Engineer Grade I for major & medium projects and Assistant Engineer Grade II / Sectional Engineer for minor projects to test check on delivery of due supplies. Copies of Revised Technical Manual (2025) and Criteria (Sept. 2017) are available on website of MWRRA.

### **3. Objectives**

Following objectives shall be achieved through Monitoring & Enforcement of Entitlements –

(a) Entitlements issued to all category of users as per Criteria and Technical Manual of MWRRA.

- (b) Measurements of water use are taken regularly by measuring devices installed and properly calibrated.
- (c) Water use and supplies (for each category) are in compliance with Entitlements issued.
- (d) Equitable Distribution of Entitlements within each category of use as per Criteria and with terms & conditions prescribed.
- (e) This will also create data base for Dispute Resolution at PDRO & MWRRA level.

#### **4. Scope of Work**

Entitlements are to be given to all three sectors namely Irrigation Domestic & Industrial purposes. However as per Section 31 – A of MWRRA (amendment and continuance) Act 2011, Entitlements for the Irrigation are to be issued in such areas where compliance of all provisions in MMISF Act 2005, is made. Therefore, Chief Auditor, should select one major, one medium & one minor project for each Irrigation Development Corporation (i.e.  $5 \times 3 = 15$  Projects) in such areas [Preferably from Maharashtra Water Sector Improvement Project (MWSIP)] in the first year. Selection of WUAs or entities as per Sec. 8 of MMISF Act, should represent areas of Head / Middle / Tail reach of command area of main canal as well as distributaries wherever they are.

For Domestic Purposes selection of Bulk Water User Agencies would be anywhere in the area of a IDC, as per Criteria of Sept. 2017 & Tariff order of 29 March 2022 shall be based on one Municipal Corporation one Nagarpalika / Nagarparishad and one Grampanchayat – from each IDC.

For Industrial Purposes jurisdiction for selection of industrial water use entity shall be to whom Bulk Water Supply Entitlements are issued by RBA. Based on 1 large or medium industry of Process Water type & 1 industry using water as Raw Water. As well as one sugar factory (Except Kokan Region) in the jurisdiction of each IDC.

Water Entitlement Auditors appointed from existing establishment by Chief Auditor shall carry out the functions given in para 5 below

Chief Auditor shall follow such procedure in addition to it, deemed to be necessary to achieve objectives in para 3.0



## **5. Powers and Functions of the Water Entitlement Auditor**

Chief Auditor will appoint “Water Entitlement Auditor” (as given para 2.0) for the project, for particular year for enforcement of entitlement.

The Audit Officer will discharge following duties and Functions.

- i) He will directly report to the Chief Auditor in so far as Entitlement of Enforcement is concerned.
- ii) He will check whether the measuring device (MD) is properly installed without leakages from sides and at entry & exit points.
- iii) He will ensure that the calibration chart for MD is available with canal officer and the WUAs concerned.
- iv) He will ensure compliance with instructions for calibration given in para 5.4 Table 4 the Technical Manual (2025)
- v) He will ensure that all proformas prescribed in the Technical Manual are available in register form with RBA (Concerned canal officer) and WUA.
- vi) During each rotation of about 12/15 days, he will make atleast one random check of hourly gauge reading of the Measuring Device between 8.00 am & 17.00 hours and record on gauge filed book (Annexure 4 of the Technical Manual, 2015) and sign in the form in the appropriate column in acceptance of correctness of the gauge after actual verification of the reading. If there is an error in the reading observed by RBA (concerned canal officer) as becomes evidence during his test check, he will bring it to the notice of the RBA & WUA for due correction.
- vii) RBA shall provide necessary gauge data, compiled within two days after each rotation to the Chief Auditor as per his demand. If the quantum supplied in any rotation is short by 15% - 20% of the agreed quantum, he will issue a pink slip (**Annexure I** of this document) to the RBA directing for making good the shortfall in subsequent rotation.
- viii) He will record any remarks in forms 5 (1), 5 (2), 5 (3) giving actual volume of water supplied in each seasons against applicable Entitlement.
- ix) He will bring to notice of the Chief Auditor and RBA if irrigation is not done from tail to head.

- x) He will send an assessment report at the end of the season to the Chief Auditor giving his general observations about water management in the season and compliance of instructions issued by him to the RBA including any irregularity or mal-practice observed on site and any other issue / point he wishes to bring to the notice of the Chief Auditor & RBA.

## **6. Responsibilities of the RBA**

The project authority i.e. in-charge Executive Engineer will ensure that the following data should be made available to the Chief Auditor at the beginning of the season.

- i) Applicable water use Entitlement as finalized by RBA and WUA on storage of 15th Oct. / Nov. as the case may be.
- ii) Rotation schedule as finalized by RBA & WUA jointly viz. no. of rotations, duration and quantum per rotations etc.
- iii) Calibration chart of measuring device.
- iv) He will ensure that required assistance to the water entitlement auditor by way of support staff, stationery etc. are provided and all expenditure on this account will be borne by the project / department. The concerned RBA (canal officer) will also make himself available at site during inspection of water entitlement audit.

RBA shall also provide requisite data in formats prescribed in Technical Manual – April, 2025 and Criteria of Sept. 2017 at the end of each season to Chief Auditor.

## **7. Integrity**

In the discharge of his functions, the water entitlement auditor will observe the highest levels of integrity and maintain his independence in decision making uninfluenced by views / pressures of Irrigation staff of WUA.

**PINK SLIP**

1. Name of WUA & Registration No. :
2. Season : Kharif / Rabbi / Hot Weather
3. Applicable Water Use Entitlement : in Cum / season
4. Rotation No. : 1 / 2 / 3 / 4 –
5. Volumetric supply jointly (WUA & RBA) agreed to be supplied in the rotation : in Cum
6. Volumetric supply actually made in the rotation : in Cum
7. Shortfall in supply : in Cum and in %
8. Volumetric supply indented to WUA in next rotation No.\_\_\_\_: in Cum
9. Enhanced volumetric supply to be made next rotation No.\_\_\_\_: in Cum  
({Short fall at (7) + Indent at (8)})

Date :

**Signature of Water Entitlement Auditor**  
**with Name and Designation**

Copy to;

- i) Sectional Engineer / Assistant Engineer
- ii) Sub Divisional Engineer
- iii) Executive Engineer
- iv) Audit Office copy.