

CRITERIA
FOR
DISTRIBUTION OF ENTITLEMENTS
BY
RIVER BASIN AGENCIES
FOR
DOMESTIC & INDUSTRIAL USES

MAHARASHTRA WATER RESOURCES REGULATORY AUTHORITY
MUMBAI
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**CRITERIA FOR DISTRIBUTION OF ENTITLEMENTS BY RIVER BASIN
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1.0. PREFACE

- 1.1. The Maharashtra Water Resources Regulatory Authority (MWRRA) was established under an Act of the Government of Maharashtra on 8th June 2005. Its stated objective is to regulate water resources within the State, facilitate and ensure judicious, equitable and sustainable management, allocation and utilization of water resources and to fix the rates for use of water for agriculture, industrial, drinking and other purposes. The powers, duties and functions of the Authority are further clarified in the MWRRA (Amendment and Continuance) Act (Mah Act No. XXI of 2011) issued on 22nd April 2011.
- 1.2. An Approach Paper for the Criteria for Distribution of Entitlements by River Basin Agencies for Domestic & Industrial Uses had been prepared by the Authority and sent for comments to the stakeholders and NGOs active in the water sector vide letter dated June 7, 2011. The same was also made available on the web site of the Authority. Comments on the Approach Paper were received from various parties in due course were subject to scrutiny. After due scrutiny of the comments received, the Authority has finalised the Criteria and the same are laid down in the following paragraphs. A background note giving the *raison d'être* for the Criteria is enclosed in abridged form as Annexure.

2.0. APPLICABILITY OF THE CRITERIA

This Criteria is applicable to domestic and industrial (non-irrigation) categories of use in all water resources projects and will be followed by WRD & RBAs in issuance of Entitlement to non-irrigation Water Use Entities in a project after sectoral allocation is decided by the State government. However, for projects included under the irrigation Entitlement programme of the Authority and where all relevant provisions of the MMISF Act 2005, including delineation, have been complied for changes in sectoral allocation, the State government will have to approach the Authority for a review of Entitlements under Section 11 (j) of the MWRRA Act. Further, if an existing Water User Entity (WUE) seeks a

change in the volume of its Entitlement, the State government will have to approach the Authority for taking action under Section 11 (h) (ii) of the Act. The Authority shall develop separate Criteria for operationalising Sections 11 (j) and 11 (h) (ii) of the Act.

3.0. PROPOSED ALLOCATION PRINCIPLES

3.1. Definition

'Domestic user' means any public body or organisation (Gram Panchayat, Urban Local Body, Municipal Corporation, Maharashtra Jeevan Pradhikaran, Maharashtra Industrial Development Corporation) to whom bulk water is made available by the Water Resources Department/Irrigation Development Corporation for distribution to domestic and other users, with or without treatment.

'Industrial User' means any industry (including industrial development corporations) to whom bulk water is made available by the Water Resources Department/Irrigation Development Corporation for use as raw material or in process.

3.2. Allocation Principles

While non-irrigation uses are about 20% of the total water use in the State, the demand is likely to increase in the coming years putting pressure on fresh water sources and leading to curtailment in irrigation as non-irrigation users viz. drinking water have a higher priority in the water policy as compared to irrigation. Water use efficiency has to be thus the lynch pin for an allocation policy with the objective of meeting increasing demands from non-irrigation users by recycling and reuse or from other sources like groundwater. Since municipal and industrial effluents are not being treated to the required standards or are not treated at all before being let into the rivers, the allocation policy has also to serve as a vehicle for water quality improvement. These twin objectives have to be kept in view while framing the Criteria.

3.3. Transparency in Intimation of Availability of Allocation

Once sectoral allocation is decided by the State government at AA/RAA stage, RBAs will inform domestic and industrial WUEs through press and

its web site details about the project and availability of quantum of sectoral allocation in the project to each non-irrigation category of user. RBAs will invite applications from WUEs for allocation after deducting the provision made for non-irrigation uses at Administrative Approval stage.

4.0. CRITERIA FOR DOMESTIC USE

4.1. The applicable per capita norm for sanction of permission to domestic bulk users will be as under

<u>Category</u>	<u>Litres per capita per day</u> <u>(Lpcd)</u>	
Rural water supply (Gram Panchayat)	40	
Municipal Councils		
C-class (less than 20,000 population)	70	} Includes sanitation requirement
B-class (20,000 – 60,000 population)	100	
A-class (60,000-100,000 population)	125	
Corporations (more than 1 lakh population)	135/150	

4.2. The inter-se priority for allocation among various domestic demands will be determined by RBAs after consultation with concerned local authorities viz. MJP & urban local bodies keeping in view of the principles laid down in approved Integrated State Water Plan.

4.3. Data to be furnished by users seeking allocation for domestic use

4.3.1 Gram Panchayats

- (i) justification for demand with population and norm
- (ii) quantum met from groundwater based rural water supply schemes and other traditional water harvesting schemes
- (iii) any traditional water harvesting structure now defunct which can be revived and likely availability

ULB / Municipal Council or Corporation

- (i) population served / to be served and requirement as per norm.

- (ii) present/proposed arrangement for measurement of withdrawal at intake
 - (iii) present / proposed use out of total by domestic / industrial and commercial sectors and how industrial use is measured viz. separate metered pipeline for industrial supply.
 - (iv) for present users, level of unaccounted for water comprising thefts, pilferages, leakages and steps taken / to be taken to reduce this. For proposed users, steps planned to reduce this.
 - (v) present share of groundwater in total supply and whether scope exists to augment this availability. For proposed users, groundwater contribution planned.
 - (vi) whether roof top rain water harvesting bye-laws exist and progress in its implementation. If not, time frame for its introduction
 - (vii) present/planned arrangement for sewage collection, treatment and disposal including quantum
 - (viii) for present users, whether water audit carried out, if not programme of commencement
- 4.4. All new agreements with ULBs & Municipal Corporations should include a stipulation that by the end of the three year period, a minimum of 20% or more of the sewage effluent over and above the present level of such reuse will be progressively recycled by the utility either for its own use or use by other categories of users after treatment to MPCB standards provided there are no prior commitments for irrigation or other purposes stipulated by WRD
- 4.5. The agreement should also reflect the conditions imposed, if any, by the Competent Authority while authorizing the allocation and the time frame for its compliance.
- 4.6. Failure to achieve the above targets may invite such punitive measures at the time of renewal as the Authority may lay down including penal bulk tariff rate, reduction in allocation etc.

- 4.7. All new agreements will have a maximum validity of five years
- 4.8. The bulk water tariff including charges for reservation, excess use, late payment etc. will be as per Criteria for Bulk Water Tariff determined by the Authority for the relevant Control Period.

5.0. CRITERIA FOR INDUSTRIAL USE

- 5.1. The norms for industrial water required for various products are given below as guidance

<u>Product</u>	<u>Water required</u>
Dairy	6-10 litres/litre of milk
Sugar	15-40 litres/kg. of sugar
Distillery	20 litres/litre of alcohol
Cotton	1 litre/metre of cloth
Viscose rayon	1600 litres/kg. fiber
Pulp	270-450 litres/kg. paper
Tannery	40-45 litres/kg.
Steel	20-50 litres/kg. steel
Urea	6-8 litres/kg. urea
Thermal plant	5 Mm ³ /year/100 mw
Copper/zinc smelter	55-110 m ³ /tonne
Petro chemicals	17 m ³ /tonne
Chemicals	5.5 m ³ /tonne
Cement	55m ³ /tonne
Fertilizer	16.5 m ³ /tonne
Food processing	2.5 to 11m ³ /tonne

5.2. Data to be furnished by users seeking allocation for industrial use

5.2.1 Data to be furnished along with application

- i) nature of the product and whether licence of Competent Authority is obtained for setting up the industry.
- ii) water use norms for per unit of production and total water use as per norm and as proposed. Reason for difference.

- iii) whether the industry requires water intermittently or continuously with justification
- iv) water required for domestic purposes for colonies with population and norm
- v) arrangement for measurement of water at intake
- vi) type and quantum of effluent generated /to be generated with BOD/COD levels and treatment being done/proposed to bring it to required standard before release
- vii) point of release of effluent
- viii) whether clearance of MPCB obtained for above
- ix) whether recycling being done / proposed to be done, whether the sought allocation can be met by treating domestic sewage effluent and using it
- x) whether groundwater used/proposed and if so quantum

5.2.2. A Committee comprising Joint Director, Industrial Development and CE, WRD will examine the water requirement projected by the industry keeping above norms and other factors in view. The Committee will also decide on inter-se priority among competing industries for allocation of water keeping various factors in view like importance of the product to the economy of the State, employment potential and pollution aspects and principles laid down in the approved Integrated State Water Plan.

5.2.3. The agreement to be entered into with WUE should reflect the conditions imposed, if any, by the Competent Authority while authorizing the allocation and the time frame for its compliance.

6.0. SHARING OF SHORTAGE

6.1. While entering into new agreements with WUEs, WRD/RBA will reflect the following formula for sharing of the shortage in years when reservoir does not attain design storage on Oct. 15th.

For domestic WUEs - only for Municipal Corporations

- (i) reservoir is between 100% to 75% of design storage no cut in Entitlement.

- (ii) reservoir is between 75% to 50% of design storage 10% cut in Entitlement
- (iii) reservoir is between 50% and 33% of design storage 20% cut in Entitlement
- (iv) reservoir below 33% of design storage (water scarcity or distress situation) Entitlement as determined by the State Government.

For Industrial WUEs

- (i) reservoir is between 100% to 75% of design storage no cut in Entitlement.
- (ii) reservoir is between 75% to 50% of design storage
 - 10% cut for bulk users viz. individual industrial units / industrial estates / MIDC (who subsequently supply retail also)
 - No cut for thermal plants
 - 10% cut for industries drawing directly from reservoirs to be identified separately at agreement stage
 - 15% cut for industries using water as a raw material
- (iii) reservoir is between 50% and 33% of design storage
 - 20% cut for bulk users viz. individual industrial units / industrial estates / MIDC (who subsequently supply retail also)
 - No cut for thermal plants
 - 20% cut for industries drawing directly from reservoirs to be identified separately at agreement stage
 - 25% cut for industries using water as a raw material.
- (iv) reservoir below 33% of design storage (water scarcity or distress situation)..... Entitlement as determined by the State Government.

7.0. VALIDITY OF THE CRITERIA

The Criteria is valid for a minimum period of three years at the end of which the Authority will initiate the consultation process for its revision, if considered necessary.

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1.0. Background

1.1. Section 11 (a) of the MWRRA Act, as amended, requires the Authority 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 by the Competent Authority.

- i. **Sectoral allocation** is defined in the amended Section 2 (u) (1) as the allocation made from the water resources project by the State government to various User Categories.
- ii. Section 2 (f) of the Act defines ‘**Category of Use**’ as the use of water for different purposes such as domestic, agricultural irrigation, agro based industries, industrial or commercial environmental and such other purposes as may be prescribed.

1.2. Before discussing the approach to be adopted for the preparation of the Criteria for distribution of Entitlement under Section 11 (a) of the MWRRA Act, 2005, it is necessary to examine the scope and ambit of the new Section 31 A in the MWRRA (Amendment and Continuance) Act 2011 issued by the State Government on 22.4.2011 to amend the MWRRA Act and its implications on the various other provisions on Entitlement in the Act. The said Section 31 A reads as under

“31 A. Notwithstanding anything contained in this Act or in any other law for the time being in force, the term ‘Entitlement’ shall apply only to such areas where compliance of all relevant provisions including delineation under the Maharashtra Management of Irrigation Systems by Farmers Act, 2005 is made.”

1.3. From a reading of the above section, it appears that the term ‘Entitlement’ referred to here means Entitlements issued to WUAs in delineated command areas of projects where other provisions of the Farmer’s Act have become applicable. These provisions vide Section 22 of Farmers Act include. identification of Priority I & II works for rehabilitation, completion of their rehabilitation within the stipulated time and signing of agreements between WRD and the WUAs in the CCA of such projects.

1.4. The MWRRA Act uses the term Entitlements as a broad concept applicable in different contexts. In the context of irrigation the term refers to “Entitlements” issued to WUAs. In this case the term is used

specifically by its proper name viz “Entitlement”. On the other hand in other contexts i.e. in the context of non-irrigation sectors (Domestic & Industry) the term Entitlements is used in the Act in its generic sense. It refers to any document by which the RBA agrees to make available to any water user entity a specified quantum of water during a specified period or periods. Consequently, it follows that non-irrigation agreements between WRD and Water User Entities (WUE) for supply of water to water utilities/industries within sectoral allocation are not Entitlements as referred to in the amended Section 31 A. In other words, the term ‘Entitlement’ referred to in Section 31 A are only those Entitlements which are issued to WUAs in delineated areas.

- 1.5. An examination of other provisions in the MWRRA Act relating to Entitlements supports the abovementioned conclusion for the following reasons
- (i) By definition [Section 2 (i)], Entitlement means any authorization by River Basin Agency to use the water for the purposes of the Act. In other words it is not merely those authorizations which are issued to WUAs. The amended section 31 A can only apply to authorizations issued to WUAs since provisions of the MMISF Act including delineation are only applicable to CCAs for the purpose of irrigation.
 - (ii) Section 2 (zc) defines a Water User Entity to include WUAs, utilities, industrial users which are authorised to receive and utilize an Entitlement. Thus WUAs are only one among many water user entities and section 31 A by its very nature cannot be applied to water user entities other than WUAs
 - (iii) Under amended Section 11 (a), the Authority has to determine the Criteria for distribution of Entitlements by the RBAs *within each category of use*. Category of use is further defined in Section 2 (f) to mean use of water for different purposes such as domestic, agricultural, industrial, commercial, environmental etc. Since the provisions of the MMISF Act including delineation cannot be applied to non-agricultural purposes the limitations imposed on the term “Entitlement” by section 31 (A) cannot be applicable to Entitlements issued to water user entities for non-irrigation purposes.
 - (iv) Section 11 (h) (ii) of the MWRRA Act deals with modifications in entitlements of *all* water user entities and not merely those of WUAs. If the term Entitlement as used in section 31 A is interpreted to cover Entitlements of all water user entities then the section 11(h) (ii) will become infructuous. Since the Amended Act does not repeal 11 (h) (ii) both the sections which 11 (h) (ii) and section 31 (A) have to given a harmonious construction. This can only be done by restricting section 31 (A) to entitlements given to WUAs within the sectoral allocation for the irrigation sector.

1.6. From the foregoing discussions it is clear that Section 31 A relates only to Irrigation Entitlements in the delineated areas. Its main import is that deliveries for irrigation become legal Entitlements only when the provisions of the Farmer's Act have been complied with in the command areas. The term 'Entitlement' mentioned in Section 11 (h) is a broader term and applies therefore to all categories of users and the various provisions in the Act relating to Entitlement including especially Section 11 (h) (ii) are not diluted or neutralized by Section 31A. The term 'areas' in section 31 A cannot mean anything other than command areas of WUAs to whom water deliveries are made. The term cannot be applied for non-irrigation users who may or may not have any areas in the CCA of a project.

1.7. The foregoing arguments are further confirmed in the Draft Rules of the MWRRA Act notified on August 21, 2010. The 'Explanation' note under Section 10 of the Rules states as under

"In so far as agricultural irrigation use is concerned, the term 'Entitlement' except 'Individual Water Entitlement' shall apply to such areas where compliance to all relevant provisions, including delineation, under the Maharashtra Management of Irrigation Systems by Farmers' Act, 2005 is made."

2.0. NEED FOR CRITERIA

2.1. Currently, Entitlements or authorizations to non-irrigation users are being issued by RBAs mainly on first-come-first served or demand basis, within the sanctioned sectoral allocations. In some cases, Entitlements are specifically provided in the administratively approved report itself. This is being done without the application of any pre-determined norms. Criteria are therefore required to be in place to ensure that there is no ad-hocism in the issue of authorizations by RBAs for non-irrigation uses.

2.2 An important objective of the Criteria as stated in Section 10 (7) of the Draft Rules also will also be to promote recycling and reuse of water, which is also one of the objectives of the National Water Mission, to reduce the pressure on fresh water sources in the State and ensure that municipal and industrial effluents are treated to the required standards before their discharge into rivers. The National Water Mission is one of the eight missions being implemented at the national level within the National Action Plan on Climate change. The State government has also vide GR dt. 6-10-2010 constituted a Steering Committee headed by Secretary, CAD with the same objective.

2.3. The Criteria for distribution of Entitlements for irrigation are already prescribed in the rules of the MMISF Act 2005. Further the Authority has brought out the following two technical manuals to detail the procedure for determination of Entitlements for irrigation viz.

(i) Technical Manual for Fixing, Regulating and Enforcing the Entitlements in irrigation projects.

(ii) Procedure for Regulation and Enforcement of Entitlements - Powers & Function of Regulators and Responsibility of WRD officials.

In the non-irrigation sectors there are no such criteria and it is necessary to prescribe these in the interest of improving efficiency and equity and in the interest of sustainable development. Although non-irrigation use is on an average about 20% of total use, this is likely to increase in the coming years due to urbanization and industrialization. In certain projects in the State, the percentage of allocation of storage to non-irrigation is in the range of 40% - 50%. In many projects, the original allocation has been revisited by the Competent Authority to increase the allocation to non-irrigation at the expense of irrigation.

3.0. PROVISIONS IN THE STATE WATER POLICY AND THE MWRRA ACT RELATING TO WATER CONSERVATION AND WATER QUALITY

3.1. Water conservation means the efficient use and saving of water through prevention of wastage of water to achieve productive and consumptive efficiency of water. This can be achieved by various measures like use of water saving devices, water efficient process, water demand management and water rationing. To usher in water conservation, the first requirement is to carry out a water audit for each project (in case of irrigation), industrial unit and domestic water utility. A water audit is merely a water account of total supply and total use carried out through measurement of flows at various points to identify the actual use, transmission losses, pilferage and thefts and end flows of unutilized water or return flows from the system, in which case its quality is also required to be assessed.

3.2. The State Water Policy has the following provisions for water audit and water conservation.

(A) Water Audit

For increasing utilization of available potential, water audit is necessary. Water audit will be compulsory for all water resources projects. The service providers shall be accountable for providing measuring devices for volumetric supply and for giving the account of water use in various sectors.

(B) Conservation of Water

The efficiency of utilization in all the diverse uses of water shall be improved and an awareness of water as a scarce resource shall be fostered. Conservation consciousness shall be promoted through education, regulation, incentives and disincentives.

Recycling and reuse of water have to be attempted for augmentation of water resource. This will include reclaiming usable water from sewage after necessary effluent treatment. This should be made mandatory for industries use.

Measures to control the evaporation from the water bodies is taken up and efforts made to make the process more cost-effective.”

- 3.3. The MWRRA Act enjoins the Authority to promote water use efficiency in the State in the following sections

“11. (q) to promote efficient use of water and to minimize the wastage of water and to fix reasonable use criteria for each Category of Use;

12. (4) The Authority shall, in accordance with State Water Policy, promote and implement sound water conservation and management practices throughout the State.

- 3.4. Water Quality is dealt in the State Water Policy in Section 2.3. as under

“The quality of water resources of the State shall be protected to preserve their usability in a sustainable manner for the peoples of the State. The State shall establish a programme of control of discharge of any pollutants to the surface and sub-surface waters of the State including the ocean, bays and saltwater marshes of the State. This programme shall include the registration of any such discharges, the licensing and monitoring of such discharges and the establishment of standards for the waters of the State and acceptable and appropriate limits for any discharge of pollutants into these waters. The river basin agencies shall consider the maintenance of water quality in the preparation of river basin plans, operations plans and watershed development plans.

The pollution of the waters resources of the State will be prohibited and those polluting, contributing to the pollution or abetting the pollution of the water resources of the State shall be penalized as provided in the laws and the regulations of the State through its relevant State agencies.”

- 3.5. The MWRRA Act requires the Authority to assist the MPCB in enhancement and preservation of water quality

“12 (5) The Authority shall support and aid the enhancement, and preservation of water quality within the State in close

coordination with the relevant State agencies and in doing so the principle that 'the person who pollutes shall pay' shall be followed."

4.0. WATER POLLUTION

- 4.1. Pollution means the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it less fit for any beneficial purpose for which it may reasonably be expected to be used or harmful or potentially harmful to the welfare, health or safety of human beings the aquatic or non-aquatic organisms the resource quality property
- 4.2. Maharashtra is a highly urbanized and industrialized State. Thus the State Water Policy allocates a higher priority to industry, after drinking water, both over agriculture. About 40% of the total population is urban. This is going to increase at a faster rate in the years to come. River water pollution has thus assumed importance in the State as it has the maximum number of polluted river stretches in the country (28 out of 150). 8 stretches are identified as Priority 1 with BOD above 30 mg/l.
- 4.3. Sewage pollution is the main water quality problem in the rivers in the State. Of the 6200 mld of sewage generated in urban areas, 90% is generated by Corporations, about 78% goes untreated and. B&C class cities have no treatment facility at all.
- 4.4. No study has been made on the non-point pollution from irrigation return flows which are polluted with chemicals from fertilizer, pesticide and weedicide uses. However compared to non-irrigation volume of return flows, return flows from irrigation are only 10-15% of the drawal.
- 4.5. The position regarding point source industrial pollution is more satisfactory as about 30% of the 600 mld effluent generated by industries is treated in ETP/CETP.
- 4.6. There is thus immense scope in the State to treat and recycle/reuse sewage effluent for irrigation/gardening/dual domestic supply or industrial use as the BOD level of 30 mg/l can be brought down to below 5 mg/l in 5 days by oxidation in a sewage treatment plant or by natural oxidation methods by retaining sewage water in ponds. In fact, sewage effluent of 30-100 mg/l BOD can be directly used for irrigation/gardening. Tertiary treated sewage effluent can be used by process industries.
- 4.7. Recycle and reuse of industrial effluents is more costly as it involves other hazardous chemicals like chromium, mercury, arsenic and other organic elements like phosphorus and nitrogen which take time to oxidize. Localized treatment, industry-wise, followed by treatment in a CETP for cluster of industries to bring down COD levels to 250-500 mg/l before release into water bodies, is to be ensured.