Regulatory Interventions of MWRRA
April 26, 2019
Outline of Presentation

• Water Resource scenario of the State.

• Set up of MWRRA.

• Legislative Mandates of MWRRA.

• Key Regulatory Interventions of the MWRRA.
Water Resource Scenario of the State
Water Resources Scenario of the State

- Surface Water Availability: 164 BCM
- Water use Entitlements of the State: 126 BCM
- Groundwater availability: 34 BCM
- Total average water availability: 160 BCM
- Storage capacity created: 44 BCM
- Population: 112 M
- Water Availability / Capita: 1428 M³
Basin-wise Distribution Of Water, Cultivable Area & Population

- Narmada Basin: 0.3% Cultivable area, 16.7% Permissible water use
- Tapi Basin: 4.3% Cultivable area, 14.5% Permissible water use
- Godavari Basin: 27% Cultivable area, 36.2% Permissible water use
- Krishna Basin: 55% Cultivable area, 24.6% Permissible water use
- High altitude ridge (+ 610 m)

MWRRA
WR Development of the State

- Ultimate irrigation potential................................................................. 12.6 Mha
- Irrigation potential created through surface water...................................... 6.67 Mha
  (Including M & M, minor projects & water conservation structures)
- Area under micro-irrigation................................................................... 1.27 Mha
- Water Users Associations (WUAs) formed............................................... 5165
- Area handed over to WUAs................................................................... 1.22 Mha
- Installed hydro power capacity............................................................. 3678 MW
Status Of Wastewater Generation and Treatment in Urban Areas

- Population: 115 million (2011)
- Urban Population: 45%
- No. of Municipal Corporations: 27
- No. of Municipal Councils: 219
- Nagar Panchayat/ Cant. Board: 13

Sewage generated (7,297 MLD)
Sewage treated (3,994 MLD) (54.7%)
Legislative Framework
Legislative Framework

Established under Section 3 of the MWRRA Act, 2005, in June 2005.

Became operational in August 2006.

One of the Institutional Restructuring Initiative taken under MWSIP supported by WB.
MWRRA

• Initially, the Authority had mandate of regulating Surface Water Resources only and had Chairman and two members (Member Engg. & Member Eco.).

• Subsequently, Maharashtra Groundwater Act, 2009 was enacted in December, 2013 and since then MWRRA is also working as a State Ground Water Authority.

• In 2016, two more members were added [Member (Groundwater) & Member (law)]
Objects of the MWRRA Act

To Regulate, Facilitate, and Ensure

Judicious, Equitable & Sustainable

Management, Allocation & Utilisation

of Water Resources in the State
Mandates of MWRRA

• To regulate Surface and Groundwater Resources of the State;

• To facilitate and ensure, sustainable management and utilization, of Water Resources of the State;

• To facilitate and ensure, equitable and judicial, allocation of WR;

• To determine criteria for distribution of water entitlements;

• To monitor bulk water entitlements;
Mandates of MWRRA

• To establish Bulk Water Tariff System;

• Scarcity Management by adjusting the Entitlements by temporary transfer;

• To resolve the disputes with regard to issuance and delivery of Entitlements;

• To monitor the implementation of irrigation backlog removal performance;
Mandates of MWRRA

• To promote efficient use of water and minimize wastage;

• To promote and implement, effective water conservation and management practices;

• To support and aid, the enhancement and preservation of water quality in close co-ordination with the State Pollution Control Board.
Regulatory Independence

- MWRRA is directly answerable to the State Legislative Assembly.
- MWRRA is expected to place Annual Report in the Legislative Assembly.
- Appointments of the Chairman & Members are done by Hon. Governor on recommendation of Selection Committee headed by CS.
- Govt. can issue directions related to matters of policy involving public interest.
- Funds are made available by State Government after appropriation by the Assembly.
- Thus, MWRRA has Organizational & Decision making autonomy but no Financial autonomy.
Establishment

CHAIRMAN

Member (WR Resources Engineering)
Member (Economics)
Member (Law)
Member (Groundwater Management)

Secretary

Director

Dy. Director (Groundwater)
Dy. Director (Planning)
Dy. Director (Economics)
Dy. Director (E.E.R.)

Asst. Director (Planning)
Asst. Director (Planning)
Asst. Director (Tariff)
Asst. Director (Entitlement)
Asst. Director (Enforcement & Regulation)

Account Officer
Registrar

Supporting Staff

Special Invitees
5 for surface water (RBAs) and
3 for Groundwater
(GSDA + Expert + Woman)
Regulations & Operating Policies of MWRRA

- MWRRA (fixing criteria & issuance of tariff order for bulk water) Regulations, 2013.
- MWRRA (recruitment & conditions of services of employees) Regulation, 2013.
- Operating Policy for clearance of WR projects, April 2015.
- Operating Policy for clearance of Water Resources projects, which undergo change of scope September, 2017.
Vision & Mission

VISION STATEMENT

“To be a proactive, professional and trustworthy water resource regulator.”

MISSION STATEMENT

“Our mission is to provide sustainable water security to the State of Maharashtra.”
Adopted Regulatory Principles

- Focus on mandated objectives.
- Transparency.
- Consistancy in Regulations & Policies.
- Independent decision making, at arms length, from Political & Executive systems.
- Sound Legal & Empirical basis.
- Follow “Make - Operate - Assess Impact- Review” cycle for regulatory activities.
- Regular & Purposeful engagements with regulated entities & other Stakeholders.
Focus Areas

• Improving Water Governance through Regulatory Orders;

• Trust Building through Frequent Stakeholder Consultations

• Demand Management by Promotion of Micro irrigation, Recycling of Water & Rainwater harvesting.

• Mass Awareness building : Regarding community ownership of water bodies, water conservation & water quality preservations.

• Maximum water data to be made public.
Stakeholder Consultation
Stakeholder Consultations
Outcome of Stakeholder Consultation
23-24 August, 2017

- Rural water supply norms need upward revision.
- Domestic water supply should be restricted to norms.
- SCADA based ultrasonic metering for bulk supply.
- 100% treatment of generated sewage to CPCB/MPCB norms.
- DBWUs should be permitted to sell treated sewage to make STP self sustainable.
- Water Audit should be made mandatory. Water Audit report to be made public.
- Non irrigation entitlement data should be made public.
- Increasing Block Tariff necessary to control over use.
Key Regulatory Interventions
Key Regulatory Orders / Initiatives

- Sub-Basin level equitable water distribution amongst the reservoirs, in 4 deficit sub-basins viz. Upper Godavari, Ghod, Girna & Upper Bhima.

- Introduced formula for sharing of project level water deficit between various category of users.

- Irrigation entitlements to 1202 WUAs on 256 irrigation projects.

- Final disposal of 54 Petitions involving various disputes.

- Established Reasonable Water Use Standards for domestic & industrial water use.
Key Regulatory Orders / Initiatives

- Bulk Water Metering has been made Mandatory.

- ULBs to take water from reservoir only by constructing pipeline.

- Annual Water Budget & Annual Water Audit made mandatory for non-irrigation water users. (To be kept in public domain)

- No increase in domestic water entitlement unless the utility ensures construction of STP concurrently with water treatment plant.

- ULBs shall mandatorily compensate for the extra water, over & above the sectoral allocation, by making available, equivalent quantity of water, for agriculture use, after due treatment.

- No new entitlements to water intensive industries (pulp & paper, TPS, textile, tanyary, bottling plants, brewery, winery) in water deficit basins. (Water availability < 3000 cubic meter / ha of CCA)

- Introduced Increasing Block Tariff (IBT) in Domestic and Industrial sector.
Long Term Strategy for Domestic Sector Orders Dt. September 22, 2017

- Metering for every society/ connection.

- Leakage reduction by 1% every year till it attains maximum level of 10%.

- Reducing per capita consumption within stipulated norms by increasing public awareness, promoting water efficient devices, managing non potable water demand (gardening, fire fighting, grounds etc.) with water that can be made available from rainwater harvesting/recycling.

- Collection and treatment of entire generated sewage.
Criteria for Reasonable Water Use
# Reasonable Water Use Standards for Domestic Sector

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category</th>
<th>Norm (lpcd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rural Water Supply Schemes</td>
<td>55</td>
</tr>
<tr>
<td>2</td>
<td>Peri-Urban Area</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Municipal Councils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3a) C – Class</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>3b) B – Class</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>3c) A – Class</td>
<td>125</td>
</tr>
<tr>
<td>4</td>
<td>Municipal Corporations (having Population less than 50 Lakh)</td>
<td>135</td>
</tr>
<tr>
<td>5</td>
<td>Municipal Corporations (having Population equal to more than 50 Lakh)</td>
<td>150</td>
</tr>
</tbody>
</table>
## Reasonable Water Use Standards for Industries

<table>
<thead>
<tr>
<th>Category</th>
<th>Water Use Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power Plant</td>
<td>2.5 cum/MWh</td>
</tr>
<tr>
<td>Agro residue based paper mill</td>
<td>200 cum/ton</td>
</tr>
<tr>
<td>Waste paper based paper mill</td>
<td>175 cum/ton</td>
</tr>
<tr>
<td>Iron &amp; Steel</td>
<td>200 cum/ton</td>
</tr>
<tr>
<td>Copper Smelters</td>
<td>100 cum/ton</td>
</tr>
<tr>
<td>Sugar Factory</td>
<td>0.2 cum / ton of crushing</td>
</tr>
<tr>
<td>Brewery</td>
<td>4 Lit/ Lit of beer</td>
</tr>
<tr>
<td>Distillery</td>
<td>15 cum/ 1000 Lit of Alcohol</td>
</tr>
<tr>
<td>Cement</td>
<td>0.3 cum / Ton</td>
</tr>
<tr>
<td>Bottled Water</td>
<td>1.4 Lit / Lit bottled water</td>
</tr>
</tbody>
</table>
Water Tariff System
Tariff Determination

Provisions in the Act:

• Full recovery of cost of irrigation management including administration and O & M charges.

• Stakeholder consultation.

• Review and revise water charges after every 3 years.


• Step 1: Approach Paper for Criteria

• Step 2: Finalizing Criteria.

• Step 3: Finalizing Tariff Order.

Stakeholders are consulted during all the 3 steps.
Tariff Order Dated January 11, 2018

Admissibility of O & M Cost

• Norms adopted for Admissibility of O & M Cost
  • Flow Irrigation: RS/ha

<table>
<thead>
<tr>
<th></th>
<th>Command Area actually in use</th>
<th>Command Area not in use</th>
</tr>
</thead>
<tbody>
<tr>
<td>M &amp; M Project</td>
<td>2000</td>
<td>1000</td>
</tr>
<tr>
<td>Minor Projects</td>
<td>1332</td>
<td>661</td>
</tr>
</tbody>
</table>

• Head Works of LIS: Electricity Charges + RS. 0.2/ unit of electricity consumed for O & M Electromechanical Equipment.
Tariff Determination
Apportionment of Admissible Cost

As per the Tariff Regulations Total O & M cost is apportioned amongst 3 water use sectors (Agriculture, Domestic & Industry) on the basis of following criteria:

- Affordability
- Accessibility
- Timeliness
- Impact on Water Quality

Percentage Apportionments finalized after stakeholder consultations for the years 2017-2020 are:

- Domestic: 19%
- Industry: 56%
- Agriculture: 22%
Tariff Order Dated January 11, 2018

Apportionment of Admissible Cost

• Admitted O & M cost: 1016.14 Crs.
  (For total Water use: 34,039 MCM, Irrigation Area: 4.96 Million ha)

• Apportioned Cost:

  Agriculture 193 crs.
  Domestic 224 crs.
  Industry 599 crs.)
Tariff Order Dated January 11, 2018

Important Features

• Increasing Block Tariff for domestic and industrial sector.

• In built provision of 10% tariff increase in subsequent years

• 81% electricity charges of Government operated Lift irrigation Scheme (GLIS) are distributed on all users.

  (Farmers of GLIS to pay canal water rate + 19 % electricity charges)

  Intention: to reduce tariff gap between flow irrigation & LIS.

• Within 1 year private lift irrigation entitlement holders have to install meters. (Otherwise applicable tariff = 2x Flow Irrigation)

• Tariff for townships (developed by private entities) : 5 x rate in corporation Area. (Affordability Principle)

• Tariff for industries manufacturing cold drinks/brewery/mineral water : 25 x industrial rate (Affordability Principle)
# Standard / Basic Tariffs

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Category of Use</th>
<th>Water Rate RS. / Cubic meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flow Irrigation (Kharif/Rabi/Hot Weather)</td>
<td>0.045/0.09/0.135</td>
</tr>
<tr>
<td>2</td>
<td>Domestic (Gram Panchayat/ Municipal Councils/ Corporations)</td>
<td>0.15/0.18/0.25</td>
</tr>
<tr>
<td>3</td>
<td>Townships</td>
<td>1.25</td>
</tr>
<tr>
<td>4</td>
<td>Processing Industries</td>
<td>4.8</td>
</tr>
<tr>
<td>5</td>
<td>Industries using water for manufacturing mineral water, beer, wines, soft drinks etc.</td>
<td>120</td>
</tr>
</tbody>
</table>
## Increasing Block Tariff For Domestic Users

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Actual Water Use [including UFW]</th>
<th>Applicable Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Quantity up to 115% of norm based water use</td>
<td>Standard Rate</td>
</tr>
<tr>
<td>B</td>
<td>Quantity between 115% - 140% of norm based water use</td>
<td>1.5 times Standard Rate</td>
</tr>
<tr>
<td>C</td>
<td>Quantity exceeding 140% of norm based water use</td>
<td>2 times Standard Rate</td>
</tr>
</tbody>
</table>
Increasing Block Tariff For Industrial Users

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Actual Water Use</th>
<th>Applicable Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Up to 115% of eligible water use as per norms</td>
<td>Standard Rate</td>
</tr>
<tr>
<td>B</td>
<td>Water use greater than 115% eligible use</td>
<td>1.5 times Standard Rate</td>
</tr>
</tbody>
</table>
Promotional Incentives

Irrigation Sector

To promote PIM: 25% tariff concession for WUA.

- To promote micro irrigation: 25% tariff concession for farmers using micro-irrigation.
- WUA + Micro Irrigation: 50% tariff concession

Industrial Sector

- Agro based industries: 25% tariff concession
- If industry reduces its consumption up to 75% by way of recycling: 25% tariff concession
Penal Provisions -

- Water Use without Agreement : 2 x Applicable Rate
- Water Use without meter / meter faulty : 1.5 x Applicable Rates.
- Unauthorized use for industrial purpose : 3 X Applicable Rate .
- Delayed Payment : 10 %.
DIALOUGE WITH CITIZENS
Water Tariff Concerns

- Prevailing Maharashtra Policy does not permit any percentage of capital cost recover, from water charges. Tariff is targeted to recover only “O & M”. Hence, Tariff / Price is much below the cost.

- Agriculture water is cross subsidized by Industrial users. As a result there is a tendency of overuse.

- Fresh water rates for domestic sector are so low that there is no incentive for recycle and reuse of water.
Impact Assessment Study

MWRRA has undertaken the Impact Assessment Study of Tariff Order through KPMG.
Basin Level Equitable Distribution
Equitable Distribution
Orders Issued

- Upper Godavari Sub-basin (September 19, 2014)
- Girna Sub-basin (December 21, 2015)
- Ghod Sub-basin (January 5, 2016)
- Bhima Sub-basin (January 6, 2016)
Intercepted & Free Catchment of Upper Godavari (Upto Paithan Dam)

Legends - Upstream Side Dams Catchment Area 7500Sq Km
Free Catchment- Jayakwadi Dam- Catchment Area 14274Sq Km
Reservoirs in Upper Godavari sub-basin
Basin Level Equitable Distribution

- Based on the storage positions in various reservoirs in the basin at the end of monsoon equitable distribution is done.
- Equitable distribution is achieved by prescribing certain set of allocations, which are common to all reservoirs in the basin.
- Accordingly, entitled water use for each reservoir is decided.
- Surplus water in upper reservoirs is released for downstream reservoirs.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Domestic</th>
<th>Industry</th>
<th>Kharif Irrigation</th>
<th>Rabbi Irrigation</th>
<th>Summer Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>II</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>III</td>
<td>100</td>
<td>90</td>
<td>100</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>IV</td>
<td>100</td>
<td>90</td>
<td>100</td>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>V</td>
<td>100</td>
<td>90</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Sharing of Project Level Water Deficits
Sharing of Water Deficit

Authority has evolved deficit sharing formula.

Allocation Percentage \( Ad = 70 + \left[ \left( u \times 30 \right)/100 \right] \)

\[ U = (\text{Storage on 15th oct.} + \text{Kharif utilisation}) \times 100 \]

Design annual utilization

If Percentage Inflow (U) in particular year is 90 %,

\( Ad = 70 + \left[ \left( 90 \times 30 \right)/100 \right] = 97 \),

Deficit sharing 3 %.

(for industries allocation = 60% + ∆)
Dispute Resolution
Dispute Resolution
Dispute Resolution
Dispute Resolution
Clearance of New Projects
# Clearance for New Project

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conformity of proposal with ISWP</td>
</tr>
<tr>
<td>2</td>
<td>Hydraulic Viability</td>
</tr>
<tr>
<td>3</td>
<td>Economic Viability</td>
</tr>
<tr>
<td>4</td>
<td>Environmental Viability</td>
</tr>
<tr>
<td>5</td>
<td>Inter Sate Aspect</td>
</tr>
<tr>
<td>6</td>
<td>Hon. Governors Directives</td>
</tr>
</tbody>
</table>

Cleared 195 Projects
Advisory Role

- To restructure Sectoral Allocation: Allocation should be Project specific, to cater for area specific considerations, land use pattern, activities & means of livelihood.
- Inputs for revising State Water Policy mentioning state specific challenges with strategies and specific focus areas.
- Inputs for amendment of the Act to make water governance more effective.
Evaluation of ISWP Implementation

• Independent evaluation of effectiveness ISWP implementation.

• To gather implementation inputs from stakeholder advisory panel regarding implementation issues, examine options to deal with such issues and advice to State Water Council.
Future Focus

• Enforcing orders already issued.
• Ensuring all water data public.
• Ensuring collection & Treatment of entire generated sewage.
• Ensuring Switching of TPS within 50/100km from STP, to treated water.
• Making micro-irrigation mandatory for farmers lifting water from reservoirs and growing water intensive crops like sugar cane.
• Promoting water efficient devices.
• Promoting Valuing Water concept.
Farmers Awareness Building Workshop
Interactions With South Australia
MWRRA adjudged as the Best Water Regulatory Authority by MOWR, RD & GR
Thank you

MWRRA Website [www.mwrра.org]