Assessment of Impact of Water Tariffs

(2010-13)

Summary Report

Study done by

Society for Promoting Participative Ecosystem Management
(SOPPECOM)

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(MWRRA)

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Summary

Introduction

The present study examines the impact of the tariff 2010-13 with the aim of proposing suggestions to the process of criteria preparation for 2013-16. This is a summary of the main findings and recommendations of the study report. This study assumes a tariff structure and methodology that is broadly based on the criteria developed for the period 2010-13 and does not go beyond that framework in both its assessment of impact as well as its recommendations for the next tariff cycle of 2013-16. It should here be noted that we and other civil society organisations have questioned this methodology itself and have made what would constitute a set of comprehensive measures. For the purposes of this study we have treated it as a short term objective of placing the impact against the framework of existing methodology. However, we would like to emphasise here that along with our short term recommendations for the next tariff cycle, MWRRA and the government should also seriously initiate a dialogue on this comprehensive set of suggestions from civil society on the entire range of issues raised and evolve a consensus well before 2015, so that the criteria for 2016-2019 can be based on this wider consensus.

Objectives and scope

The main objective of the present study is to assess the impact of tariff and the various provisions set within the tariff order to the different users.

The study is entirely based on circle level data provided by MWRRA for nine circles in Maharashtra. It was not possible to consider state level data because the data are not compatible with each other for a variety of reasons, though on a few points we do refer to some of the state level reports like the Irrigation Status report, Water audit reports and the Benchmarking reports.

The analysis was done for the years 2007-08 to 2011-12. Findings are discussed as pre tariff and post tariff in which pre tariff years precede the 2010-13 tariff order and post tariff years imply years after the 2010-13 tariff order was introduced and implemented. Three of five years i.e 2007-08; 08-09 and 09-10 are considered as pre tariff years and 2010-11 and 11-12 as post tariff years. However it is to be noted that the new tariff order became operational only in June 2011 which means that for the year 2010-11 the new tariff order was not applied. There is a need for clarity on this since the trends in the two post tariff years are different.

The nine circles as was observed from the data do cover a wide range of variation across the different kinds of situations in the state. They cover circles that have a very good cost recovery as well as those that have a very poor recovery, they also cover circles with very different composition of water use between industry, domestic water and irrigation sectors and they also cover all the 5 regions of Maharashtra.

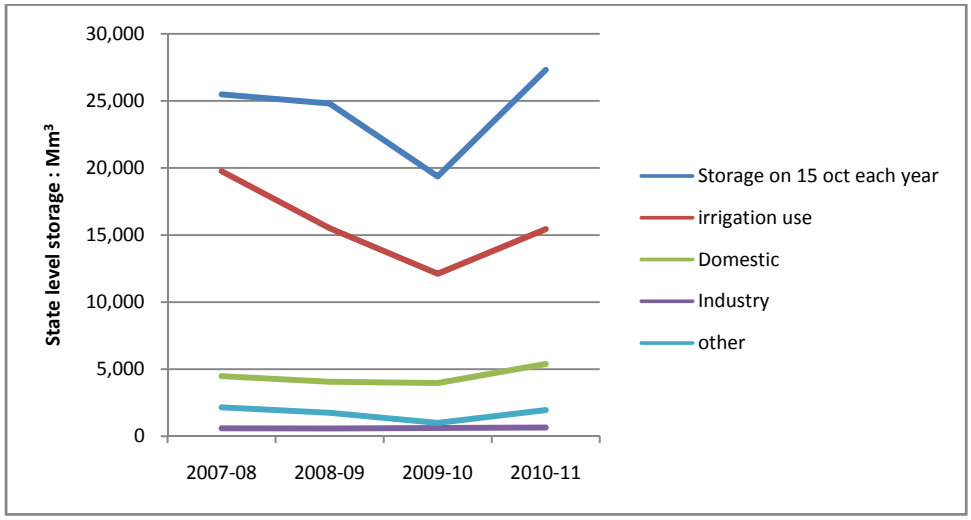
It should be noted here that of the 5 years period 2009-10 was the only year which had low storages in the dams thereby affecting both quantum of use and cost recovery. Both the post tariff years 2010-11 and 11-12 have been good years. Data for the third year of tariff would perhaps show a different trend as 2012-13 was a bad year for Maharashtra.

The report covers the key areas of collection efficiency, effective tariff, and impact on operation and maintenance expenses, matrix and weightage accorded to each of the categories of use to setting tariff and concessions and fines. It gives the key findings and recommendations in each of these areas.

Section 1: Key findings and recommendations

Quantum of water drawn

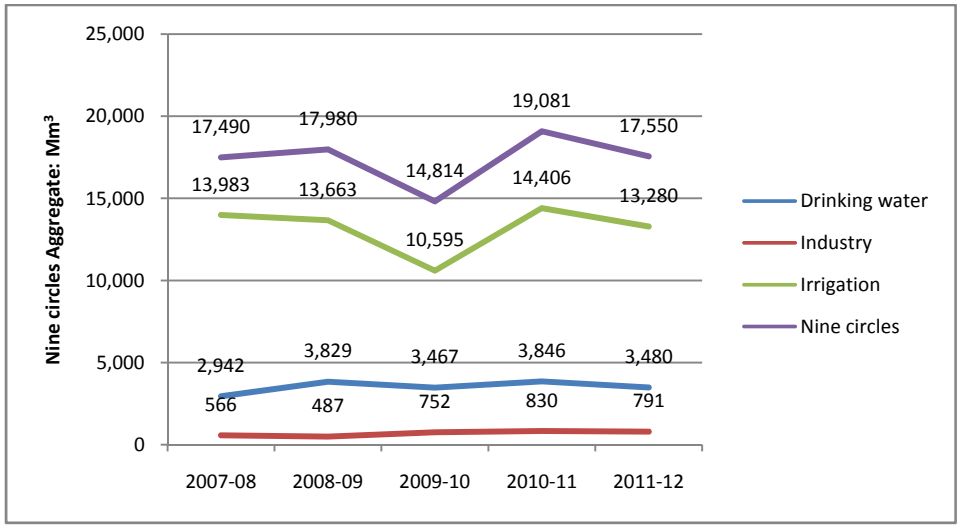
Chart 1: State level data on storage on 15th October and different uses (Mm^3)



Source: Irrigation Status reports from 2007-08 to 2010-11

The chart above shows the state level data on water storage on 15th October each year and against that quantum of water drawn for categories of use. 2009-10 shows a dip in terms of storage of water thereby indicating a bad year. Accordingly a drop is seen in the quantum of water drawn by all the uses except industry which shows a slight increase. A very similar trend is seen in the quantum of water drawn for the nine circles. This points out firstly that the nine circles selected for the study broadly represent the state and thus some conclusions could be drawn based on this data and secondly that how good or bad a year is also determines the use of water and thereby the collection efficiency.

Chart 2: Quantum of water drawn in nine circles (Mm^3)



Industry has had a stable increase and does not show any drops as against domestic water and irrigation. Its significant to point out that in a bad year of 2009-10 too there was no drop in the quantum of water drawn by industry.

Effective tariff

Domestic water and Industry

One of the parameters for assessing the impact of tariff is to see whether levy of tariff is broadly in line with the tariff order. For industry and domestic water differential tariff was introduced. In the case of domestic water differential tariff was applied for source of supply and whether the utility was GP, ULB or Municipal Corporation. In Industry differential tariff was introduced for types of industry, source of supply and season of water use. A comparison of the old and new tariff order shows that overall tariffs have been lowered across the three sectors with varying degrees. It was not possible to match differential tariffs because of lack of data.

Below are two tables which show the per unit rate levied for water.

Table 1: Effective tariff in Rs/$10m^3$ for Domestic water and Industry –Tariff levied and collected for nine circles

Category of use	2007-08		2008-09		2009-10		2010-11		2011-12	
	levy	coll	levy	coll	levy	coll	levy	coll	levy	coll
Domestic	4.77	3.80	8.92	6.16	6.76	5.88	5.02	4.05	5.39	5.00
Industry	40.04	36.07	54.82	49.88	36.42	34.70	32.74	31.42	34.34	27.13

Firstly it is evident from the table that tariffs have gone down for both domestic water and industry. In 2008-09 levy of tariff for industry was as high as Rs 54/10 m^3 and gradually the levied tariff has gone

down from there to Rs. 34/10m^3 in 10-11 and Rs. 27 in 11-12. For domestic water this was Rs 8.92 as against Rs 5.02 and 5.39 in 10-11 and 11-12.

Our data for domestic water shows that over 50% of the water across all the five years has been lifted directly from canal/river. The rate for this is higher than that for drawing water from the reservoir or using water from your own source. As per the new tariff order the rate for river/canal lifts for 10m^3 of water is Rs 2.64, Rs. 3.15 and Rs 4.20 for GPs, ULBs and Municipalities respectively. The rate levied for domestic water for 10-11 and 11-12 is around Rs 5/10m^3. One can broadly say that this is in line with the tariff order for domestic use.

Most of the water drawn by industry has been for process industry and largely lifted from canal or river. The basic tariff for directly lifting from reservoir is Rs 32/10m^3 and Rs 64/10m^3 for lifting from canal or river in the post tariff years. We would assume that the applicable tariff for industry would thus be to the order of Rs 64/10m^3 in the post tariff years. However the rate for both years is almost half of that at Rs 32 and Rs 27/10 m^3. This indicates that either industry has availed of concessions or simply that they have not been charged appropriately. This cannot be further assessed as the data provided for tariff levied is not season and source wise. The present tariff order has introduced differential tariff for both source of water drawn and season in which water is drawn. If data for tariff levied was given in a similar manner we could have done the assessment of effective tariff levied. .

Agriculture

Agriculture has both an area based tariff structure as well as a volumetric one. The area based structure is a detailed one based on different crops and seasons while the volumetric is based on the quantum of water used.

The older tariff order had a higher rate and for volumetric supply this was 47, 71 and Rs 1.44 ps/ m^3 for Kharif, Rabi and Hot weather respectively. The post tariff rates were 3, 6, 9 ps/ m^3 for Kharif, Rabi and HW respectively. In both cases a local cess of 20% is added. The collection has been more or less consistent over the 5 years. However the tariff levied does match with the tariff order broadly.

Table 2: Effective tariff for irrigation (ps/m^3) Tariff levied and collected

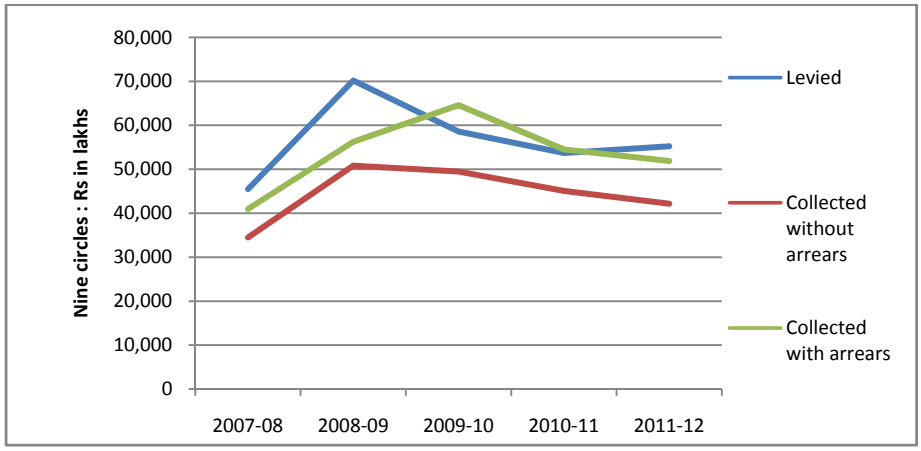
	2007-08		2008-09		2009-10		2010-11		2011-12	
Irrigation	**levy**	**coll**	**levy**	**coll**	**levy**	**coll**	**levy**	**coll**	**levy**	**coll**
Area based supply	0.06	0.02	0.07	0.02	0.07	0.03	0.05	0.02	0.07	0.03
Volumetric supply	0.05	0.02	0.04	0.01	0.08	0.03	0.05	0.03	0.06	0.02
Aggregate irrigation	0.06	0.02	0.07	0.02	0.07	0.03	0.05	0.02	0.07	0.02

Collection Efficiency

Levy of tariff and collection

It has been customary to exclude arrears while considering collection efficiency and consider collection efficiency solely on the basis of current levies and current collection. However, arrears also have an element of deferred payments. Arrears can be considered to be composed of a deferred payment element and an element of non-payment. The former needs to be considered in the context of collection efficiency and the latter excluded. If non-payment element dominates, then arrears would have a tendency to grow in size, while if routine deferred payment element dominates there would be a tendency for a stable proportion of arrears to levies and there would be a tendency for arrears to rise systematically. It is our suggestion that the arrears collection should be treated as deferred payments. In this context, our key finding here has been that overall collection has been close to tariff levied especially by considering arrears as delayed payments in the post tariff years. Here we will look at the actual tariff levy and collection both with and without arrears and the collection efficiency with and without arrears to understand the performance of collection against the tariff levied.

Chart 3: Tariff levied and collected with and without arrears for nine circles (Rs lakhs)



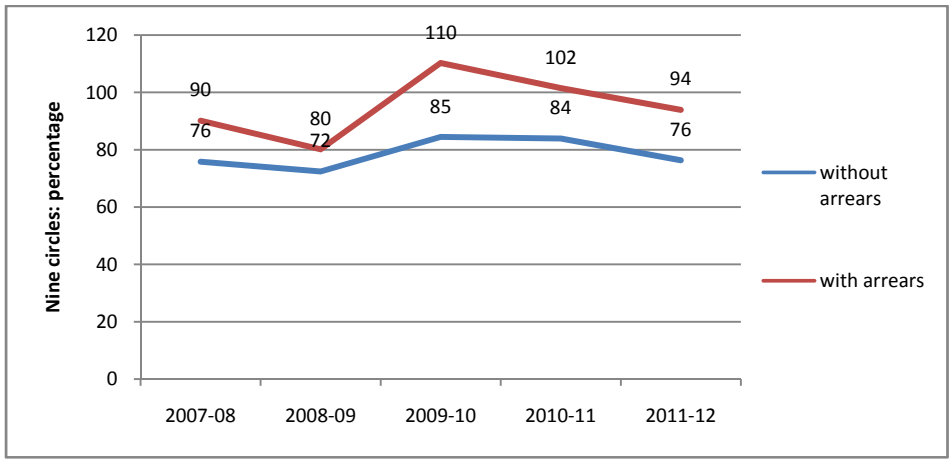
The chart above gives us a picture of the actual levy of tariff and the collection against it for the nine circles under study. Overall the tariff levy has gone down over the years and this is also indicative of the lowering in tariff rates. We find that the gap between levy and collection has reduced in 2010-11 but again grown in the tariff year 2011-12. This perhaps could be explained through the slight reduction in quantum of water drawn by industry and drinking water, both categories which are major contributors to tariff collection. The tariff levy in 2011-12 is higher than the one in 2010-11 despite the partial reduction in water drawn in 2011-12.

However the key message is that with arrears collection improves considerably and the gap almost closes in as is evident in 2010-11.

The chart below reiterates the same message by showing that collection efficiency has on the whole improved in the post tariff years and if arrears are considered as delayed payments the collection

efficiency improves considerably. In 2010-11 this is 102% with arrears, an improvement over 84% without considering arrears and in 2011-12 it is 94% over 76% without the arrears.

Chart 4: Collection efficiency with and without arrears for nine circles (%)



The two charts below for category wise collection efficiency show us that irrigation benefits most from considering arrears as delayed payments.

Chart 5: Category wise collection efficiency for nine circles without arrears (%)

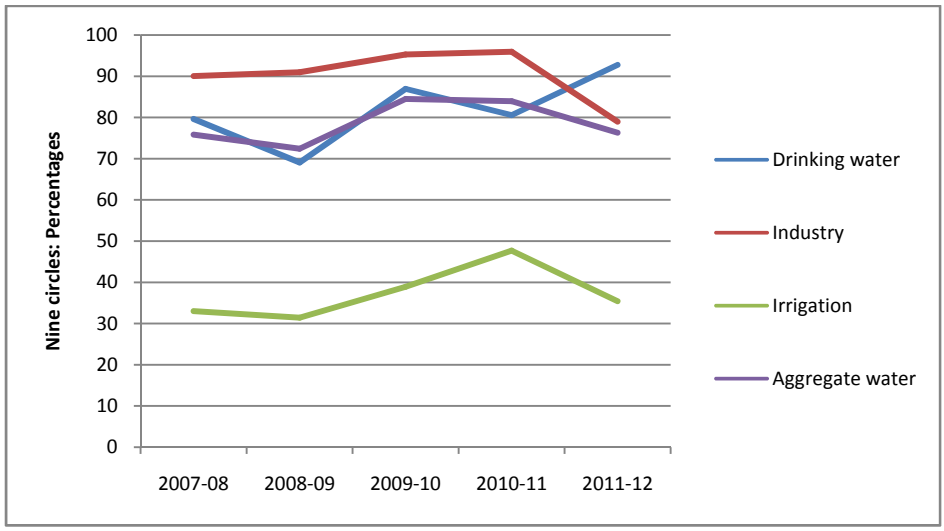
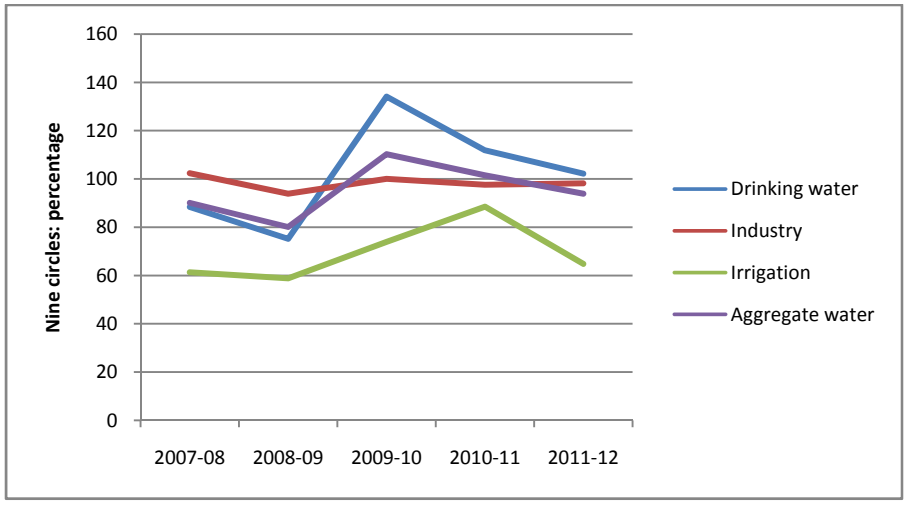


Chart 6: Category wise collection efficiency for nine circles with arrears



Another way of exercising control over whether arrears are deferred payments or non-payments (defaults) is to record arrears and collection according to age. It is not clear whether arrears data are being maintained in this manner, though they are certainly not being reported in this manner.

Recommendation: i) Assessment of whether collection meets levied tariffs should include deferred payment components of arrears. At present, broad assessment based on adding arrears collection to current collection is recommended. ii) Arrears need to be maintained according to age and need to be reported on this basis and analysed to assess the deferred payment component.

Calculation of Arrears

From the data provided to us we did a quick comparison of the levy of arrears with calculated amounts of arrears. For each year the current year's arrears should match the previous year's arrears less arrears collected plus new arrears created (current levied less current collection). The table below presents the arrears calculated on this basis against the actual arrears booked. The table shows that booked arrears do not match and the divergence is considerable. For example for the year 2010-11 the arrears should have been Rs 66, 505 lakhs however the actual arrears booked were Rs 54,673 lakhs and for the year 2009-10 the arrears should have been Rs 55,287 lakhs however the arrears booked were Rs 67,317 lakhs. The difference is considerable and it will affect the collection efficiency considerably. It was not very clear why this was the case. The state level data however, does not have this discrepancy.

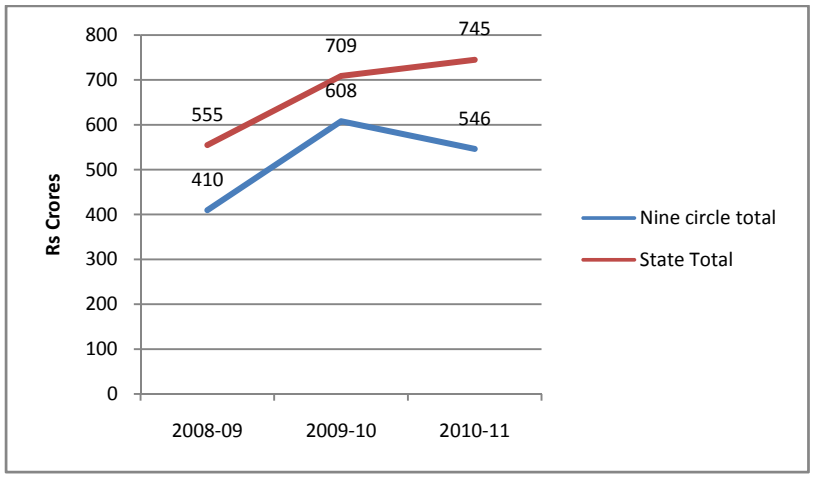
Table 3: Arrears calculated versus booked (Rs lakhs)

	2008-09		2009-10		2010-11		2011-12	
Category of use	Calc	Booked	Calc	Booked	Calc	Booked	Calc	Booked
Drinking water	20,917	13,495	5,491	22,373	20,086	12,865	12,460	9,687
Industry	10,800	13,480	13,464	8,061	8,712	6,234	6,719	15,908
Irrigation	32,365	34,315	36,332	36,883	37,707	35,574	38,852	36,040
Total	64,081	61,290	55,287	67,317	66,505	54,673	58,031	61,634

Recommendation: Arrears booked in a particular year should be equal to previous year's booked arrears, less arrears collected during that year plus new arrears created (current levied tariff less current collection).

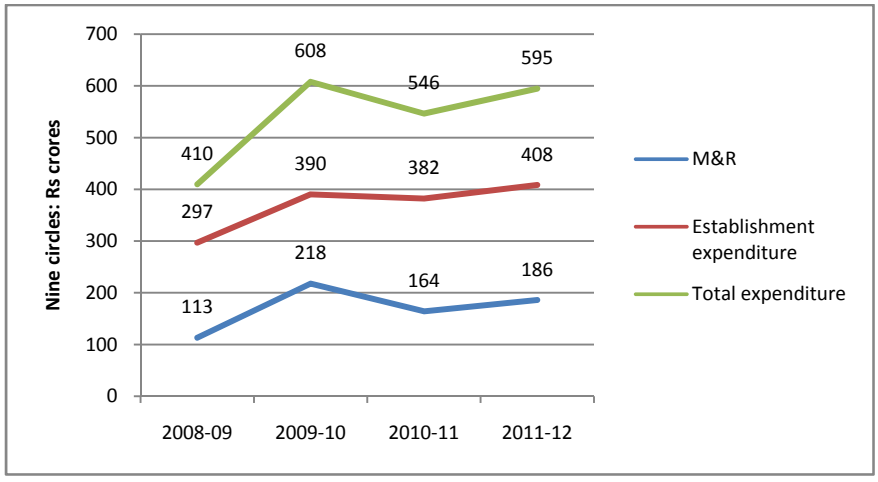
Operation and Maintenance

Chart 7: Comparison of total expenditure State and nine circles (Rs crores)



The chart below gives a picture of the expenditure incurred by the WRD on nine circles for a) M&R works that include head works and canal works and b) establishment costs. The total expenditure incurred on both these becomes the operation and maintenance cost

Chart 8: Expenditure for Nine circles (Rs crores)



The above chart shows that the expenditure incurred on establishment is much higher than that incurred on the M&R costs. The chart below shows that expenditure on establishment has been close to 70% of the total expenditure except in 2009-10 when it was 64%. In most of the comments on the criteria this has been pointed out to MWRRA. If the new criteria decide to include the 6th pay revision in the establishment costs this figure would go up considerably.

We suggest that there be a review of establishment costs for possibilities of its rationalisation. Similarly M&R costs also call for a review, especially since WALMI report based on which these norms are worked out had also stated in its report the inadequacy of using the few projects that it had studied as a baseline. For the current study we were not able to review the adequacy of the M&R norms for meeting costs as there was insufficient data.

Chart 9: Percentage of M&R and establishment expenditure to total expenditure

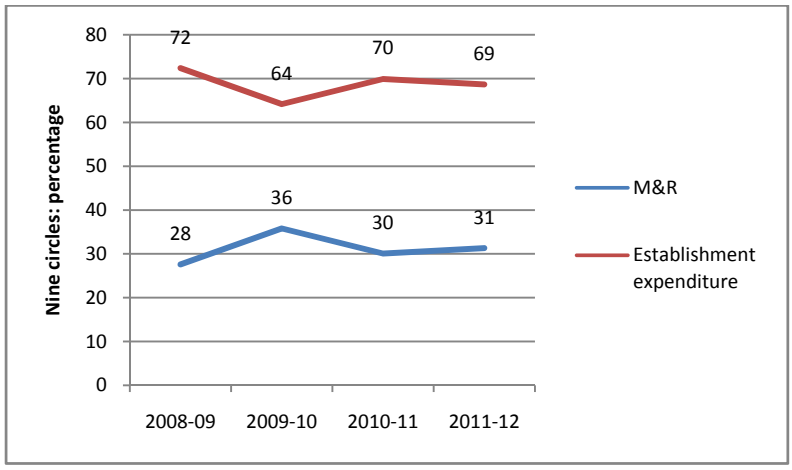
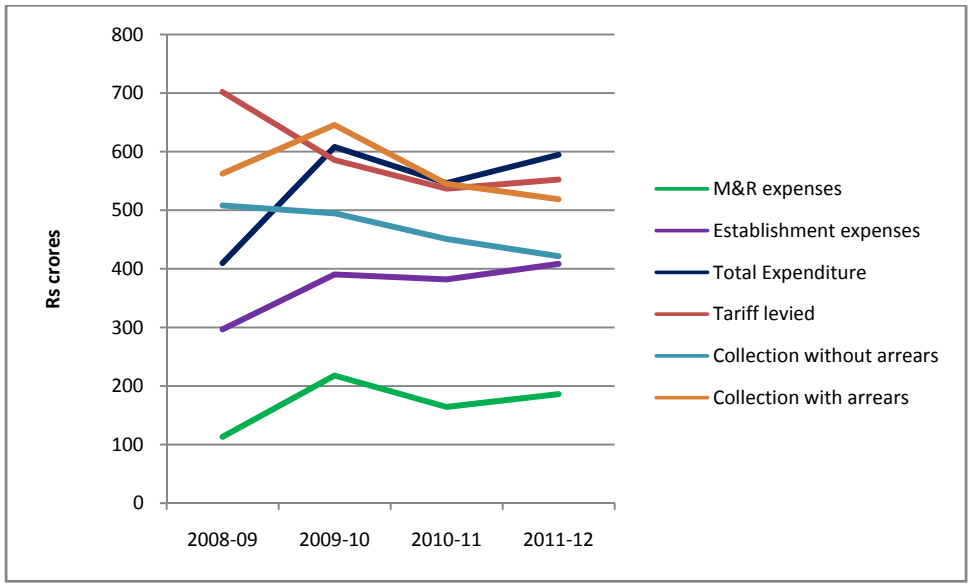


Chart 10: Expenditure, Levy and collection with and without arrears for Nine circles (Rs crores)

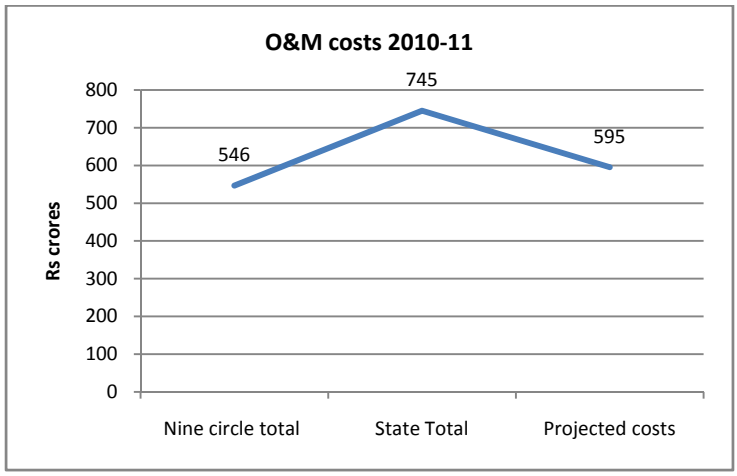


The above chart shows us that in the year 2010-11 the total expenditure was 545 crores and the levy of tariff was 537 crores which is very close to the expenditure. The collection without arrears for that year was 451 crores and with arrears was 545 crores which is as much as the expense. Whether this trend is true for the entire state will be known if the data for the entire state is made available**. The key message however is that expenses are closely matching with tariff levy and collection with arrears.**

We did a quick comparison to see if the expenses for the State match up with the expenses that were projected in the tariff proposal for 2010-13. The chart below shows us the projected expenses, actual expenses and the expenses for nine circles. The projected costs which were Rs 595 crores fall short of the actual expenses incurred by the state which was 745 crores as per the Irrigation Status report 2010-11.

Recommendations: i) In view of the fact that projections were based broadly on the norms provided by WALMI, tariffs should be based on those norms or reasonable modification of those provisions rather than on actual costs. It should be the duty of the government to rationalise operations so as to match cost with these norms or to shoulder the difference as a subsidy. ii) The difference between O&M based on norms and actual expenditure is likely to grow once benefits of the sixth pay commission become operational and routinised. Any changes in norms of O&M expenses should not be carried out without an independent study and stakeholder consultation.

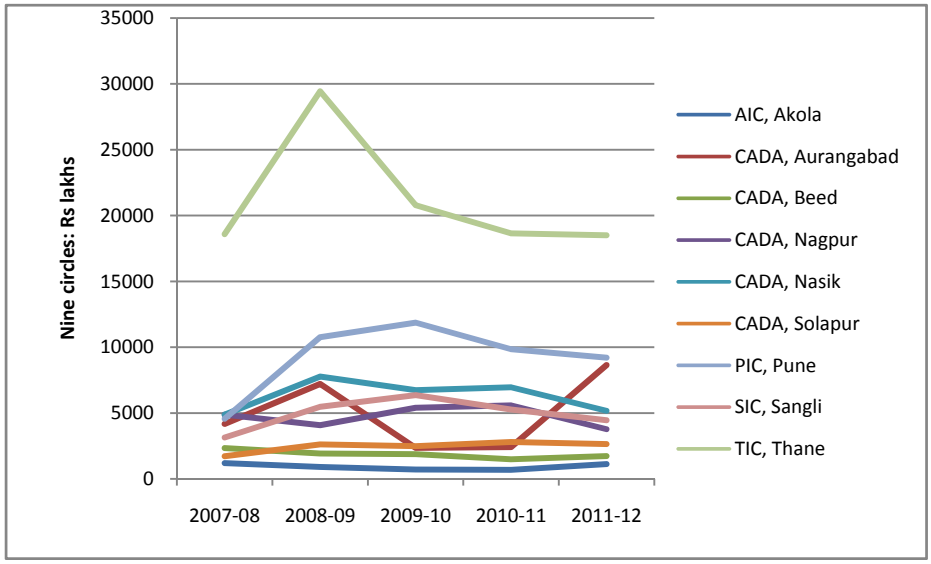
Chart 11: Projected O&M costs and O&M costs for nine circles and the state



Tariff levied and collected: Variations across circles

The key finding here is that there is a very wide variation across circles in terms of tariff levied and collection and collection efficiency.

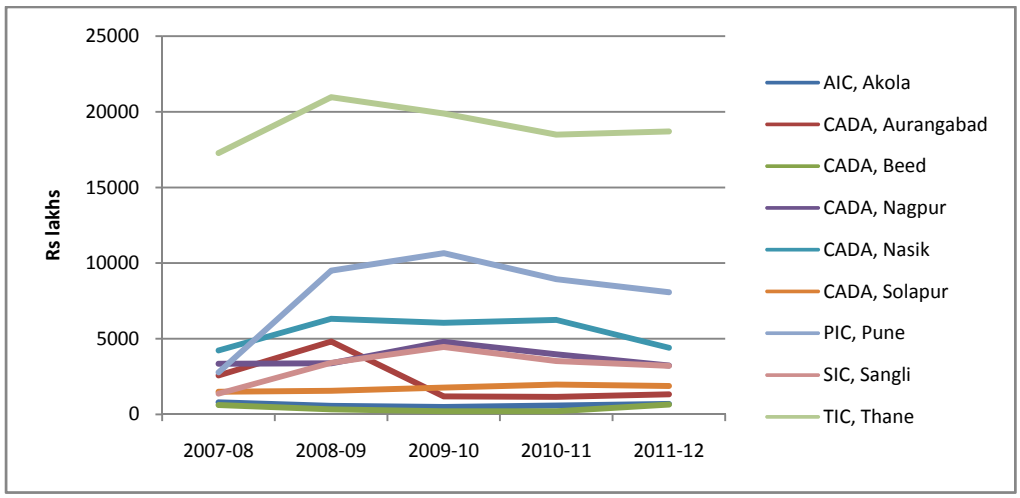
Chart 12: Circle wise variations in tariff levied (Rs Lakhs) for nine circles



The chart above shows the wide variation across the nine circles with Thane, Akola and Beed being the outliers. Thane has the highest levy of tariff and Akola the lowest and the rest are more or less in between.

A similar trend in collection can be seen in the chart below. Thane circle is the highest user of water for industry and domestic water both categories which have a higher tariff and where collection efficiency is also very high.

Chart 13: Circle wise variations in tariff collected (Rs Lakhs)



Collection efficiency

The two charts below show the collection efficiency across circles both with and without arrears. Thereby reiterating the trend that Thane, Akola, Beed are the outliers and that collection efficiency improves with consideration of arrears.

Chart 14: Circle wise collection efficiency without arrears for nine circles (%)

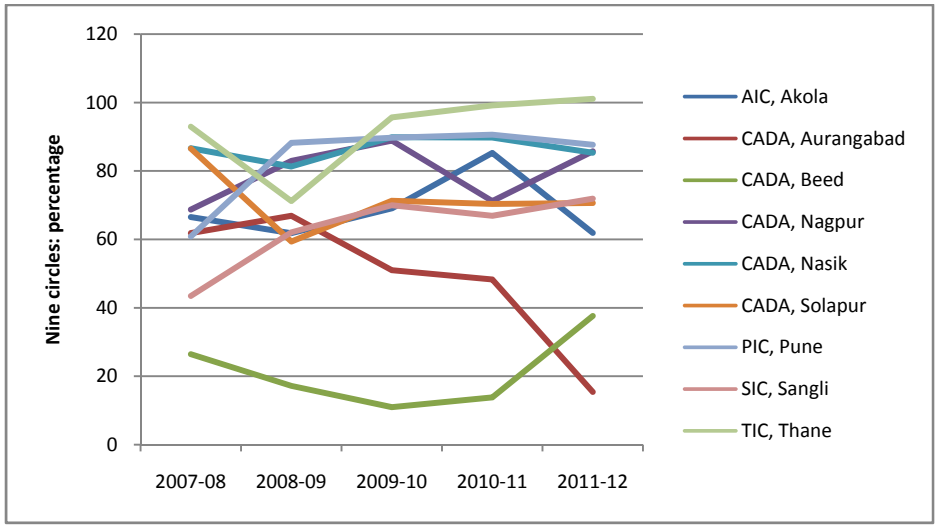
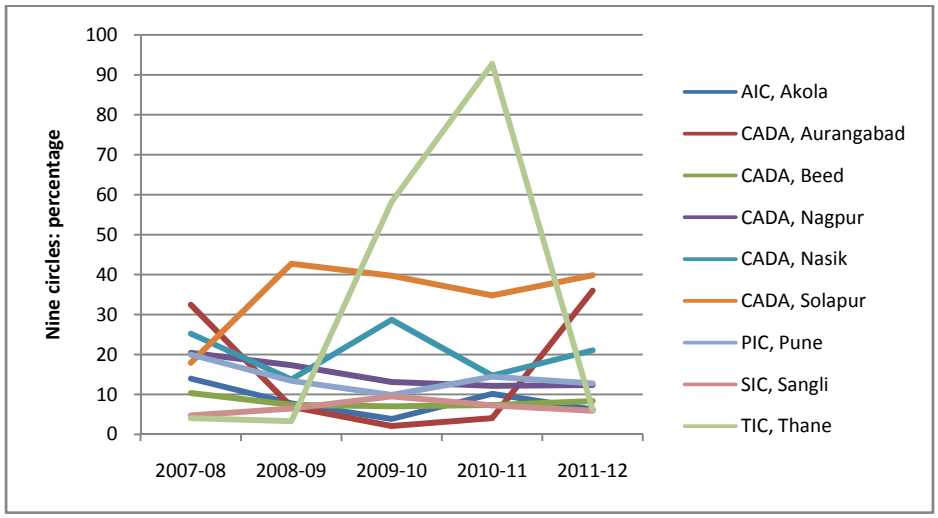


Chart 15: Circle wise collection efficiency with arrears for nine circles (%)



Thane is the lowest user of water for irrigation and highest for domestic and industry. Akola and Beed are from two backward regions of Vidarbha and Marathwada where cost recovery is bound to be low. On the whole it can be clearly seen that collection efficiency is related to the degree of backwardness. The low proportion of domestic water and industry water use indicates a low degree of urbanisation and a low level of industrial development, which is consistent with backwardness. There has been some thinking about penalising circles with lower efficiencies. However, given the correlation between backwardness and lower collection efficiency, we would strongly recommend that no such penalisation should take place, otherwise it would mean penalising backward regions for being backward. Instead we would recommend that the effective solution to improve efficiency in these regions is to target backwardness and carry out developmental measures in these regions with the highest priority.

Tariff levied and O&M expenses: Variations across circles

The following table/chart (s) shows the variation of tariff levied against the O&M expenses for different circles. As is evident there is great variation in how tariff levied matches up to O&M expenses.

Table 4: Circle wise expenditure, tariff levied and collection with and without arrears (Rs crores)

	2010-11				2011-12			
Circles	Exp	Levy	Collection without arrears	Collection with arrears	Exp	Levy	Collection without arrears	Collection with arrears
AIC, Akola	26.99	6.80	5.80	7.75	27.67	11.16	6.91	8.05
CADA, Aurangabad	55.22	24.04	11.60	14.93	55.21	86.45	13.29	61.54
CADA, Beed	54.43	14.93	2.06	8.84	41.84	17.37	6.53	14.73
CADA, Nagpur	103.91	55.81	39.72	44.18	103.64	37.69	32.30	37.03
CADA, Nasik	104.66	69.55	62.42	67.01	108.55	51.63	44.05	50.89
CADA, Solapur	60.84	28.04	19.73	26.26	61.94	26.50	18.72	27.00
PIC, Pune	68.76	98.50	89.27	95.13	88.70	92.02	80.69	87.32
SIC, Sangli	48.07	52.73	35.27	47.97	61.39	44.61	32.07	42.48
TIC, Thane	23.54	186.48	184.91	232.93	45.67	185.02	187.04	189.81
Total	546.41	536.88	450.77	545.00	594.62	552.44	421.59	518.86

Nevertheless it is also important to note that tariff levied at an aggregate level for the nine circles does match broadly with the O&M expenses (at least those according to the specified norms?). This is because the methodology for working out tariffs based on the matrix has relevance at the state level and the state level compositions between industry, domestic and irrigation water use. The matrix will not work well for any lower subdivision, like a circle, division, basin or sub basin because it would lose the aspect of cross subsidy implicit in the assumptions of the matrix. We would therefore strongly recommend that so long as the tariffs are based on the matrix method adopted in the criteria, there should a be a single tariff structure for the entire state.

Recommendation: Rather than going in for separate tariff orders for basin or sub-basin level it would be important to continue with the single state level tariff.

Matrix and weightages

If the tariff rates have been correctly worked out on the basis of the matrix, then the final allocation of costs between industry, domestic water and agriculture should correspond to the proportions in the matrix. The finding here is that apportionment of costs in comparison to the matrix has been higher to domestic water and lower to industry and in line with the matrix to irrigation.

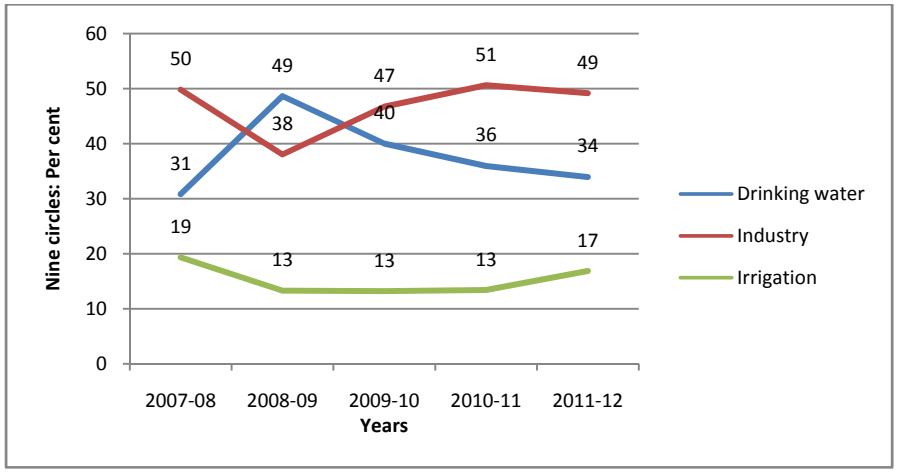
Below is the matrix as outlined in the criteria for bulk water tariff 2010-13

Table 5: Matrix outlined in bulk water tariff 2010-13

Attributes	Agriculture	Domestic	Industry
Affordability	15	10	75
Accessibility	30	25	45
Quantity and timeliness	30	25	45
% tariff to be levied	21	16	63
Effective tariff%	16	23	56

Effective tariff is assuming that 15% of domestic water is used for industry and 15% of industry use is for domestic. This changes the % allocation to 23 and 56% instead of the 16 and 66% for domestic and industry respectively. Effective tariff for Irrigation becomes 16% due to the 5% subsidy on wells irrigation. But the actual data shows a different picture as can be seen in the chart below

Chart 16: Composition of tariff levied in nine circles (%)



The chart shows that levy of tariff for domestic water was 36% (or effective levy of 38%) in 10-11 as against the allocation in the matrix which is 16% of total tariff levied (or effective levy of 23% of the total tariff levied). As for industry the levy as per the matrix should have been 66% (or effective levy 56%) but for 10-11 the actual levy is 51% (or effective levy of 49%) . Thus domestic water has been levied a substantially higher percentage and industry substantially lower in comparison to the matrix. In the post tariff years Irrigation is 13% and 17% in 10-11 and 11-12 respectively which is closer to the 16% fixed as per the matrix.

If we look at the collection figures in the table below we do see that collection for both industry and domestic water has been good whereas for irrigation it has been on the lower side and thus there is a case to lower the weightage of agriculture comparatively.

Table 6: Composition of tariff collected for nine circles (%)

	2007-08	2008-09	2009-10	2010-11	2011-12
Drinking water	32.4	46.4	41.2	34.5	41.3
Industry	59.2	47.8	52.7	57.9	50.9
Irrigation	8.4	5.8	6.1	7.6	7.8
Total	100	100	100	100	100

The data substantiates our earlier suggestions on criteria that if the methodology was to be based on the proposed matrix then the weightages for Agriculture should be lower, 10, 20 and 25 for affordability, accessibility and quantity /timeliness respectively. We had pointed out then that the index for affordability of irrigation water for the farmers should be lower than that for drinking water for the Gram Panchayats or Municipalities than the people living in the large Cities. Similarly the index for ease of access in case of majority of farmers who lie in the middle or the tail ends of irrigation commands should be much lower than that of users in the other sectors. Only in the head reach of irrigation commands can there be considered to be better parity in this respect. The situation is again the same in respect of quantity and timeliness, where the index of quantity and timeliness for domestic water which is protected by higher policy priority and for industry where the water drawn can be seen to be steady and even rising in bad years though irrigation is severely curtailed.

Water for agriculture is also likely to be more affected by variations in monsoon and is likely to be allocated less than normal entitlement, once in two years in case of projects designed with 50 % dependability and once in four years in case of the Projects designed with 75 % dependability. In brief, it means that for all three parameters, agriculture should have the lowest relative weightage followed by domestic and industry in that order.

Recommendation: Assuming that the tariff will be worked out on a similar matrix and weightage methodology, we would recommend a reconsideration of the weightage and propose the following weightage for the next round of tariff.

Table 7: Recommended weightages for 2013-16

Criteria	Agriculture	Domestic	Industry
Affordability	10	15	75
Accessibility	20	25	55
Quantity and timeliness	25	30	45
% tariff to be levied	15	20	65
Effective tariff%	15	27	58

However, we would emphasise that the methodology of working out the tariff needs to be reconsidered to ensure that the aggregate tariffs levied actually correspond to the targeted proportions of cost sharing. This is especially important since the present cost sharing actually lowers the cost to the industry sector that has the greatest index for affordability.

Charging of wells in command areas

Closely linked to the question of weightages is the granting of subsidies to well owners. The new tariff order takes note of the revised policy on charging of wells in command areas. As per the new policy wells in the command areas will not be levied any charge and that a 5% subsidy would be granted by the government to pay off this charge (check ref)

It is well known that major quantum of water in the wells within the command of irrigation projects, is from seepage and leakages from the canals and deep percolation from the irrigated fields. In Maharashtra, there is no restriction on the quantum of water allocated to the farmer for irrigating sanctioned crop area or in other words, the water quantity to be supplied in each rotation is not fixed. This allows the farmers to draw more water than the consumptive use by the crops and allows the same to be recharged in the ground or to irrigate additional area often in connivance with the Canal Inspector. There is also the practice of diverting canal water directly into wells in the command. This water is also pumped and supplied to the crops to meet the critical stages of sensitive crops and has higher value addition. The crops grown on wells are usually high value crops with high profit like sugarcane, vegetables and fruits. They are thus the section of farmers in the irrigated command who are making high value additions, have a capacity to pay and are otherwise well off as compared to the other farmers. It is clearly seen from the Reports on Water Auditing of Irrigation Projects in Maharashtra, published by the GoM every year that the area irrigated on wells in command areas is rapidly increasing in the last 3 to 4 years compared to the area irrigated on canals. At present since wells are not charged it allows the farmers to demand water from canal for only a small nominal or notional area, where the charge is paid by well owners as well as non-well owners and then draw water into wells at will without paying for it. This is a variety of free riding. It is therefore important to levy a sufficient charge on wells in the command areas to curb this free riding tendency. We therefore request you to bring this fact to the notice of GoM and request the Government to review the decision taken in this respect and consider alternative methods of providing subsidy for farmers.

Given the present tariff structure which allocates 21% of the cost, we find it reasonable to provide a subsidy for irrigation. However we would suggest that the wells should be suitably charged and the subsidy should be for the sector as a whole, This would remove the pernicious nature of the present subsidy that actually encourages and further subsidises free riding.

Recommendation: i) Remove the subsidy on wells and restore charge on wells within the command. ii) If the government does wish to provide a subsidy, it is recommended that an overall subsidy for the irrigation sector be provided. iii) If the final weightage of irrigation is to be retained at 21%, it is recommended that the amount of the subsidy of 5% be provided for irrigation as a whole. iv) If the new weightages suggested above are accepted, then the cost allocation for irrigation already comes down to 15% and there is no need for further subsidy if parity with present cost allocation is to be maintained. However, if the government does wish to provide a subsidy with the newly suggested weightages, it is recommended that it be distributed between irrigation and domestic water sectors in the proportion of 3:2 so that both the needy sectors receive the subsidy.

Concessions and fines

Concessions and fines are an important part of the tariff order (10-13). Different measures have been introduced to both incentivize and penalize actions with reference to water use and in the case of agriculture, with reference to the status of the irrigator. Data on concessions and fines is very poorly maintained and there was practically no data available in the initial data sets. After concerted and persistent efforts on part of the MWRRA sketchy, practically unstructured and partly anecdotal data could be collected and that data points to a very limited implementation of both concessions and fines. It is this sketchy data and its results that are presented below. There is a need to assess the various reasons for the poor implementation of this major component of the tariff order.

Agriculture

Concessions in agriculture were an important demand raised by civil society groups and as a response to that various concessions were granted in the tariff order 2010-13. The data shows that concessions have been implemented haphazardly; while some concessions are given in some circles, the same may figure nowhere in other circles even though they would be equally applicable there as well. This has to be kept in mind in what follows. Concessions have been provided for a range of farmers belonging to less than 2 ha category in all the commands to those owning less than 4 ha in Vidarbha region. In some places concessions were also provided to some farmers moving over to drip irrigation methods, raising horticulture gardens etc. No tariff would be provided for tribals who come under the commands of projects under the tribal sub plan projects and the list is long.

Data provided by MWRRA shows the following

Table 8: Concessions in tariff for year 2010-11 and 11-12

Concessions	2010-11	2011-12
Area covered under 2 ha (hectares)	2217	9918
Amount of concession (Rs lakhs)	7.28	4.86
Area covered under 4 ha in Naxal areas/PM package areas (hectares)	24936	14343
Amount of concession (Rs lakhs)	52	27.44
New methods of irrigation (area in hectares)	736	668
Amount of concession (Rs lakhs)	0.59	0.72
Project affected persons (area ha)	0	12.93
Amount of concession (Rs lakhs)	0	0.84
Total area covered under concession (hectares)	27889	24941.93
Total amount given under concession(Rs lakhs)	59.87	33.86

The table above gives details of the data on concessions which are awarded for a very few categories. For most other categories there is either no concession given or that it was not applicable.

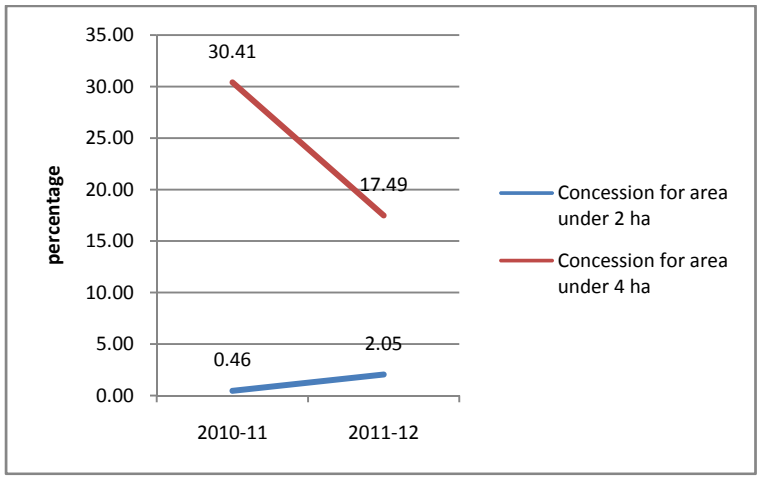
The total area covered under the different concessions was 27889 ha in 2010-11 and 24941 ha in 2011-12 and the total amount given in concession was Rs 59.87 lakhs and 33.86 lakhs in 10-11 and 11-12 respectively.

There is a mention of concessions awarded to paddy areas in Vidarbha region in Chandrapur circle, however there is no record of amounts and area. The same is true for Konkan region for concessions for under 2 ha lands.

As per the Public notice issued by the WRD inviting comments on the 2010-13 tariff proposal, of the total irrigated area in the state (canal+lift), 0.82 lakh ha can be classified as area eligible for concession under 4 ha in PM package districts and naxalite areas of the state. The area under 2 ha eligible for concession is 4.84 lakh ha (ref). Using these figures the concessions awarded for these categories can be seen in the graph below.

While the concession for area under 4 ha has been at 30% in 2010-11 it has dropped to 17% in 11-12. Concessions warded to under 2 ha are however very low at 0.46% and 2.05% in 10-11 and 11-12 respectively.

Chart 17: Concessions for under 2 ha and 4 ha irrigators (% area covered)



This is indicative of a very low level of implementation of concessions for agriculture and calls for remedial action at various levels which are outlined as recommendations below.

As far as fines are concerned too there has been no implementation in the agriculture sector. No fine has been levied based on size of the family as per the MWRRA act. The WUA data for Buldhana circle has answered in the positive for the levy of this fine, but the circle level data does not corroborate this information.

Recommendations for better implementation of concessions and fines in agriculture

Defining the role of the officials at the appropriate levels

One of the most important reasons for the non-implementation of concessions is that no one knows who is eligible for concessions and who is not. There is no defined responsibility regarding how this record would be created. The impression seems to be that those who are eligible for concession have to come forward and claim them. This is patently unfair, because the sections that stand in need of concessions are those who would tend to be poorer, more backward, and less aware and likely not

having sufficient means to prove their eligibility. There is thus a need to create this record and the responsibility should rest squarely with the department.

Recommendation: A list of all irrigators eligible for various concessions in every command area needs to be prepared by an officer dealing with the command area at the appropriate level. (It is suggested that section officers should be the main agency for collecting and recording this information.) This responsibility should rest with the relevant officer mentioned above for all command areas irrespective of whether there is a WUA or not. In areas where there is no WUA it shall be the responsibility of the officers to implement the concessions. In case of area where there are WUAs, it shall be the responsibility of the relevant officer to prepare the record of those eligible for concessions and hand it over to the WUA. It shall be the responsibility of the WUA to implement the concessions and to report on the same to the officer. It should also be the responsibility of the officer to maintain a record of concessions given each year within their jurisdiction and to pass this on to the higher level for compilation.

Concessions for volumetric supply

Since WUAs receive bulk volumetric supply from the department and are free to fix their internal charges, it is important for them to maintain a record of how they are passing on the concessions to the relevant irrigators. The WUAs will be provided the list of irrigators eligible for concession along with the type of concession. It is suggested that the irrigators eligible for concession be provided a concession in tariff in proportion to the concession as specified in the tariff order. This would help maintain the autonomy of the WUA to decide its rates internally and yet offer the applicable concessions to the eligible irrigators in the commands. The officer at the appropriate level has to ensure that the concession actually reaches the concerned farmer.

Awareness regarding concessions

Our field insights substantiated by the present data shows that there is little awareness about the different concessions awarded to irrigators. It would therefore be important to raise awareness around these concessions using different methods. Prominently displaying the available concessions in the WUA offices/section offices or in the village gram panchayat offices, distributing handouts that list these concessions etc could be some suggested tools.

Domestic water and Industry

The data provided on concessions and fines for domestic water and industry has been very minimal.

For domestic category there is no recorded information shared with SOPPECOM in terms of concessions availed. In fact in a few circles it has been mentioned that since the domestic water utilities could not recycle or treat their water, no concessions were applied for. There were only three circles where there is data for fines levied for using 10% less or more of the agreed quota. In 2010-11 Rs 6.12 lakhs and in 11-12 Rs 65.09 lakhs have been collected from the levy of this fine.

Table 9: Domestic water: Fine for 10% more or less use by utilities

Circles	2010-11 (Rs lakhs)	2011-12 (Rs lakhs)
Akola	2.2	54.65
Buldhana	2.25	10.44
Pune	1.67	0
Total	6.12	65.09

For Industry only Pune circle shows a fine of Rs 1.57 lakhs for use of less or more than 10% of quota.

Either way this points to both a lack of implementation and/or a lack of record maintenance and this has to improve if concessions and fines are to be levied on different categories.

There are various concessions and penal actions proposed for both these categories of use, however there is no mention of who within the WRD needs to implement this. Similarly there is no process for ongoing monitoring in terms of pollution in water bodies, setting up of STPs, recycling of 20% of water etc. Although MPCB has been mentioned in different places their role in monitoring and reporting needs to be clearly spelled out.

Recommendation

Defining roles

An appropriate officer from within the WRD has to ensure that all the concessions and fines are worked out well in advance of the billing cycle.

Monitoring and reporting

The process of monitoring, who would do it and how it would be reported also needs to be clearly spelled out. MPCB will have to play a significant role in terms of monitoring water quality and prepare its report for the WRD well before billing takes place. For example before availing of rebates or levying of fines for water quality MPCB will have to provide an authorized report. As per the tariff proposal 23 municipal corporations were to submit its implementation program for STPs by May 2013 there is no mention whether this has happened and if yes or no how action would be determined

Accounting processes

i) Maintaining record of concessions and fines:

This is a more general recommendation for all the three categories of use. A separate mention of tariff for quantum of water used, concessions applied (type and amount), fines collected (types and amount) and the final bill. Records of all these categories will have to be separately noted. Below is a suggested conceptual format for recording of fines and concessions along with the tariff and the final levy after taking into consideration fines and concessions.

Table 10: Suggested format for maintaining records of concessions and fines

Quantum of water used	Full Tariff applicable	Type of Concession applied	Concession amount	Type of fine	Fine amount	Final billed amount

ii) Maintaining record of arrears

Arrears need to be recorded in a systematic manner. It is important here to maintain a record of arrears according to age.

In conclusion

The impacts and the recommendations made here are limited by two factors, i) the assumptions of the framework of the 2010-13 tariff criteria and ii) the data limitations. As has been suggested in the opening para, the limitation related to the short term nature of the impact assessment and the recommendations should be taken care of by the process of civil society interaction to evolve a broad consensus around not only tariff but a more comprehensive framework for the management of water use, access and allocation within the water sector. It is also limited by the data. Availability of data maintained in a consistent and systematic format would be have made assessment of impact of tariff on irrigation performance and other indicators.

Secondly, it is suggested that the criteria for 2013-16 should be given a chance to operate fully along with their structure of concessions. For this it is important to see to it on an annual basis if not more frequently that its provisions are being adhered to in practice and that the overall cost sharing actually matches what the allocation matrix requires.

Thirdly, this is not possible unless we have a data collection and reporting structure that is consistent and has a sufficiently common degree of resolution. For this there is a need to review the entire reporting structure, not only relating to tariffs and collection but also to the physical performance of the system and bring them together into a common data framework so that data can be easily and consistently ported across different levels and divisions to allow for meaningful analysis. If the criteria for 2013-16 are sufficiently accurately followed in practice and if a consistent data structure with adequate resolution for routine reporting is pursued, we have a very good opportunity to assess what is actually happening within the water sector.

<table>
<tr><th>Key findings</th><th>Recommendations</th></tr>
<tr><td>Tariff rate
It was not possible to do a very accurate assessment of whether or not tariff is levied as per the order or not due to lack of data on season, source and utility wise levy of tariff.</td><td>New tariff structure is based on source and season for irrigation, source, season and type of industry for industry and on source and utility for domestic water. For a better assessment of whether tariff is levied as per the tariff order or not it would be useful to provide data on tariff levied as per different variables mentioned in the tariff order in the different categories of use</td></tr>
<tr><td>Collection efficiency
Overall collection efficiency has not improved markedly with the lowering of tariff in the post tariff years. This needs to be understood</td><td>It is not clear why the drop in collection efficiency is seen in 11-12. It needs to be seen if this is due to concessions or fines, the data for which needs to be maintained far more systematically as mentioned later.</td></tr>
<tr><td>Arrears collection efficiency improves considerably with a consideration of arrears</td><td>a) Assessment of whether collection meets levied tariffs should include deferred payment components of arrears. At present, broad assessment based on adding arrears collection to current collection is recommended.
b) Arrears need to be maintained according to age and need to be reported on this basis and analysed to assess the deferred payment component.
c) Arrears booked in a particular year should be equal to previous year’s booked arrears, less arrears collected during that year plus new arrears created (current levied tariff less current collection).</td></tr>
<tr><td>Operation and Maintenance
In 2011-12 the expenses are higher than the tariff levied, suggesting the need to rationalize the expenses especially the establishment costs</td><td>i) In view of the fact that projections were based broadly on the norms provided by WALMI, tariffs should be based on those norms or reasonable modification of those provisions rather than on actual costs. It should be the duty of the government to rationalise operations so as to match cost with these norms or to shoulder the difference as a subsidy. ii) The difference between O&M based on norms and actual expenditure is likely to grow once benefits of the sixth pay commission become operational and routinised. Any changes in norms of O&M expenses should not be carried out without an independent study and stakeholder consultation.</td></tr>
<tr><td>Single tariff for the state
Cross subsidization is taking place across circles and this is a positive impact of the single tariff for state.</td><td>Rather than going in for separate tariff orders for basin or sub-basin level it would be important to continue with the single state level tariff.</td></tr>
<tr><td>Matrix and weightage
The finding here is that apportionment of costs in comparison to the matrix has been higher to domestic water and lower to industry and in line with the matrix to irrigation.</td><td>Assuming that the tariff will be worked out on a similar matrix and weightage methodology, we would recommend a reconsideration of the weightage and propose the following weightage for the next round of tariff.
Table 7: Recommended weightages for 2013-16
<table>
<tr><th>Criteria</th><th>Agriculture</th><th>Domestic</th><th>Industry</th></tr>
<tr><td>Affordability</td><td>10</td><td>15</td><td>75</td></tr>
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However, we would emphasise that the methodology of working out the tariff needs to be reconsidered to ensure that the aggregate tariffs levied actually correspond to the targeted proportions of cost sharing. This is especially important since the present cost sharing actually lowers the cost to the industry sector that has the greatest index for affordability.</td></tr>
</table>

Subsidy on wells This subsidy has often been a pernicious one which has subsidised the rich at the cost of the poor and led to water concentration in the hands of few.	a) Remove the subsidy on wells and restore charge on wells within the command. b) If the government does wish to provide a subsidy, it is recommended that an overall subsidy for the irrigation sector be provided. c) If the final weightage of irrigation is to be retained at 21%, it is recommended that the amount of the subsidy of 5% be provided for irrigation as a whole. d) If the new weightages suggested above are accepted, then the cost allocation for irrigation already comes down to 15% and there is no need for further subsidy if parity with present cost allocation is to be maintained. However, if the government does wish to provide a subsidy with the newly suggested weightages, it is recommended that it be distributed between irrigation and domestic water sectors in the proportion of 3:2 so that both the needy sectors receive the subsidy.
Concessions and fines Agriculture Lack of awareness regarding eligibility to a concession among irrigators Lack of any monitoring for pollution and meeting other standards in maintaining water quality	***a) Defining the role of the officials at the appropriate levels*** A list of all irrigators eligible for various concessions in every command area needs to be prepared by an officer dealing with the command area at the appropriate level. This responsibility should rest with the relevant officer mentioned above for all command areas irrespective of whether there is a WUA or not. In areas where there is no WUA it shall be the responsibility of the officers to implement the concessions. In case of area where there are WUAs, it shall be the responsibility of the relevant officer to prepare the record of those eligible for concessions and hand it over to the WUA. It shall be the responsibility of the WUA to implement the concessions and to report on the same to the officer. It should also be the responsibility of the officer to maintain a record of concessions given each year within their jurisdiction and to pass this on to the higher level for compilation. ***b) Concessions for volumetric supply*** Since WUAs receive bulk volumetric supply from the department and are free to fix their internal charges, it is important for them to maintain a record of how they are passing on the concessions to the relevant irrigators. The WUAs will be provided the list of irrigators eligible for concession along with the type of concession. It is suggested that the irrigators eligible for concession be provided a concession in tariff in proportion to the concession as specified in the tariff order. This would help maintain the autonomy of the WUA to decide its rates internally and yet offer the applicable concessions to the eligible irrigators in the commands. The officer at the appropriate level has to ensure that the concession actually reaches the concerned farmer. ***c) Awareness regarding concessions*** Our field insights substantiated by the present data shows that there is little awareness about the different concessions awarded to irrigators. It would therefore be important to raise awareness around these concessions using different methods. Prominently displaying the available concessions in the WUA offices/section offices or in the village gram panchayat offices, distributing handouts that list these concessions etc could be some suggested tools.
Concessions and fines Domestic water and industry	***a) Defining roles*** An appropriate officer from within the WRD has to ensure that all the concessions and fines are worked out well in advance of the billing cycle. ***b) Monitoring and reporting*** The process of monitoring, who would do it and how it would be reported also needs to be clearly spelled out. MPCB will have to play a significant role in terms of monitoring water quality and prepare its report for the WRD well before billing takes place. For example before availing of rebates or levying of fines for water quality MPCB will have to provide an authorized report. As per the tariff proposal 23

municipal corporations were to submit its implementation program for STPs by May 2013 there is no mention whether this has happened and if yes or no how action would be determined.

c) Accounting processes

i) Maintaining record of concessions and fines:

This is a more general recommendation for all the three categories of use. A separate mention of tariff for quantum of water used, concessions applied (type and amount), fines collected (types and amount) and the final bill. Records of all these categories will have to be separately noted. Below is a suggested conceptual format for recording of fines and concessions along with the tariff and the final levy after taking into consideration fines and concessions.

Suggested format for maintaining records of concessions and fines

Quantum of water used	Full Tariff applicable	Type of Concession applied	Concession amount	Type of fine	Fine amount	Final billed amount

ii) Maintaining record of arrears

Arrears need to be recorded in a systematic manner. It is important here to maintain a record of arrears according to age.

List of tables and charts

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