

6TH CENSUS OF MINOR IRRIGATION SCHEMES REPORT



Volume-2

Surface Flow &
Surface Lift

Deep
Tubewells

Medium
Tubewells

Shallow
Tubewells

Dugwells



GOVERNMENT OF INDIA
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT AND
GANGA REJUVENATION
MINOR IRRIGATION (STATISTICS) WING

State wise Report of 6th Minor Irrigation Census

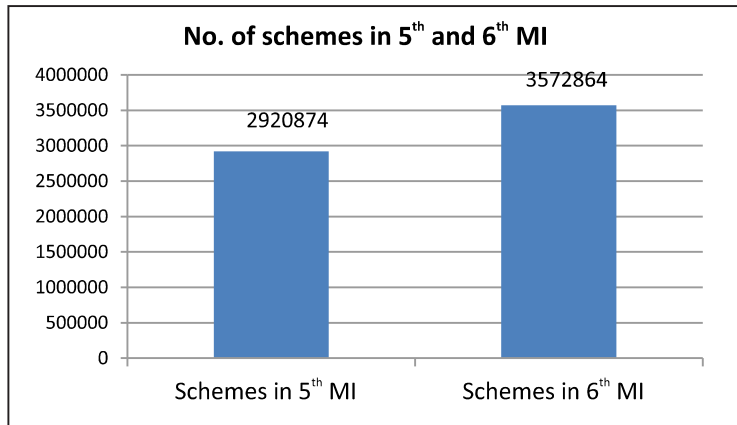
VOLUME - 2



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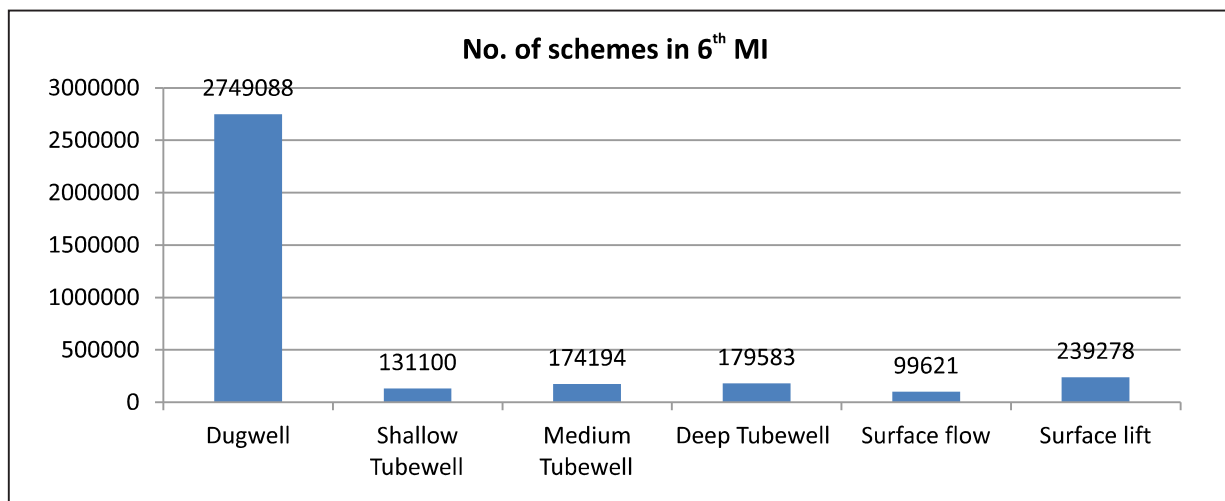
MAHARASHTRA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Maharashtra has 35,72,864 MI schemes comprising of 90.5% (32,33,965) Ground Water (GW) schemes and 9.5% (3,38,899) Surface Water (SW) schemes. The number of schemes has increased to the tune of 22.3% in 6th MI census as compared to the 29,20,874 schemes in 5th MI census in the State of Maharashtra.



The State Government has reported an increase of 22.6% (5,95,971) in GW schemes and 19.8% (56,019) in SW schemes during 6th MI census as compared to the 26,37,994 GW schemes and 2,82,880 SW schemes recorded in 5th census.

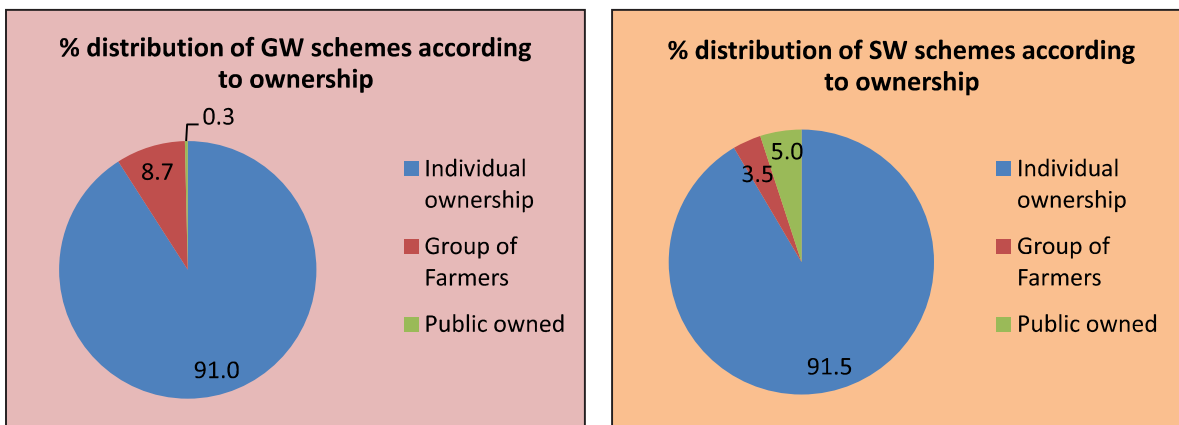
Out of the 35,72,864 MI schemes reported in Maharashtra, 76.9% (27,49,088) are dugwells followed by 6.7% (2,39,278) surface lift and 5.02% (1,79,583) deep tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.



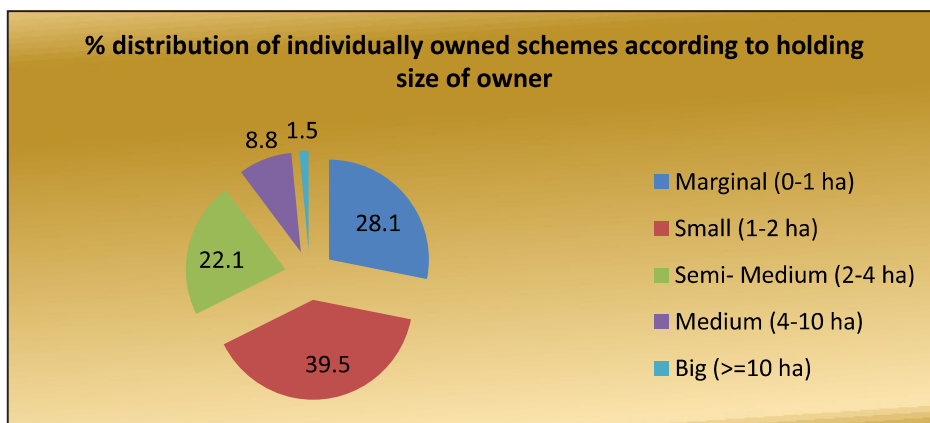
Ownership of MI schemes

Out of 35,72,864 MI schemes, majority of the schemes i.e. 91% (32,50,590) are under individual ownership, 8.2% (2,94,342) schemes are owned by group of farmers and a small chunk of 0.8% (27,932)

schemes are public owned. Among 32,33,965 GW schemes, around 91% (29,40,501) schemes are individually owned and among 3,38,899 SW schemes, 91.5% (3,10,089) are individually owned. Most of MI structures in Maharashtra are owned by individual farmers or group of farmers as brought out in the figure given below. This shows that individual farmers/group of farmers are getting maximum benefit from minor irrigation schemes.

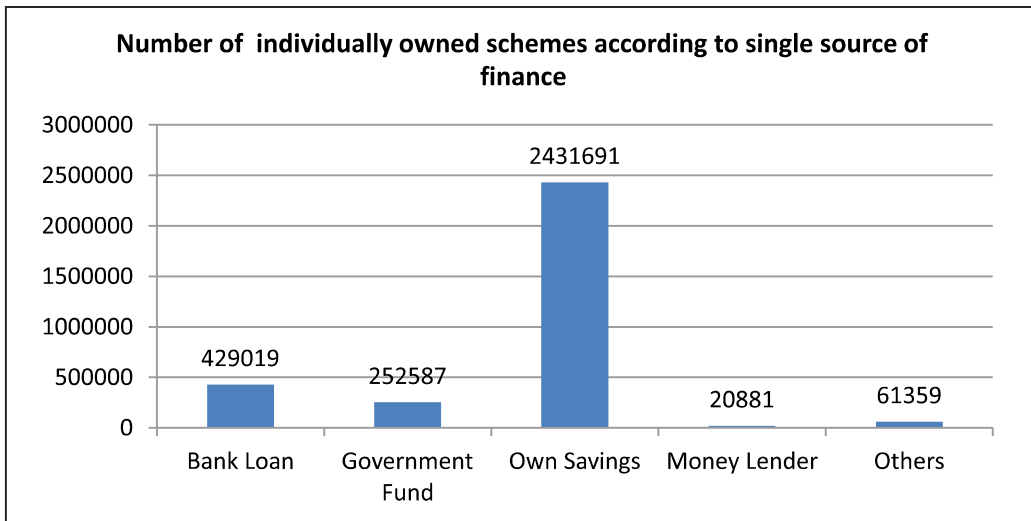


Out of the 32,50,590 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 67.6% (21,99,201) in MI schemes. Rest of the 32.4% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below.



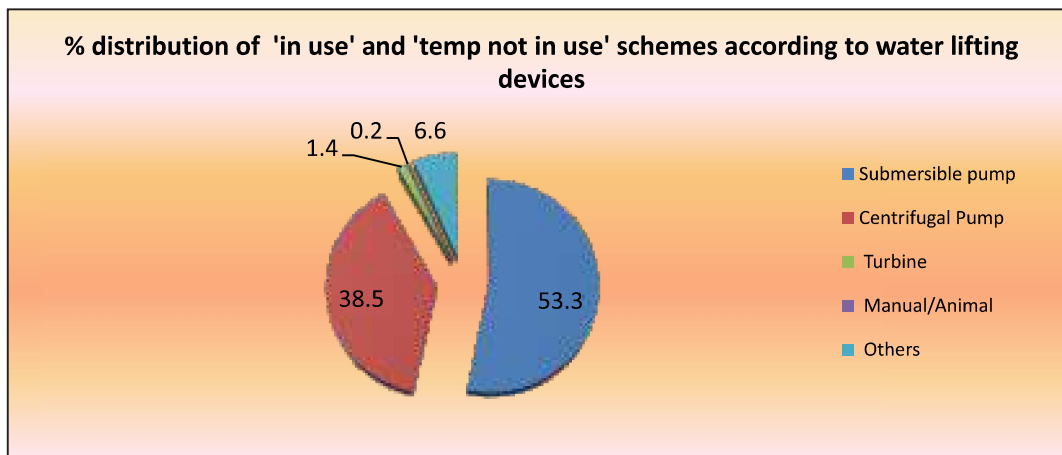
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 32,50,590 individually owned schemes, 98.3% (31,95,537) have single source of finance whereas 1.7% (55,053) have more than one source of finance. In these schemes with single source of finance (31,95,537), majority of schemes i.e. 76.09% (24,31,691) are being financed by own savings of individual farmer. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



Distribution of lifting devices in MI schemes

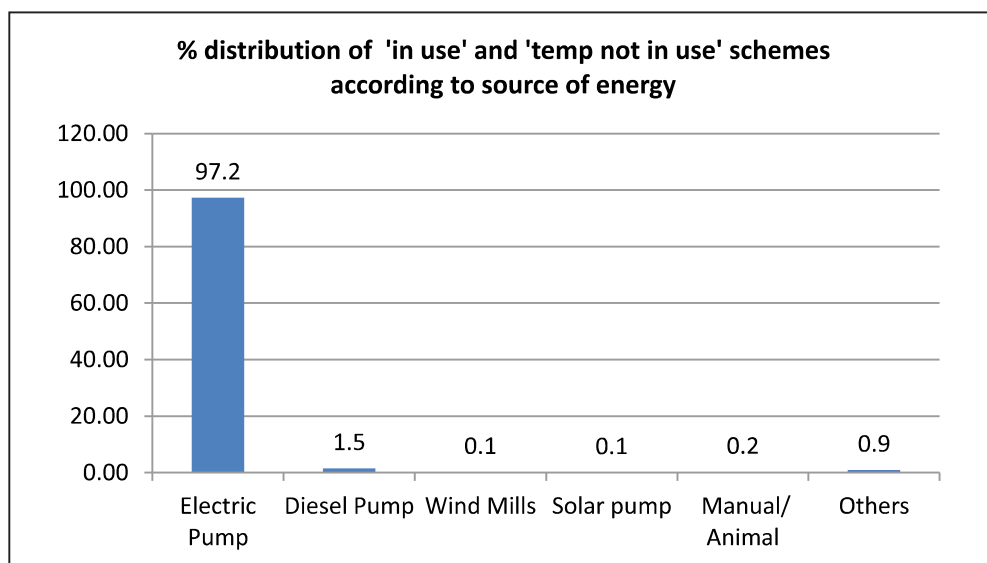
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which falls under the category of ground water and surface lift schemes. The number of such schemes is 34,69,410, out of 35,72,864 MI schemes. Out of these (34,69,410) schemes, majority of schemes i.e 53.3% (18,48,599) have submersible pump and 38.5% (13,36,001) schemes have centrifugal pump as lifting device. 1.4% (48,456) schemes are operated by turbines, 0.2% (6,299) are being operated manually or by animal for water lifting purposes and rest 6.6% (2,30,055) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



Distribution of source of energy

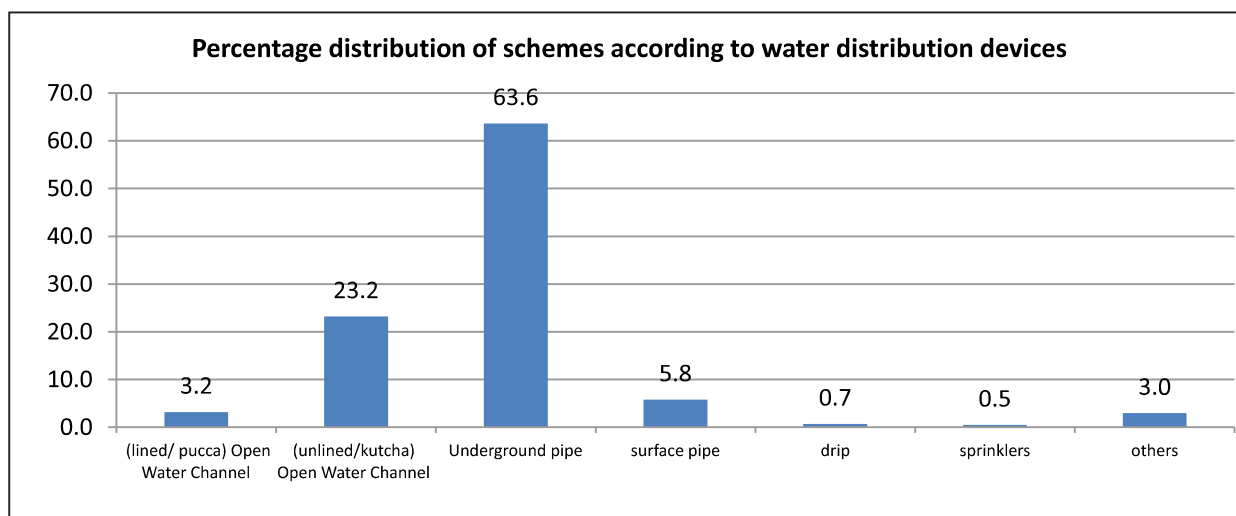
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which falls under the category of ground water and surface lift schemes. The number of such schemes is 34,69,410. Out of these schemes, majority of schemes i.e 97.2% (33,73,539) schemes are using electricity as source of energy followed by diesel pumps

in 1.5% (51,832) schemes. In rest of the 1.3% (44,039) schemes, manual/animal/windmills/ solar pumps/ other devices are used as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



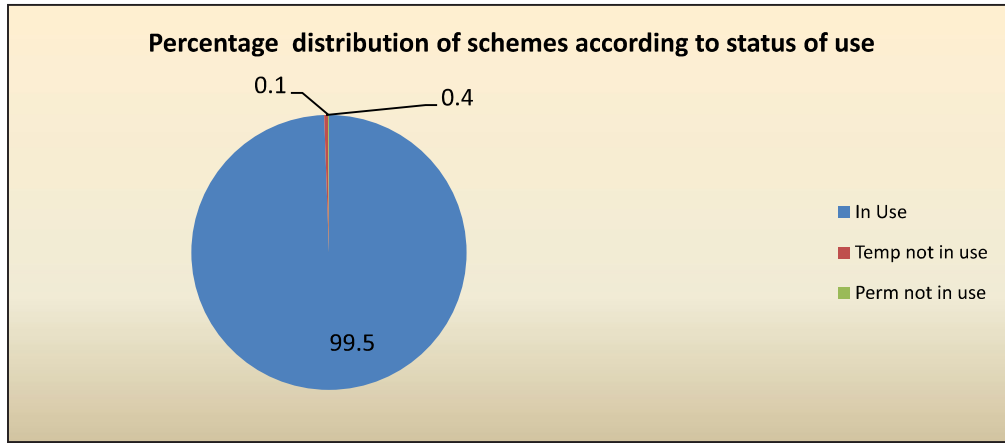
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through underground pipe is 63.6% (22,61,399) followed by 23.2% (8,24,022) open water channel (unlined/kutchha) and 5.8% (2,05,731) surface pipes. The water distribution devices used in the rest of the MI schemes are 3.2% (1,13,627) open water channel (lined/pucca), 0.7 % (25,530) drip, 0.5% (17,942) sprinklers and 3.0% (1,05,387) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

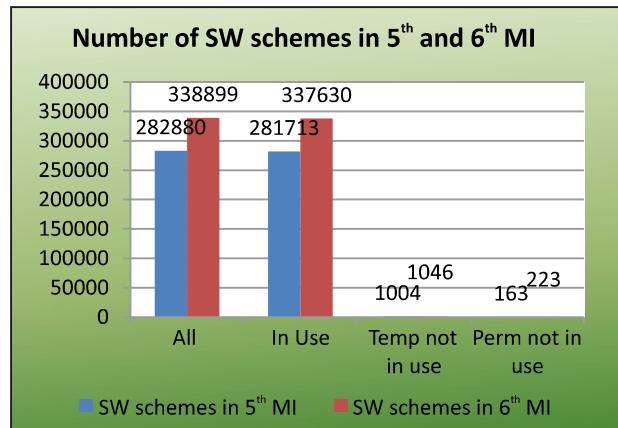
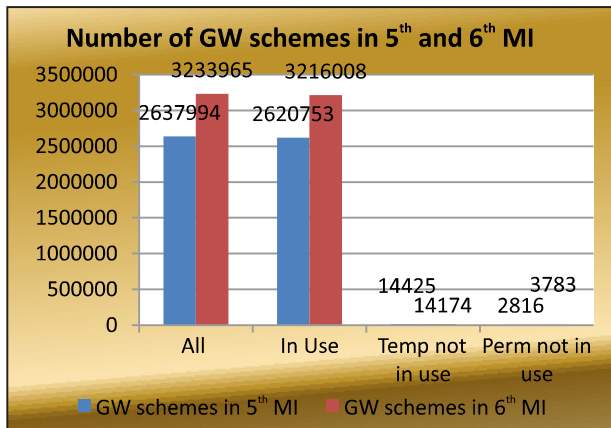


Status of MI schemes

Out of 35,72,864 MI schemes, 99.5% (35,53,638) are 'in use', 0.4% (15,220) are 'temporarily not in use' and only 0.1% (4,006) are 'permanently not in use' schemes which is depicted in the pie chart given below.

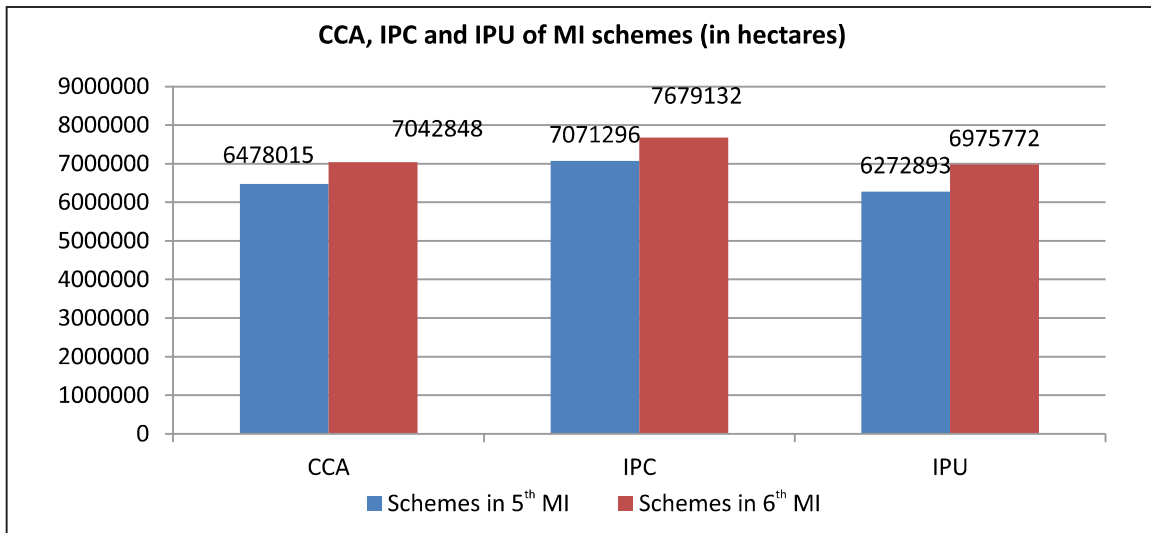


Out of 15,220 'temporarily not in use' schemes, 14,174 are GW schemes and 1,046 are SW schemes. Among 4,006 'permanently not in use' schemes, 3,783 are GW schemes and 223 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



Irrigation Potential Created (IPC) and Irrigation Potential Utilized (IPU)

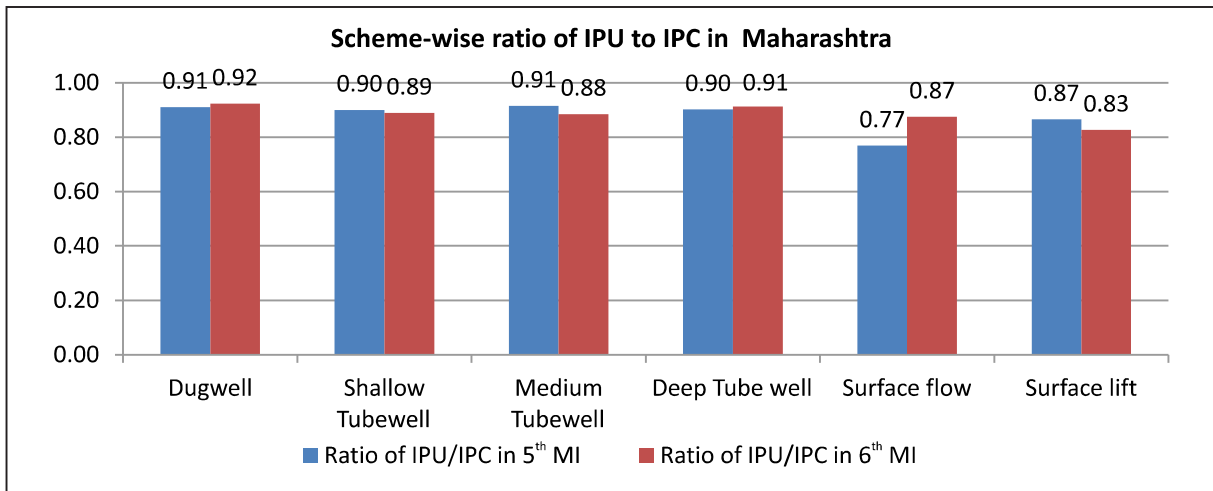
There has been marginal increase of 8.6% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 70,71,296 hectares during 5th MI census to 76,79,132 hectares during 6th MI census. Irrigation potential utilized was 62,72,893 hectares during 5th MI Census in Maharashtra, which has increased to 11.2% during 6th MI Census. A comparative chart showing Culturable Command Area (CCA), IPC and IPU of schemes during 5th and 6th MI census is shown in the chart given below.



As per 6th MI Census, 65,93,449 hectares irrigation potential is created through GW schemes and 10,85,682 hectares through SW schemes. Irrigation potential utilized is 60,56,649 and 9,19,123 for GW and SW schemes respectively. This shows that 91.9 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 84.7 %. The scheme-wise ratio of IPU to IPC in Maharashtra is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Maharashtra			
	IPC	IPU	Ratio of IPU/IPC in 6th MI
Dugwell	56,06,561	51,72,736	0.92
Shallow Tubewell	2,77,631	2,46,812	0.89
Medium Tubewell	3,62,059	3,20,347	0.88
Deep Tubewell	3,47,198	3,16,753	0.91
Surface flow	4,56,297	3,99,089	0.87
Surface lift	6,29,385	5,20,034	0.83

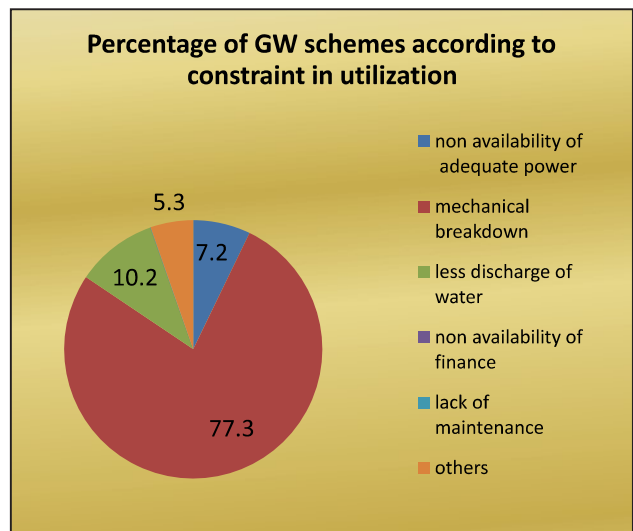
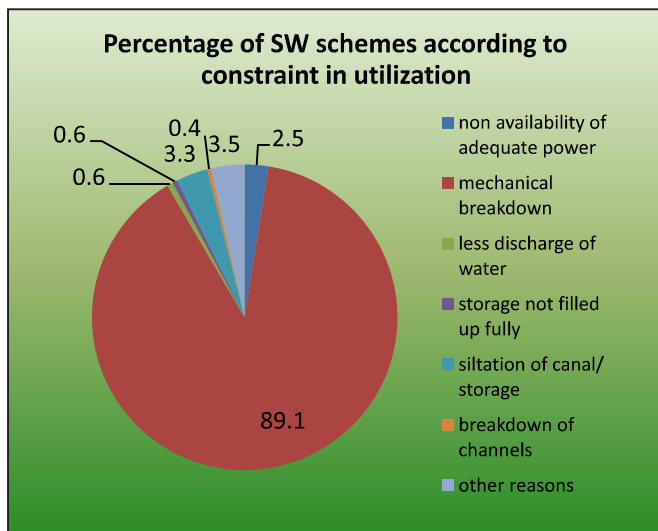
Dugwells have the highest IPC & IPU followed by surface lift and surface flow schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 85% utilization of the potential created except surface lift scheme with a utilization of 83%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.



Underutilization of In Use schemes

It is observed in the previous rounds of MI censuses that many 'in use' schemes were under-utilized due to various constraints. As per the 6th MI Census, 15,78,184 (44.4%) schemes out of 35,53,638 'in use' schemes in Maharashtra are under-utilized due to several reasons. Remaining 55.6% 'in use' MI schemes are functioning without any constraints.

Among 15,78,184 under-utilized schemes, 14,23,683 are GW schemes and 1,54,501 are SW schemes. The major factor contributing to constraints in utilization of both GW and SW schemes is reported to be mechanical breakdown. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.



Key Parameters of 6 th MI Census-Maharashtra						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	27,49,088			76.94
	Shallow Tubewell	No.	1,31,100			3.67
	Medium Tubewell	No.	1,74,194			4.88
	Deep Tubewells	No.	1,79,583			5.03
	Ground Water Schemes	No.	32,33,965			90.51
	Surface Flow	No.	99,621			2.79
	Surface Lift	No.	2,39,278			6.70
	Surface Water Schemes	No.	3,38,899			9.49
	Total Schemes	No.	35,72,864			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	60,94,421	9,48,427	70,42,848	
	IPC	Ha	65,93,449	10,85,682	76,79,132	
	IPU	Ha	60,56,649	9,19,123	69,75,772	
	IPC of in use schemes	Ha	65,74,289	10,83,422	76,57,711	
	IPU of in use schemes	Ha	60,43,937	9,17,698	69,61,635	
	% Ratio of IPU wrt IPC	%	91.86	84.66	90.84	
	Gap in IPC and IPU	Ha	5,36,800	1,66,559	7,03,360	
Ownership	Individual ownership	No.	29,40,501	3,10,089	32,50,590	90.98
	Group of Farmers	No.	2,82,612	11,730	2,94,342	8.24
	Public owned	No.	10,852	17,080	27,932	0.78
	Total	No.	32,33,965	3,38,899	35,72,864	100.00
Social Status of Individual Owner	SC	No.	3,93,934	43,525	4,37,459	13.46
	ST	No.	4,37,478	62,152	4,99,630	15.37
	OBC	No.	10,02,470	79,119	10,81,589	33.27
	Others	No.	11,06,619	1,25,293	12,31,912	37.90
	Total Individual	No.	29,40,501	3,10,089	32,50,590	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	90,044	23,583	1,13,627	3.20

Key Parameters of 6th MI Census-Maharashtra

Parameter		Unit	Value			%
Open Water Channel (unlined/ kutch)	No.	7,58,080	65,942	8,24,022	23.19	
Underground pipe	No.	20,43,499	2,17,900	22,61,399	63.64	
Surface Pipe	No.	1,87,207	18,524	2,05,731	5.79	
Drip	No.	24,866	664	25,530	0.72	
Sprinklers	No.	16,217	1,725	17,942	0.50	
Others	No.	96,095	9,292	1,05,387	2.97	
Total	No.	32,16,008	3,37,630	35,53,638	100.00	