

6TH CENSUS OF MINOR IRRIGATION SCHEMES REPORT



Volume-2

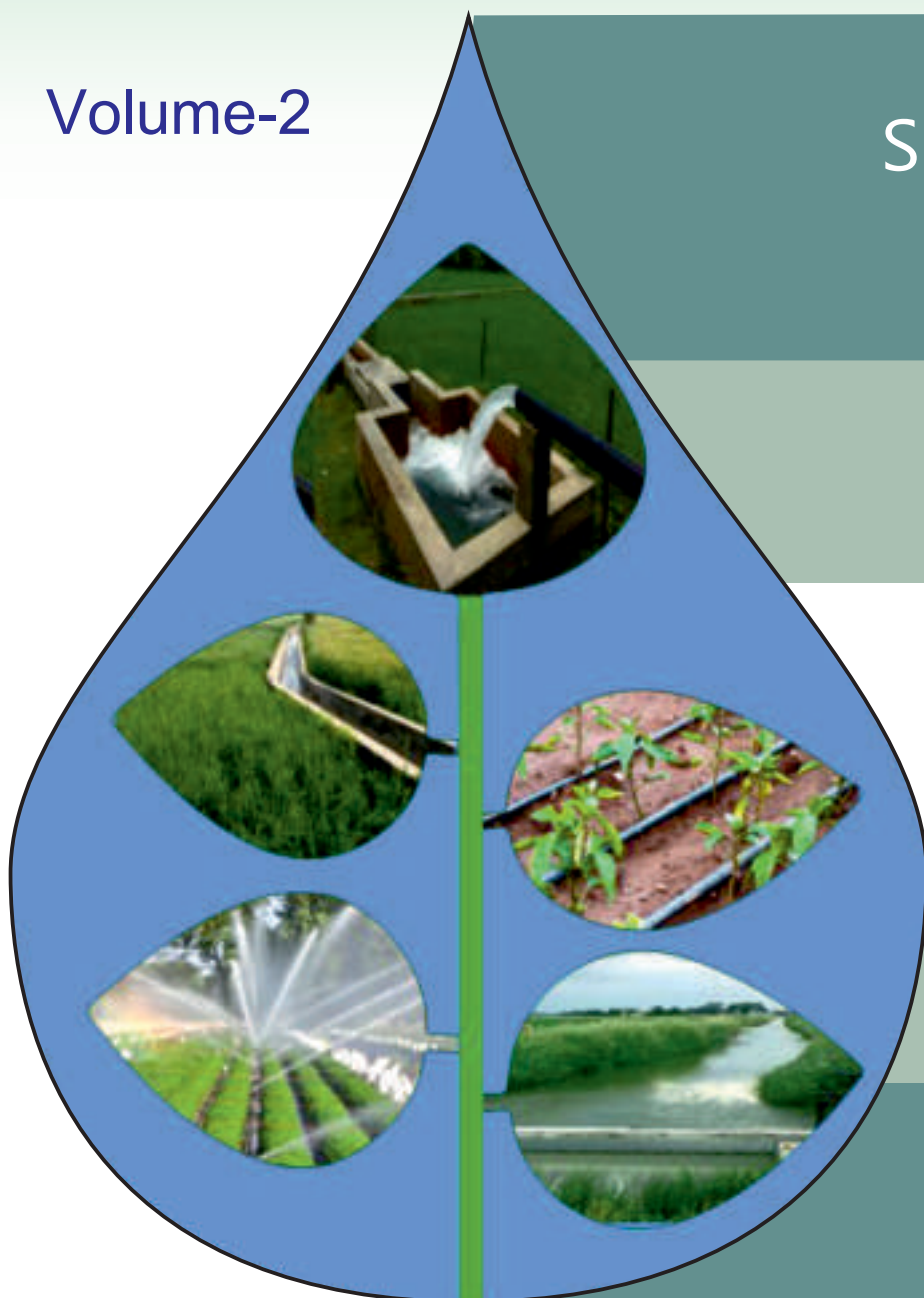
Surface Flow &
Surface Lift

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



सत्यमेव जयते

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

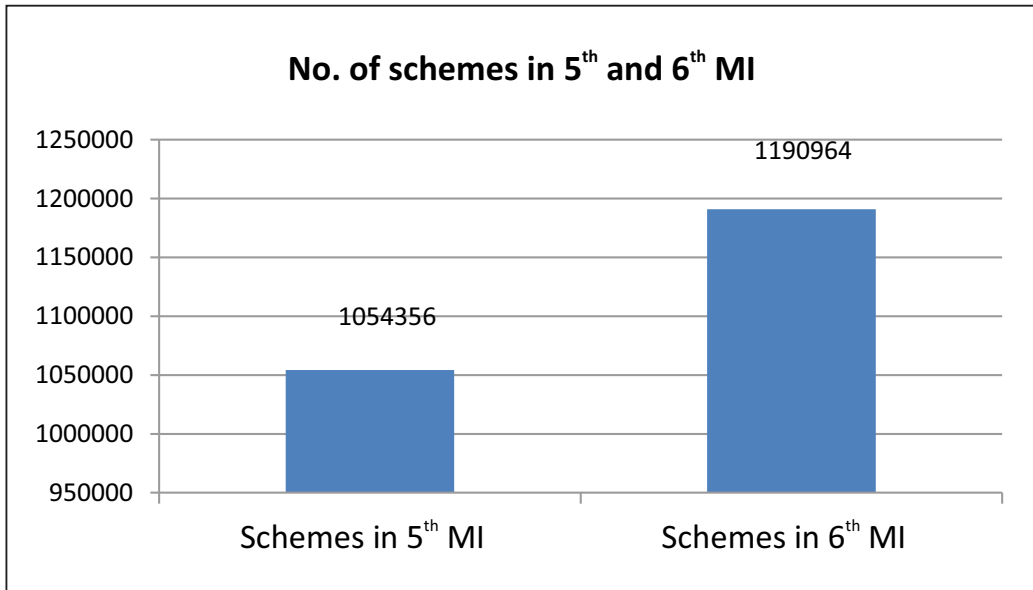
Contents

S.No.	Name of State	Page No.
1	Andhra Pradesh	1
2	Arunachal Pradesh	10
3	Assam	18
4	Bihar	28
5	Chhattisgarh	38
6	Goa	48
7	Gujarat	58
8	Haryana	67
9	Himachal Pradesh	76
10	Jammu & Kashmir	86
11	Jharkhand	95
12	Karnataka	105
13	Kerala	115
14	Madhya Pradesh	125
15	Maharashtra	134
16	Manipur	143
17	Meghalaya	148
18	Mizoram	157
19	Nagaland	166
20	Odisha	175
21	Punjab	185
22	Rajasthan	194
23	Sikkim	204
24	Tamil Nadu	209
25	Tripura	218
26	Telangana	227
27	Uttar Pradesh	237

S.No.	Name of State	Page No.
28	Uttarakhand	246
29	West Bengal	256
30	Andaman & Nicobar Islands	265
31	Chandigarh	275
32	Puducherry	279

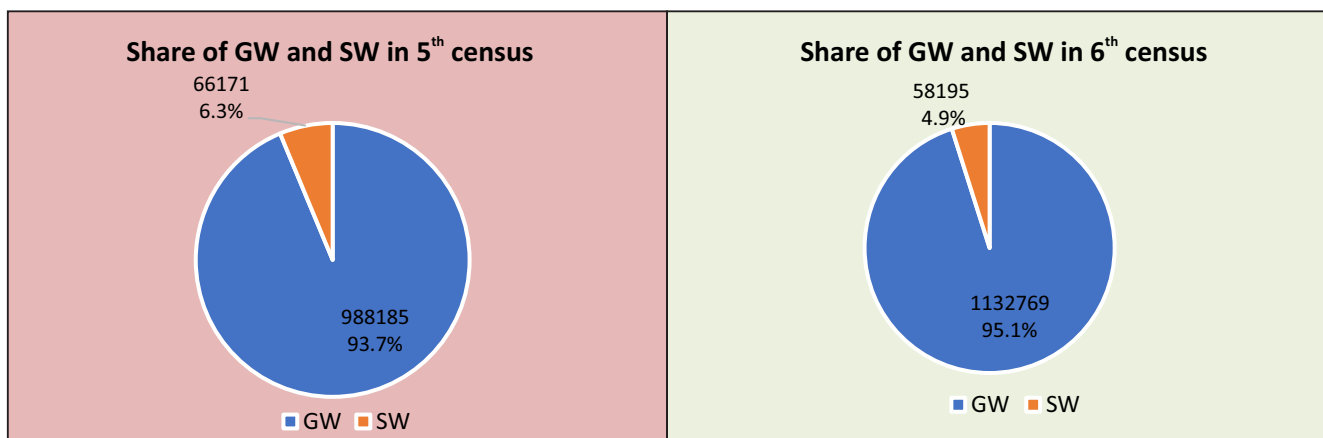
ANDHRA PRADESH

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Andhra Pradesh has 11,90,964 MI schemes comprising of 95.1% (11,32,769) Ground Water (GW) Schemes and 4.9% (58,195) Surface Water (SW) schemes. There has been an increase to the tune of 13.0% in 6th MI census as compared to the 10,54,356 schemes in 5th MI census in the State of Andhra Pradesh.

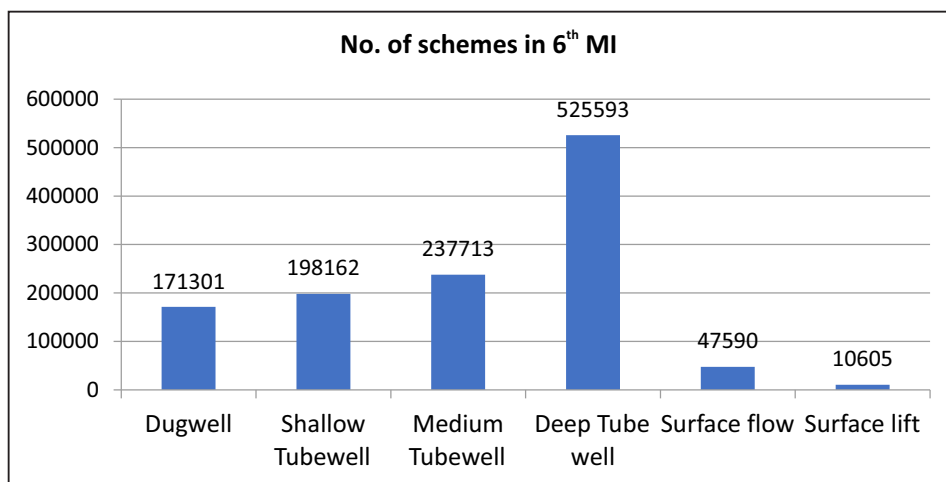


The State Government has reported increase of 14.6% (1,44,584) in GW schemes and decline of 12.1% (7,976) in SW Schemes during 6th MI census as compared to the 9,88,185 GW schemes and 66,171 SW Schemes recorded in 5th census.

Share of Ground Water Schemes in the State of Andhra Pradesh has increased from 93.7% in 5th MI Census to 95.1% in 6th MI Census whereas share of SW Schemes has declined from 6.3% in 5th Minor Irrigation Census to 4.9% in 6th MI Census as shown in the pie chart given below.

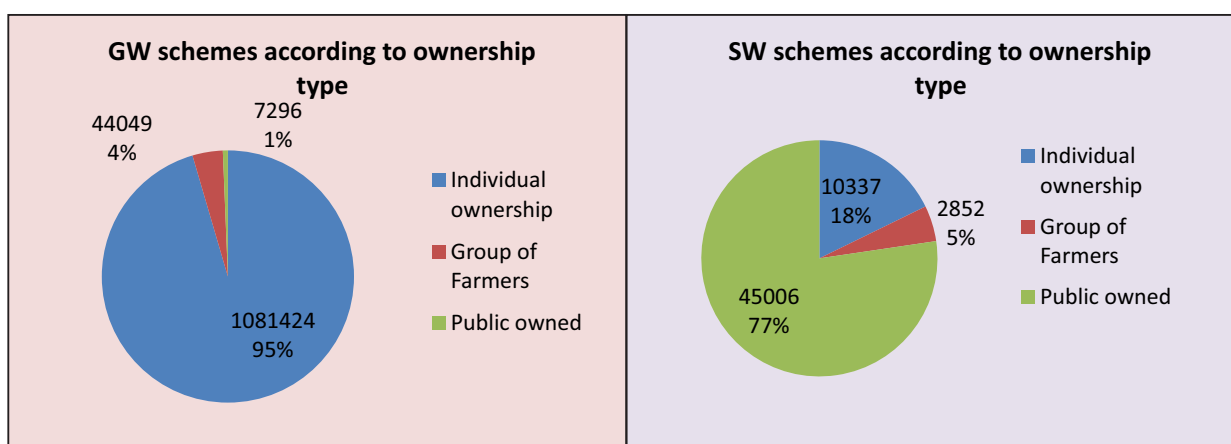


Out of the 11,90,964 MI schemes reported in Andhra Pradesh, 44.1% (5,25,593) are deep tube wells followed by 20.0% (2,37,713) medium tube wells and 16.6% (1,98,162) shallow tube well schemes. Distribution of different GW and SW schemes is shown in the chart given below.



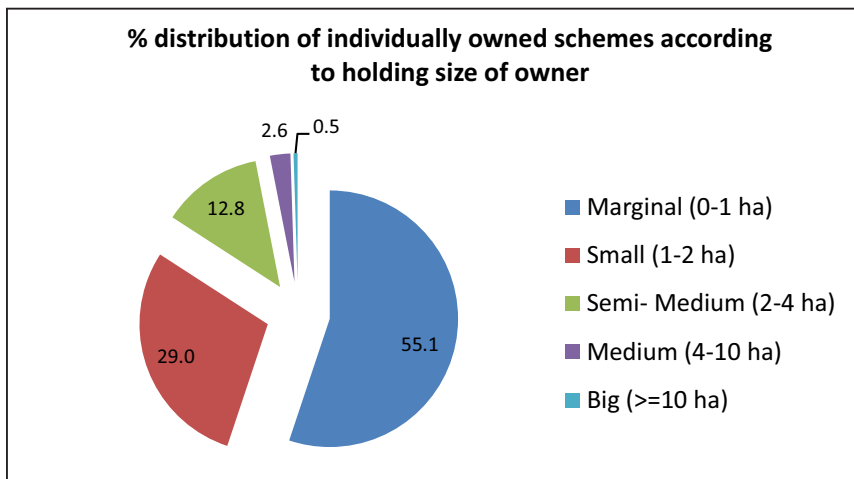
Ownership of MI Schemes

Out of 11,90,964 MI schemes, majority of the schemes i.e. 91.7% (10,91,761) continue to remain under individual ownership, 4.4% (52,302) schemes are public owned and 3.9% (46,901) schemes are owned by group of farmers. Among 11,32,769 GW schemes, 95.5% (10,81,424) schemes are individually owned whereas among 58,195 SW schemes, 77.3% (45,006) are public owned. Most of MI structures in Andhra Pradesh are owned by individual farmers which has been brought out in the figure given below. Individual farmers are getting maximum benefit from minor irrigation schemes.



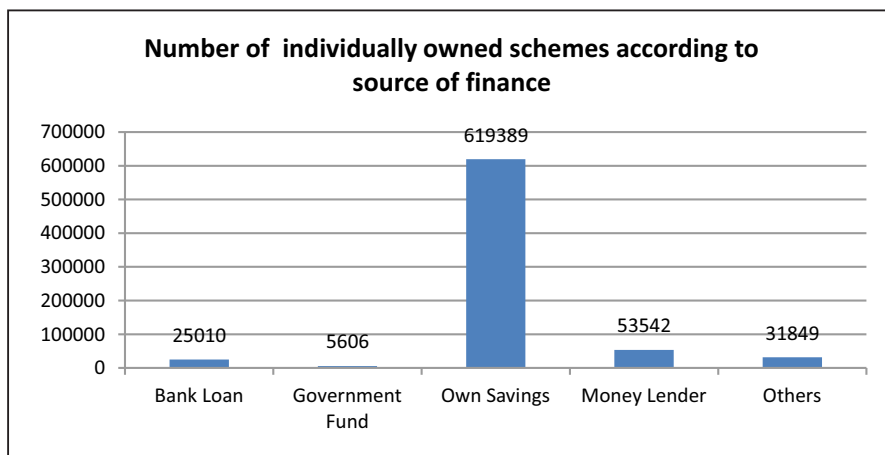
Out of the total 10,91,761 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 84.1 % (9,18,641) MI schemes. Rest of the 15.9% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI

Structures for irrigation purposes which will play crucial role in improving the livelihood of small and marginal farmers.



Financing of MI Schemes

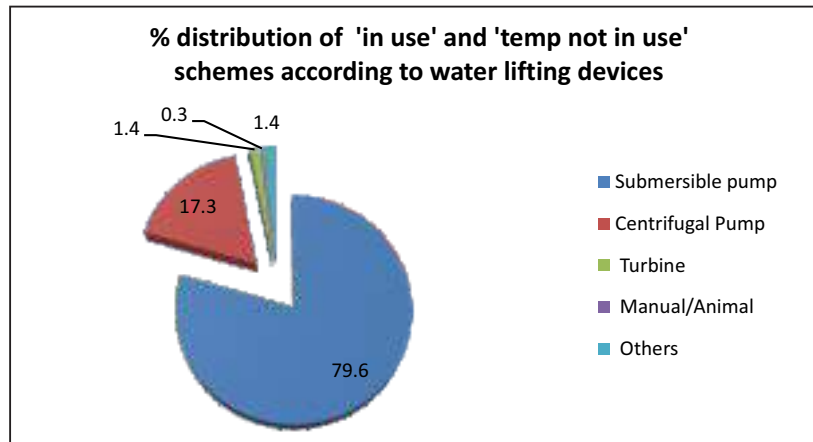
The information on source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 10,91,761 individually owned schemes, 67.3% (7,35,396) have single source of finance whereas 32.7% (3,56,365) have more than one source of finance. In these schemes with single source of finance (7,35,396), majority of schemes i.e. 84.2% (6,19,389) are being financed by own savings of individual farmer. Other reported sources of finance are money lender 7.3% (53,542), bank loan 3.4% (25,010), Government fund 0.8% (5,606) and others 4.3% (31,849). Distribution of individually owned MI schemes according to 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 comes under the category of ground water and surface lift schemes. The number of such

schemes is 10,94,214, out of the total 11,90,964 MI schemes. Out of these (10,94,214) schemes, majority of schemes i.e 79.6% (8,70,475) have submersible pump and 17.3% (1,89,840) schemes have centrifugal pump as lifting device. 1.4% (15,539) schemes are being operated by turbines for water lifting purposes, 0.3% (3,050) are operated manually or by animals and rest 1.4% (15,310) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.

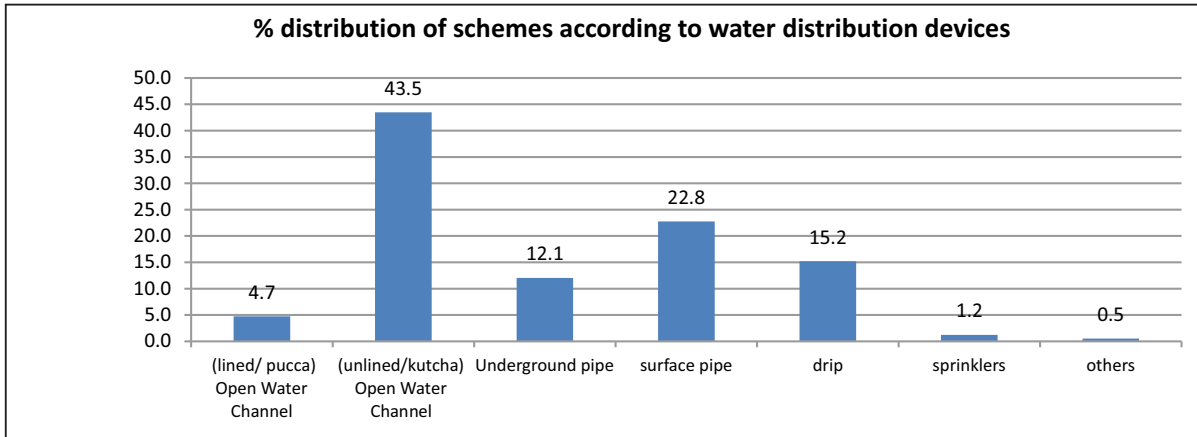


Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 10,94,214. Out of these (10,94,214) schemes, majority of schemes i.e 91.8% (10,04,717) schemes are using electric pump as source of energy followed by diesel pumps in 6.4% (70,378) schemes and solar pumps/windmills/manual/animal or other sources in rest of the 1.8% (19,119) cases.

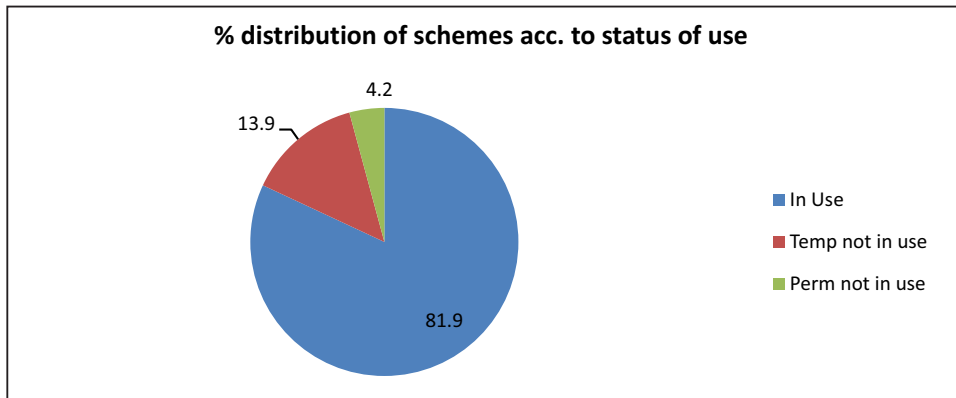
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchha) is 43.5% (4,24,458) followed by 22.8% (2,22,198) surface pipe and 15.2% (1,48,310) drip. The water distribution devices used in rest of the MI schemes are 12.1% (1,17,552) underground pipes, 4.7% (46,246) open water channels (lined/pucca), 1.2% (11,991) sprinklers and 0.5% (5,170) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

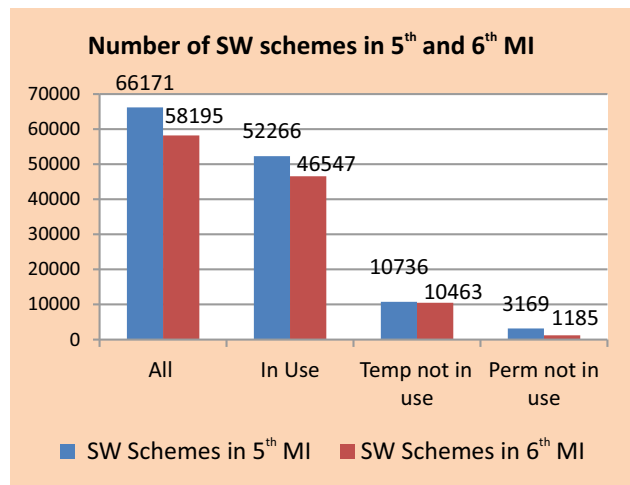
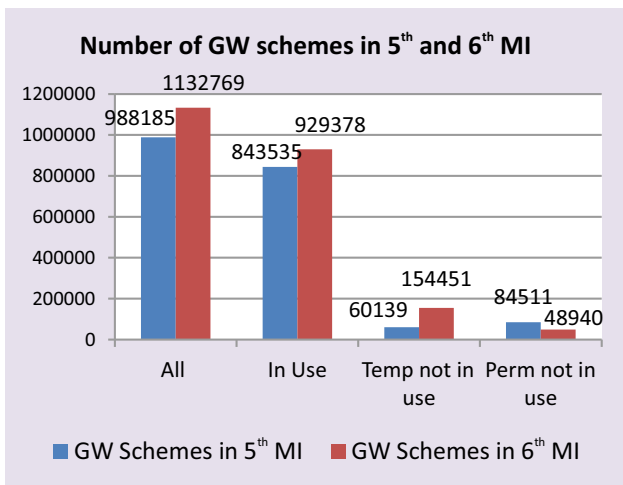


Status of MI Schemes

Out of total number of 11,90,964 MI schemes, 81.9% (9,75,925) are 'in use', 13.9% (1,64,914) are 'temporarily not in use' and only 4.2% (50,125) are 'permanently not in use' schemes which is depicted in the pie chart given below.

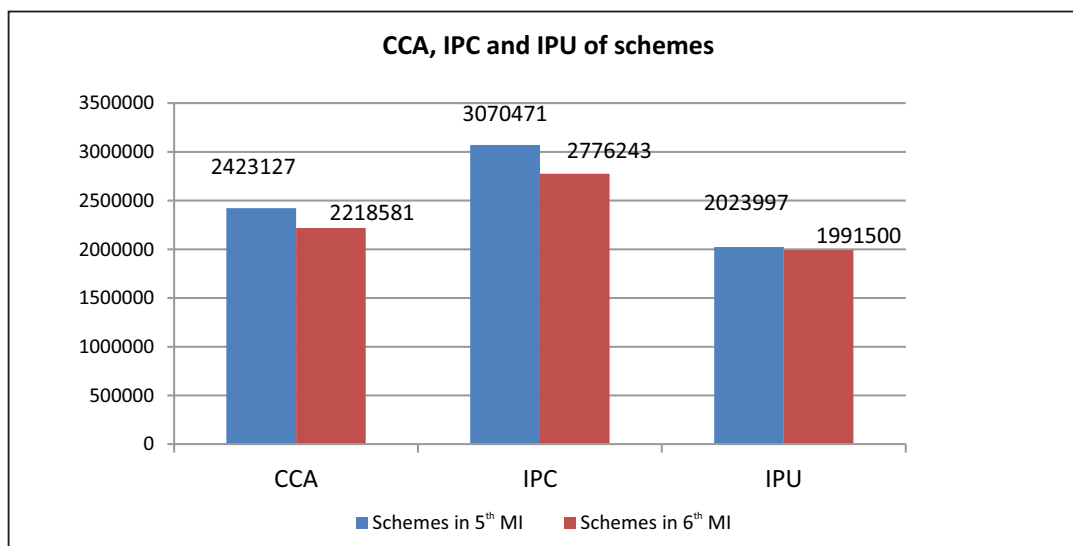


Out of 1,64,914 'temporarily not in use' schemes, 1,54,451 are GW schemes and 10,463 are SW schemes. Among 50,125 'permanently not in use' schemes, 48,940 are GW schemes and 1,185 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

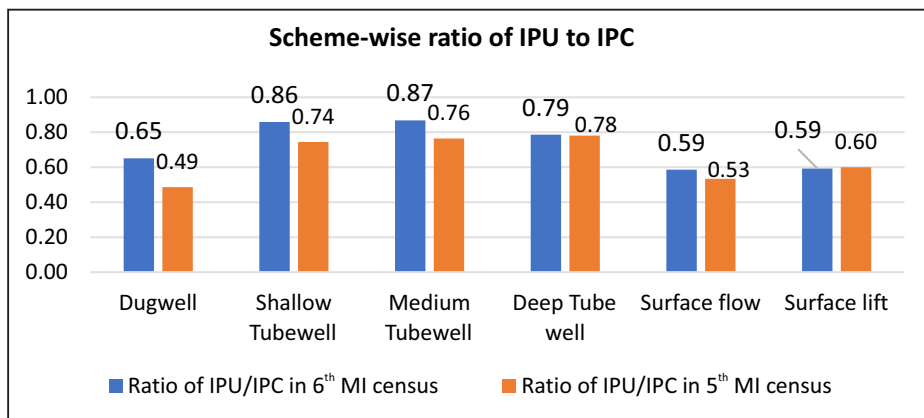
There has been decline of 9.6% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has declined from 30,70,471 hectares during 5th MI census to 27,76,243 hectares during 6th MI census. Irrigation potential utilized was 20,23,997 hectares during 5th MI Census in Andhra Pradesh, which has declined by 1.6% during 6th MI Census. A comparative chart showing Culturable Command Area (CCA), IPC and IPU of schemes during 5th and 6th census is shown in the chart given below.



As per 6th MI Census, 16,91,470 hectares irrigation potential is created through GW schemes and 10,84,772 hectares through SW schemes. Irrigation potential utilized is 13,54,787 hectares and 6,36,713 hectares for GW and SW schemes, respectively. This shows that 80.1% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 58.7%. The scheme-wise ratio of IPU to IPC in Andhra Pradesh is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	1,89,863	1,23,579	0.65
Shallow Tubewell	3,13,751	2,69,209	0.86
Medium Tubewell	3,42,679	2,97,470	0.87
Deep Tube well	8,45,177	6,64,528	0.79
Surface flow	9,25,048	5,42,040	0.59
Surface lift	1,59,724	94,673	0.59

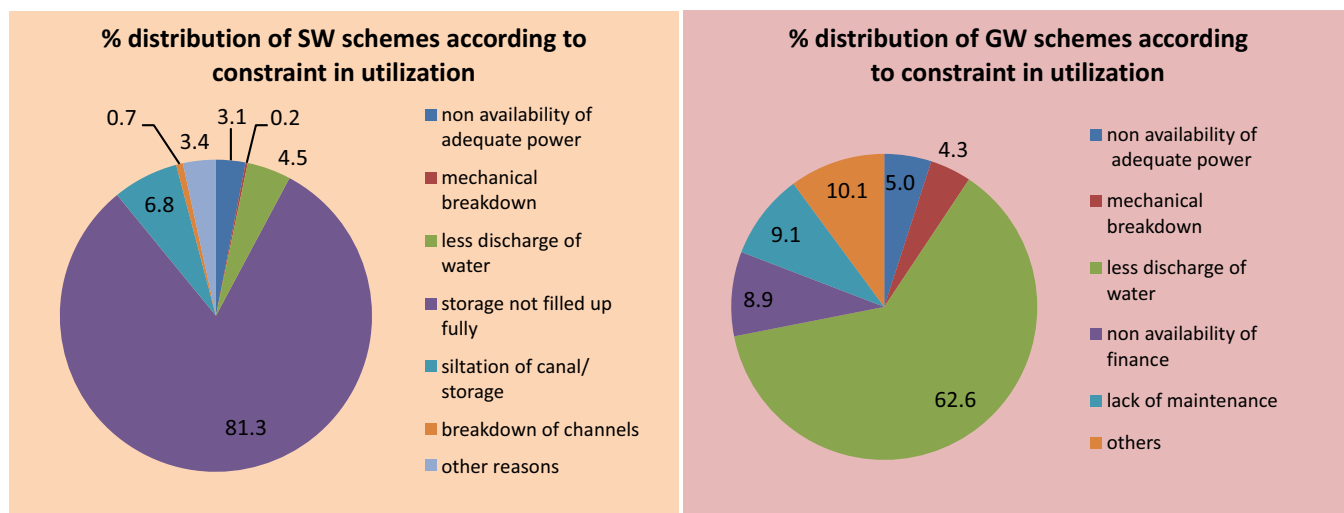
Surface flow schemes have the highest IPC followed by deep tube well and medium tube well. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 60% utilization of the potential created except surface flow and surface lift schemes with a utilization of 59%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.



Under utilization of In Use Schemes

It is observed in the previous rounds of MI censuses, many 'in use' schemes were under-utilized due to various constraints. As per the 6th MI Census, 23.2% (2,26,539) schemes out of 9,75,925 'in use' schemes in Andhra Pradesh are under-utilized due to several reasons. Remaining 76.8% 'in use' MI schemes are functioning without any constraints.

Among 2,26,539 under-utilized schemes, 2,17,114 are GW schemes and 9,425 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' whereas the SW schemes are under-utilized mainly due to the reason that storage is not filled up fully. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.



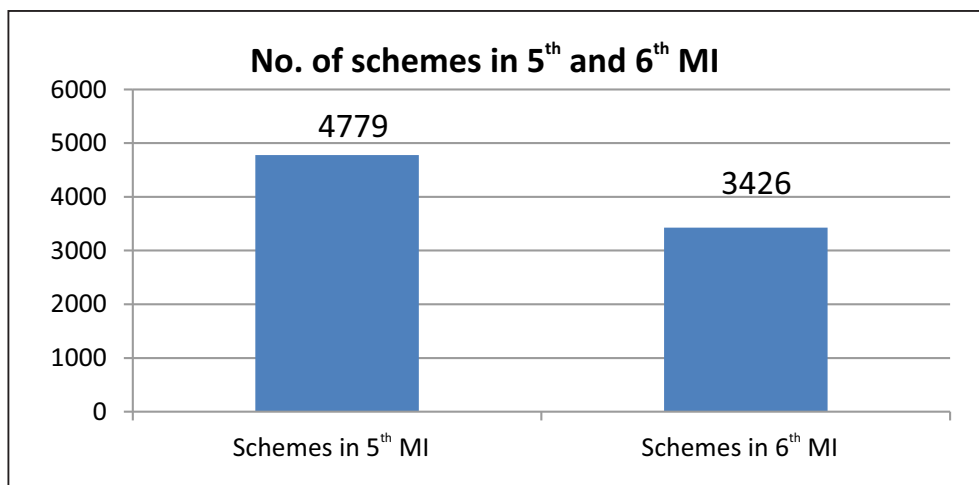
Key Parameters of 6 th MI Census-Andhra Pradesh						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	1,71,301			14.38
	Shallow Tubewell	No.	1,98,162			16.64
	Medium Tubewell	No.	2,37,713			19.96
	Deep Tubewells	No.	5,25,593			44.13
	Ground Water schemes	No.	11,32,769			95.11
	Surface Flow	No.	47,590			4.00
	Surface Lift	No.	10,605			0.89
	Surface Water schemes	No.	58,195			4.89
	Total schemes	No.	11,90,964			
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	13,13,196	9,05,385	22,18,581	
	IPC	Ha	16,91,470	10,84,772	27,76,243	
	IPU	Ha	13,54,787	6,36,713	19,91,500	
	IPC of in use schemes	Ha	14,40,060	8,74,547	23,14,607	
	IPU of in use schemes	Ha	12,82,790	6,12,924	18,95,714	
	% Ratio of IPU wrt IPC	%	80.10	58.70	71.73	
	Gap in IPC and IPU	Ha	3,36,683	4,48,060	7,84,743	
Ownership	Individual ownership	No.	10,81,424	10,337	10,91,761	91.67
	Group of Farmers	No.	44,049	2,852	46,901	3.94
	Public owned	No.	7,296	45,006	52,302	4.39
	Total	No.	11,32,769	58,195	11,90,964	100.00
Social Status of Individual Owner	SC	No.	74,534	678	75,212	6.89
	ST	No.	29,346	741	30,087	2.76
	OBC	No.	4,07,935	3,256	4,11,191	37.66
	Others	No.	5,69,609	5,662	5,75,271	52.69
	Total Individual	No.	10,81,424	10,337	10,91,761	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	41,490	4,756	46,246	4.74
	Open Water Channel (unlined/ kutcha)	No.	3,90,866	33,592	4,24,458	43.49

Key Parameters of 6th MI Census-Andhra Pradesh

Parameter	Unit	Value			%
Underground pipe	No.	1,14,801	2,751	1,17,552	12.05
Surface Pipe	No.	2,18,738	3,460	2,22,198	22.77
Drip	No.	1,47,327	983	1,48,310	15.20
Sprinklers	No.	11,763	228	11,991	1.23
Others	No.	4,393	777	5,170	0.53
Total	No.	9,29,378	46,547	9,75,925	100.00

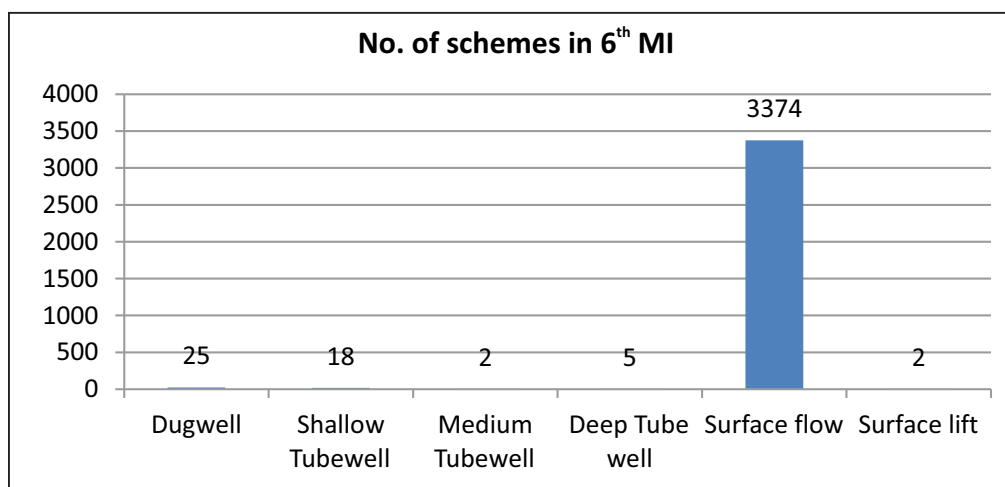
ARUNACHAL PRADESH

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Arunachal Pradesh has 3,426 MI schemes comprising of 1.5% (50) Ground Water (GW) schemes and 98.5% (3,376) Surface Water (SW) schemes. There is a decline to the tune of 28.3% in MI schemes of 6th MI census as compared to the 4,779 schemes in 5th MI census in the State of Arunachal Pradesh.



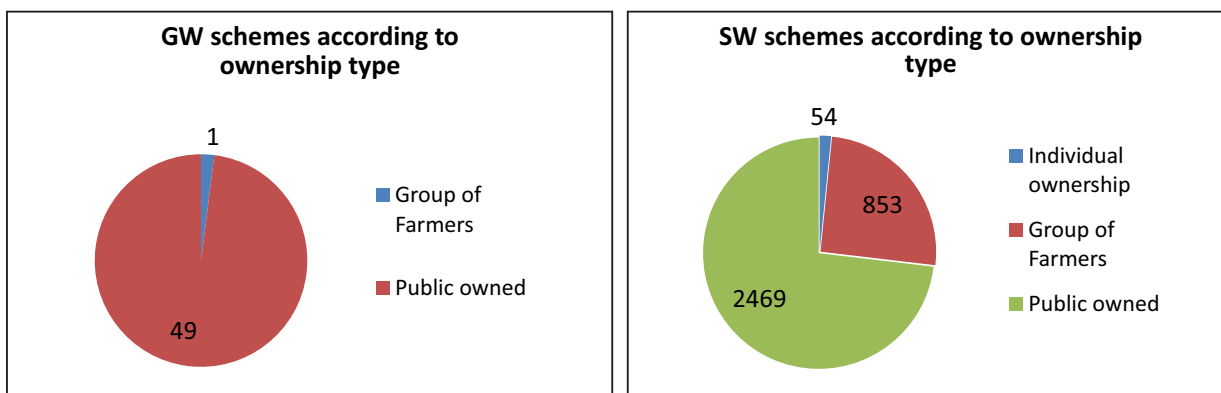
The State Government has reported a decline of 20.6% (13) in GW schemes and 28.4 % (1,340) in SW schemes during 6th MI census as compared to the 63 GW schemes and 4,716 SW schemes recorded in 5th census.

Out of the 3,426 MI schemes reported in Arunachal Pradesh, 98.5% (3,374) are surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.

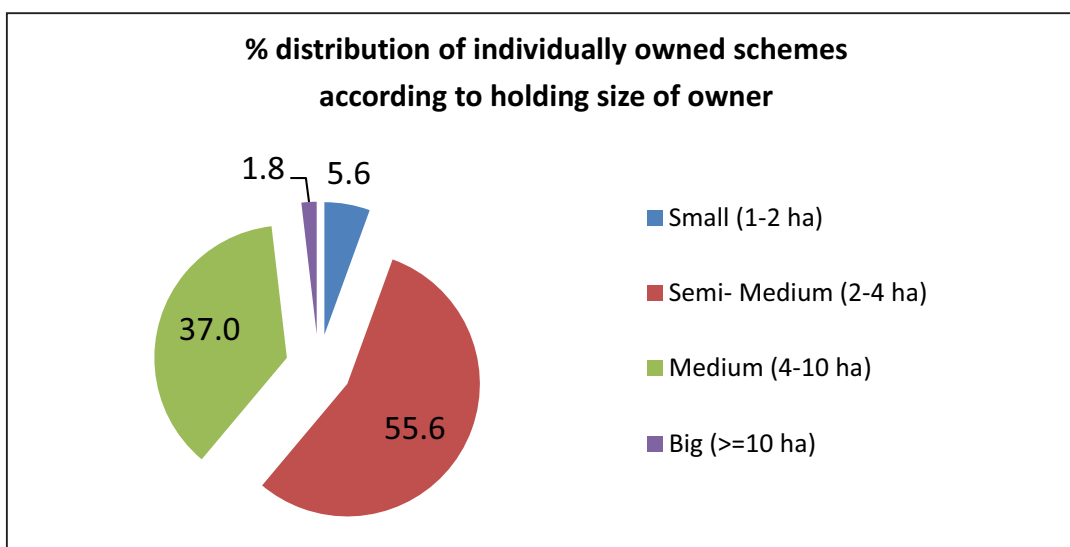


Ownership of MI Schemes

Out of 3,426 MI schemes, majority of the schemes i.e. 73.5% (2,518) continue to remain under public ownership, 24.9% (854) schemes are owned by group of farmers and a small chunk of 1.6% (54) schemes are individually owned. Most of MI structures in Arunachal Pradesh are under public ownership as brought out in the figure given below.



Out of 54 individually owned schemes, based on holding size of owner, semi-medium farmers (having holding size 2-4 hectares) own a share of 55.6 % (30) in MI schemes. Percentage distribution of individually owned schemes according to holding size of owner is also shown in the chart given below.

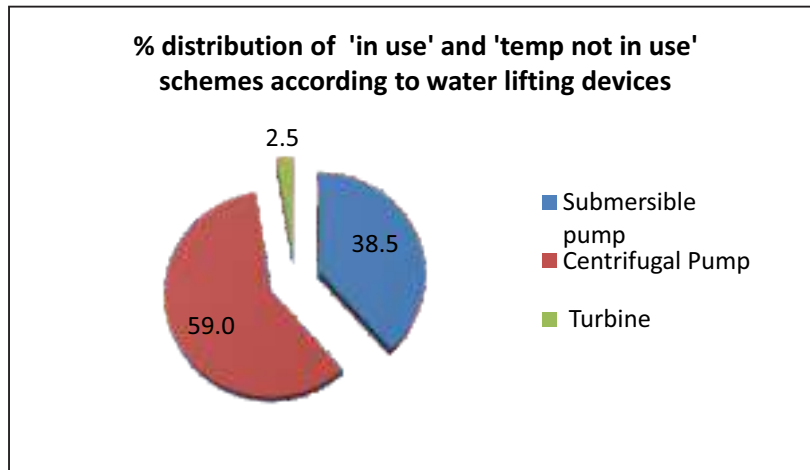


Financing of MI Schemes

The information on source of finance has been collected in the census for the schemes owned by individual farmer which is 54. All these schemes have more than one source of finance. Most of the farmers have opted for the combination of Government funds and own savings for financing the schemes.

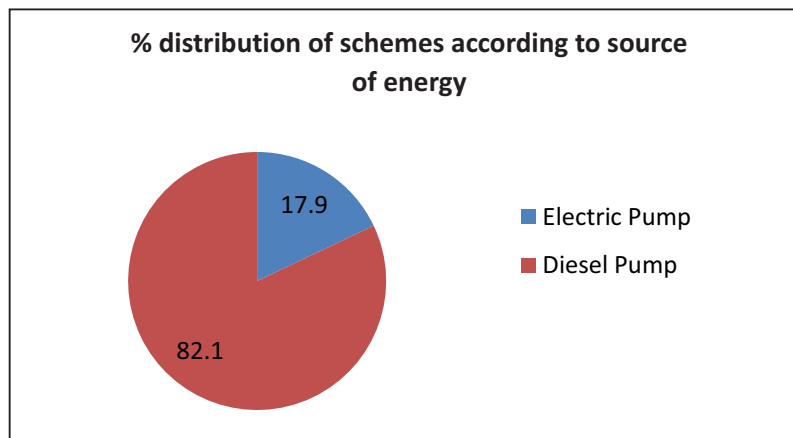
Distribution of lifting devices in MI Schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 39, out of 3,426 MI schemes. Out of these (39) schemes, majority of schemes i.e 59.0% (23) have centrifugal pump and 38.5% (15) schemes have submersible pump as lifting device and remaining 2.5% (1) is operated by turbines. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



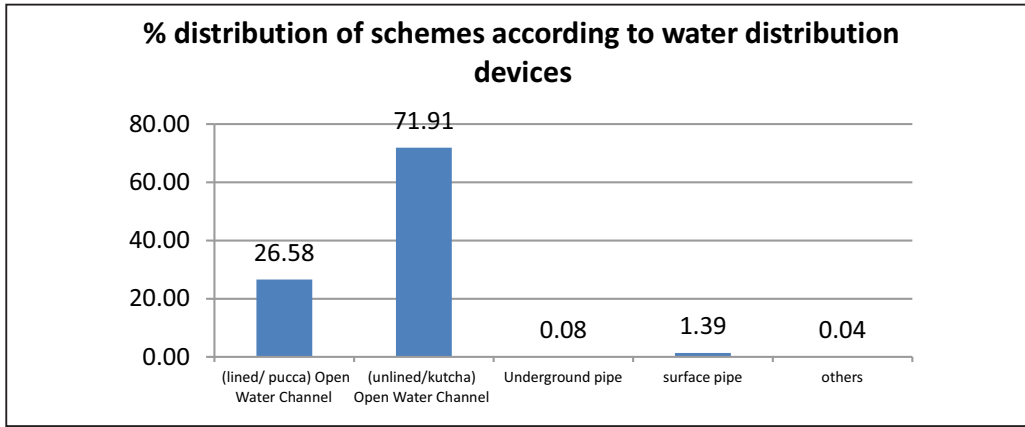
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 39. Out of these schemes, majority of schemes i.e 82.1% (32) schemes are using diesel pumps as source of energy followed by electricity in 17.9% (7) schemes. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



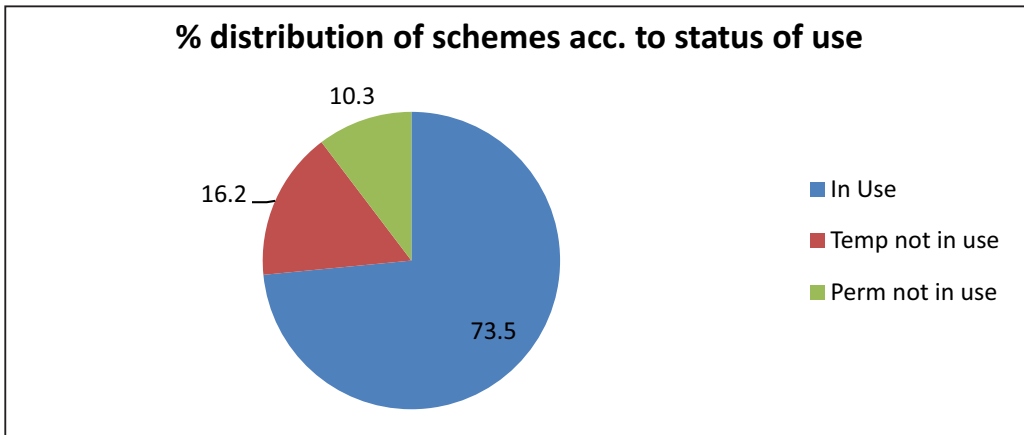
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchha) is 71.91% (1,810) followed by 26.58% (669) open water channel (lined/pucca), 1.39% (35) surface pipes, 0.08% (2) underground pipes and 0.04%(1) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

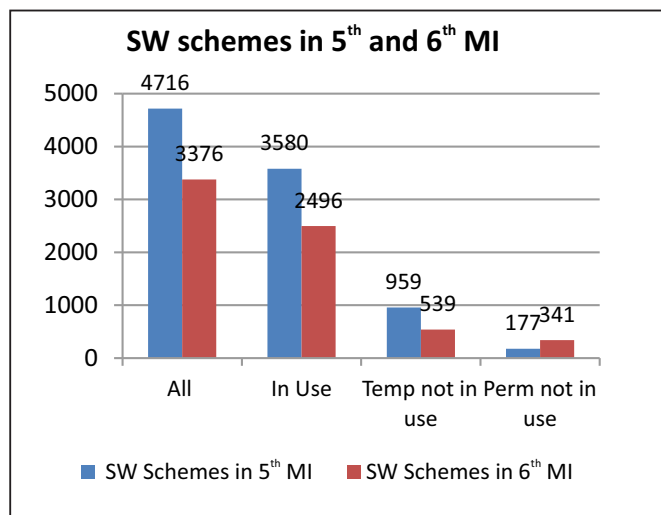
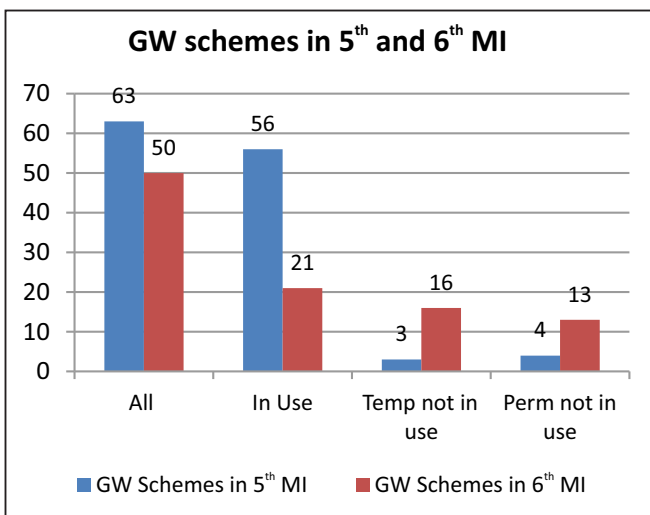


Status of MI schemes

Out of 3,426 MI schemes, 73.5% (2,517) are 'in use', 16.2% (555) are 'temporarily not in use' and 10.3% (354) are 'permanently not in use' schemes which is depicted in the pie chart given below.

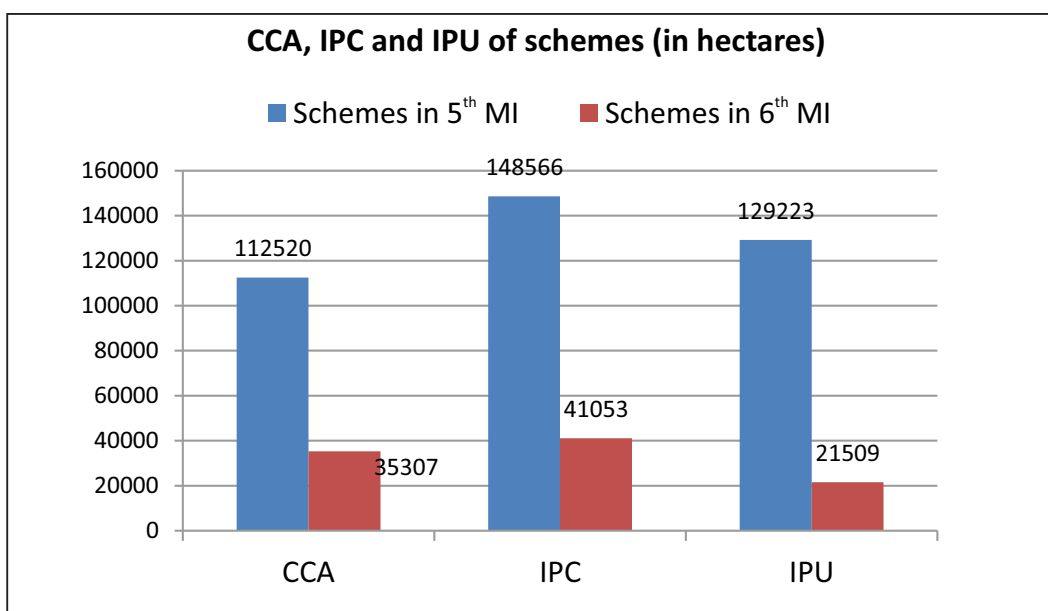


Out of 555 'temporarily not in use' schemes, 16 are GW schemes and 539 are SW schemes. Among 354 'permanently not in use' schemes, 13 are GW schemes and 341 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

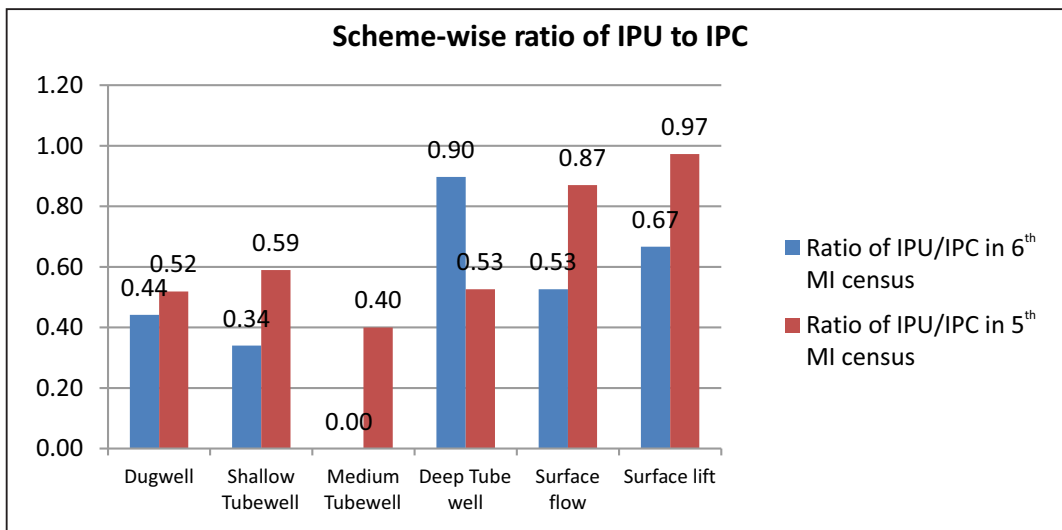
There has been significant decline of 72.4% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has declined from 1,48,566 hectares during 5th MI census to 41,054 hectares during 6th MI census. Irrigation potential utilized was 1,29,223 hectares during 5th MI Census in Arunachal Pradesh, which has declined by 83.4% 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, 1,779 hectares irrigation potential is created through GW schemes and 3,92,74 hectares through SW schemes. Irrigation potential utilized is 826 hectares and 20,683 hectares for GW and SW schemes, respectively. This shows that only 46.4% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 52.7%. The scheme-wise ratio of IPU to IPC in Arunachal Pradesh is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	867	383	0.44
Shallow Tubewell	558	190	0.34
Medium Tubewell	72	0	0.00
Deep Tube well	282	253	0.90
Surface flow	39,199	20,633	0.53
Surface lift	75	50	0.67

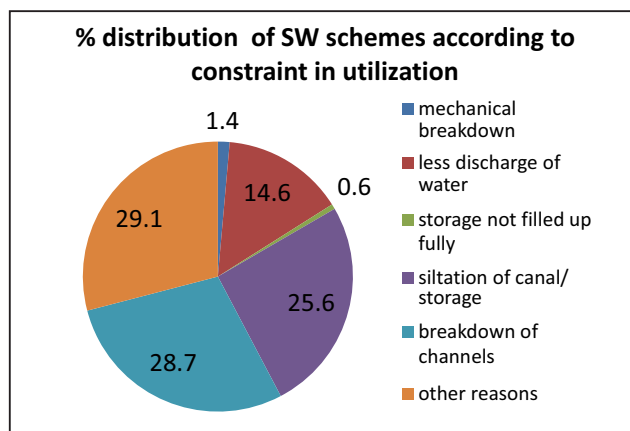
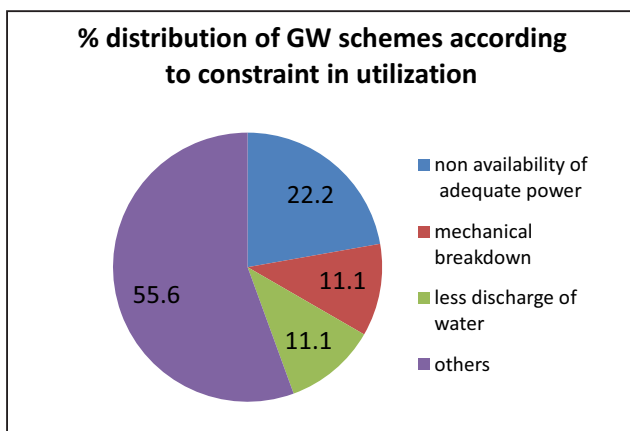
Surface flow schemes have the highest IPC & IPU followed by dugwell and shallow tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show 30% or more utilization of the potential created except medium tubewell scheme which is not at all utilized. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th MI census and 5th MI census is given below.



Under utilization 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, 508 (20.2%) schemes out of 2,517 'in use' schemes in Arunachal Pradesh are under-utilised due to several reasons. Remaining 79.8% 'in use' MI schemes are functioning without any constraints.

Among 508 under-utilized schemes, 9 are GW schemes and 499 are SW schemes. The major factor contributing to constraints in utilization of SW schemes is reported to be break-down of channels, siltation of canal/ storage, less discharge of water etc. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in charts given below.



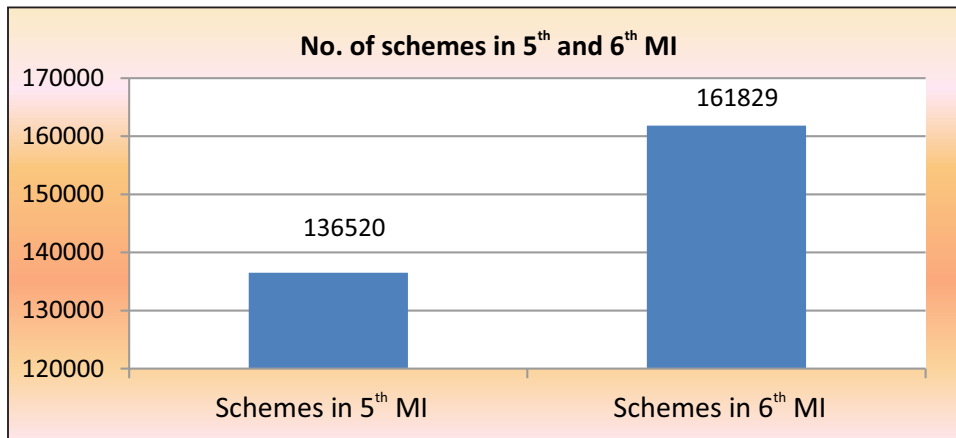
Key Parameters of 6 th MI Census-Arunachal Pradesh						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	25			0.73
	Shallow Tubewell	No.	18			0.53
	Medium Tubewell	No.	2			0.06
	Deep Tubewells	No.	5			0.15
	Ground Water schemes	No.	50			1.46
	Surface Flow	No.	3,374			98.48
	Surface Lift	No.	2			0.06
	Surface Water schemes	No.	3,376			98.54
	Total schemes	No.	3,426			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	1,496	33,811	35,307	
	IPC	Ha	1,780	39,274	41,054	
	IPU	Ha	826	20,683	21,509	
	IPC of in use schemes	Ha	762	25,744	26,506	
	IPU of in use schemes	Ha	690	18,440	19,130	
	% Ratio of IPU wrt IPC	%	46.40	52.66	52.39	
	Gap in IPC and IPU	Ha	954	18,591	19,545	
Ownership	Individual ownership	No.	0	54	54	1.58
	Group of Farmers	No.	1	853	854	24.93
	Public owned	No.	49	2,469	2,518	73.50
	Total	No.	50	3,376	3,426	100.00
Social Status of Individual Owner	SC	No.	0	2	2	3.70
	ST	No.	0	52	52	96.30
	OBC	No.	0	0	0	0.00
	Others	No.	0	0	0	0.00
	Total Individual	No.	0	54	54	100.00

Key Parameters of 6th MI Census-Arunachal Pradesh

Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	11	658	669	26.58
	Open Water Channel (unlined/ kutcha)	No.	7	1,803	1,810	71.91
	Underground pipe	No.	2	0	2	0.08
	Surface Pipe	No.	1	34	35	1.39
	Drip	No.	0	0	0	0.00
	Sprinklers	No.	0	0	0	0.00
	Others	No.	0	1	1	0.04
	Total	No.	21	2,496	2,517	100.00

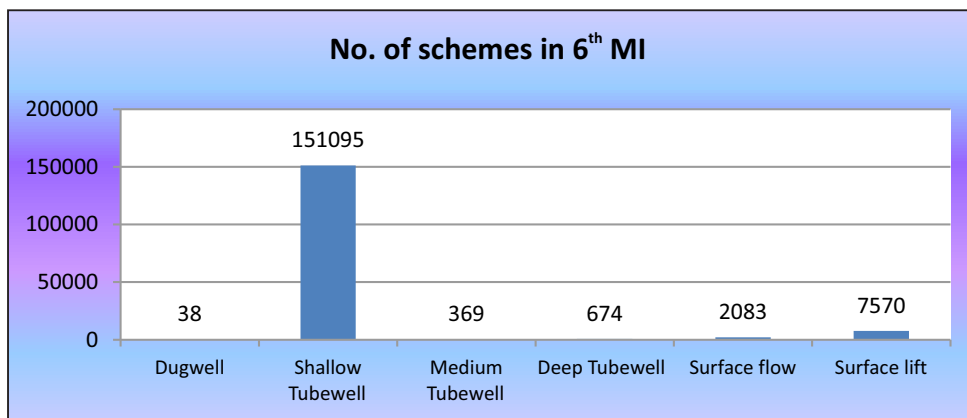
ASSAM

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Assam has 1,61,829 MI schemes comprising of 94% (1,52,176) Ground Water (GW) schemes and 6% (9,653) Surface Water (SW) schemes. There has been increase to the tune of 18.5% in 6th MI census as compared to the 1,36,520 schemes in 5th MI census in the State of Assam.



The State Government has reported growth by 18.8% (24,071) in GW schemes and 14.7% (1,238) in SW schemes during 6th MI census as compared to the 1,28,105 GW schemes and 8,415 SW schemes recorded in 5th census.

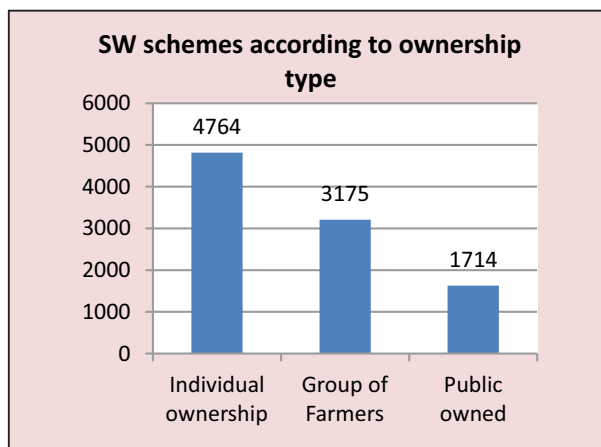
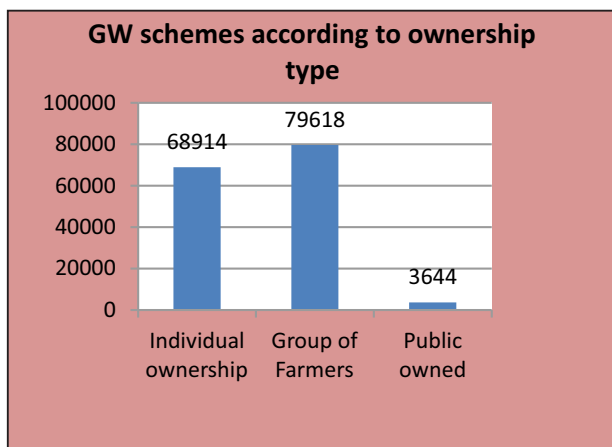
Out of 1,61,829 MI schemes reported in Assam, 93.4% (1,51,095) are shallow tube wells followed by 4.7% (7,570) surface lift and 1.3% (2,083) surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.



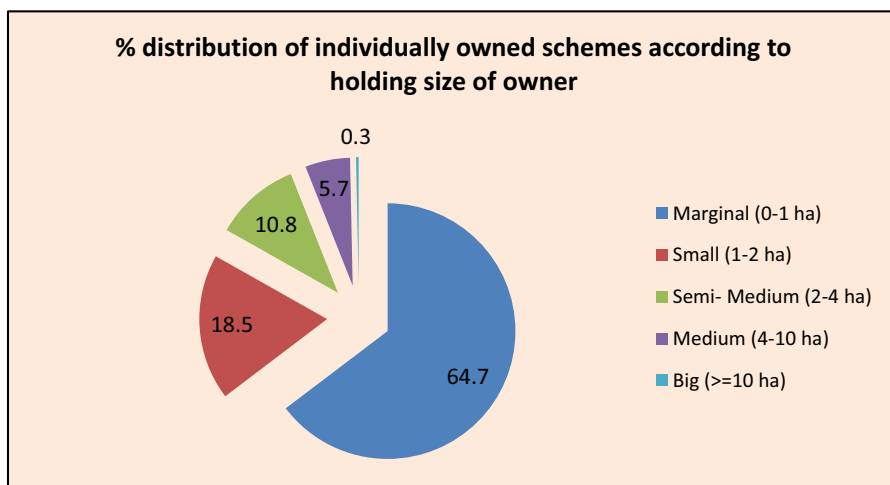
Ownership of MI schemes

Out of 1,61,829 MI schemes, majority of the schemes i.e. 51.2% (82,793) are with group of farmers, 45.5% (73,678) schemes are under individual ownership and a small chunk of 3.3% (5,358) schemes are public owned. Among 1,52,176 GW schemes, 52.3% (79,618) schemes are with group of farmers and among 9,653 SW schemes, 49.3% (4,764) are owned by individual farmers.

Most of MI structures in Assam are owned by group of farmers/individual farmers which has been brought out in the figure given below.

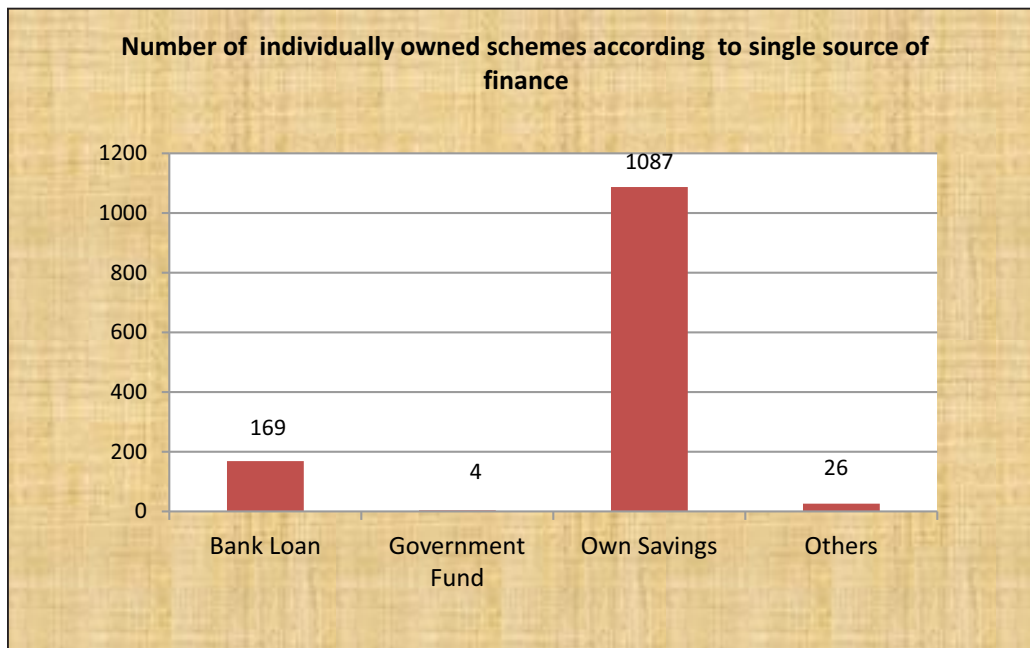


Out of 73,678 individually owned schemes, based on holding size of owner, marginal farmers own a major share of 64.7% (47,638) in MI schemes. Rest of the 35.3% schemes are owned by small farmers, semi-medium, medium and big farmers which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of marginal farmers.



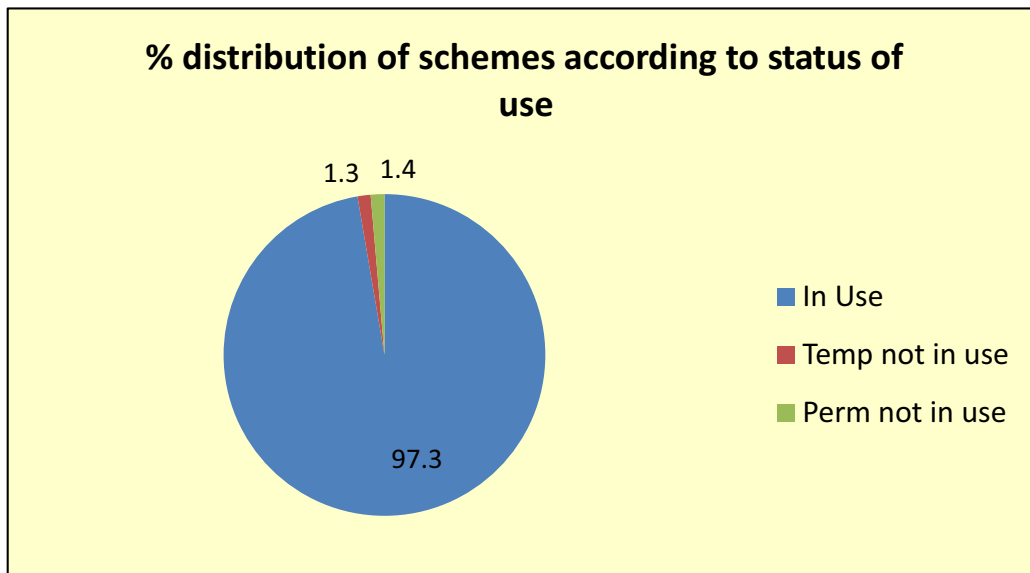
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 73,678 individually owned schemes, 1.7% (1,286) have single source of finance whereas 98.3% (72,392) have more than one source of finance. In these schemes with single source of finance (1,286), majority of schemes i.e. 84.5% (1,087) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 13.1% (169), Government fund 0.3% (4) and others 2.1% (26). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.

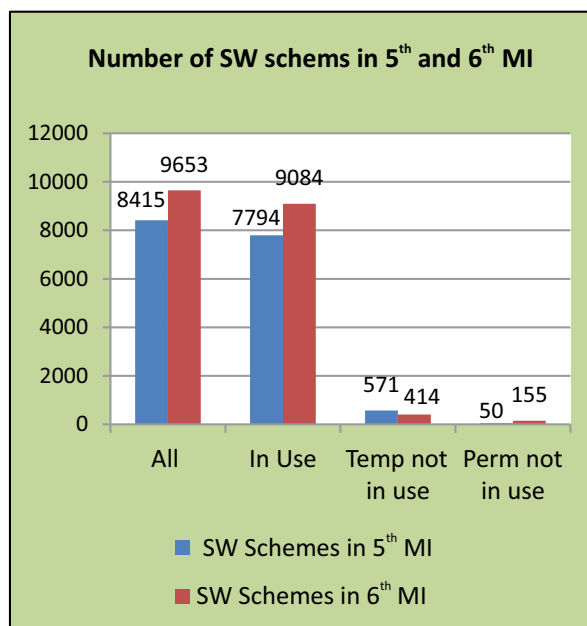
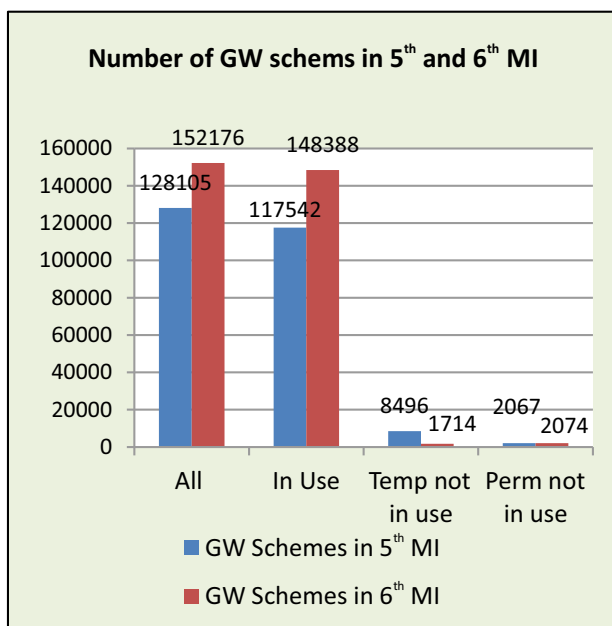


Status of MI schemes

Out of 1,61,829 MI schemes, 97.3% (1,57,472) are 'in use', 1.3% (2,128) are 'temporarily not in use' and only 1.4% (2,229) are 'permanently not in use' schemes which is depicted in the pie chart given below.

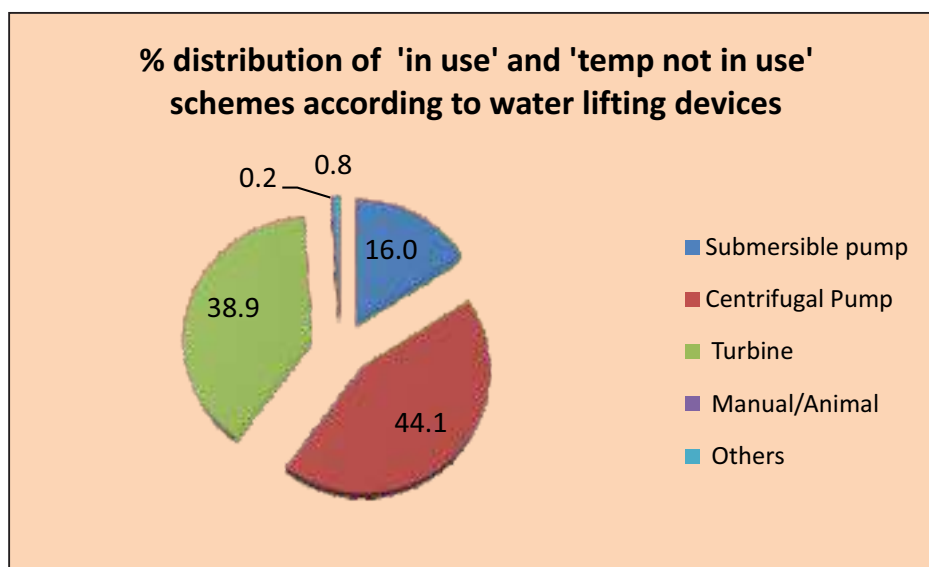


Out of 2,128 'temporarily not in use' schemes, 1,714 are GW schemes and 414 are SW schemes. Among 2,229 'permanently not in use' schemes, 2,074 are GW schemes and 155 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



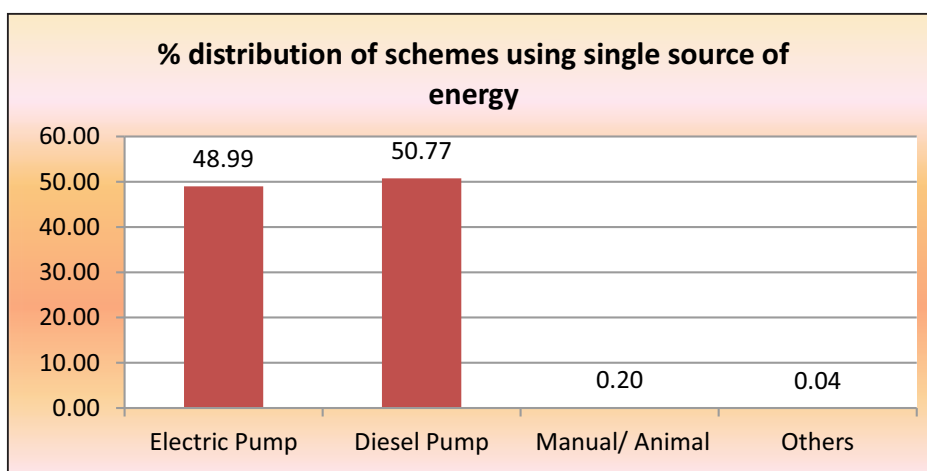
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 1,57,576, out of 1,61,827 MI schemes. Out of these (1,57,576) schemes, majority of schemes i.e 44.1% (69,535) have centrifugal pump and 38.9% (61,224) schemes have turbine as lifting device. 16.0% (25,148) schemes are operated by submersible pump for water lifting purposes, 0.2% (319) are operated with manual or animal lifting devices and rest 0.8% (1,350) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



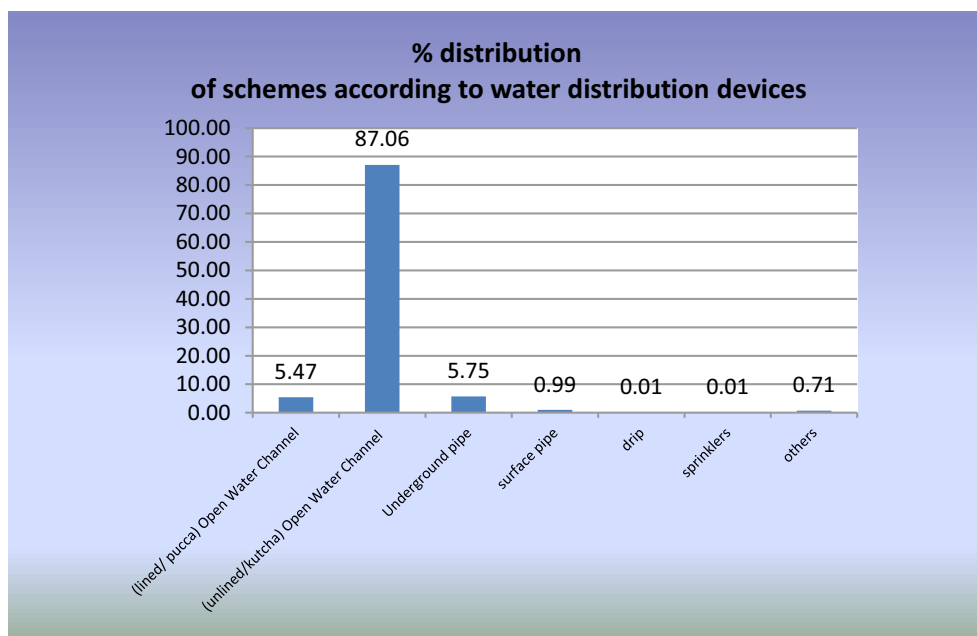
Distribution of source of energy

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 fall under the category of ground water and surface lift schemes. The number of such schemes is 1,57,576. Out of these schemes, majority of schemes i.e 50.77% (80,005) schemes are using diesel pump as source of energy followed by electric pumps in 48.99% (77,196) schemes. In rest of the cases, 0.2% (319) schemes are using manual/animal as source of energy followed by 0.04% (56) schemes with wind mills, solar pumps and other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



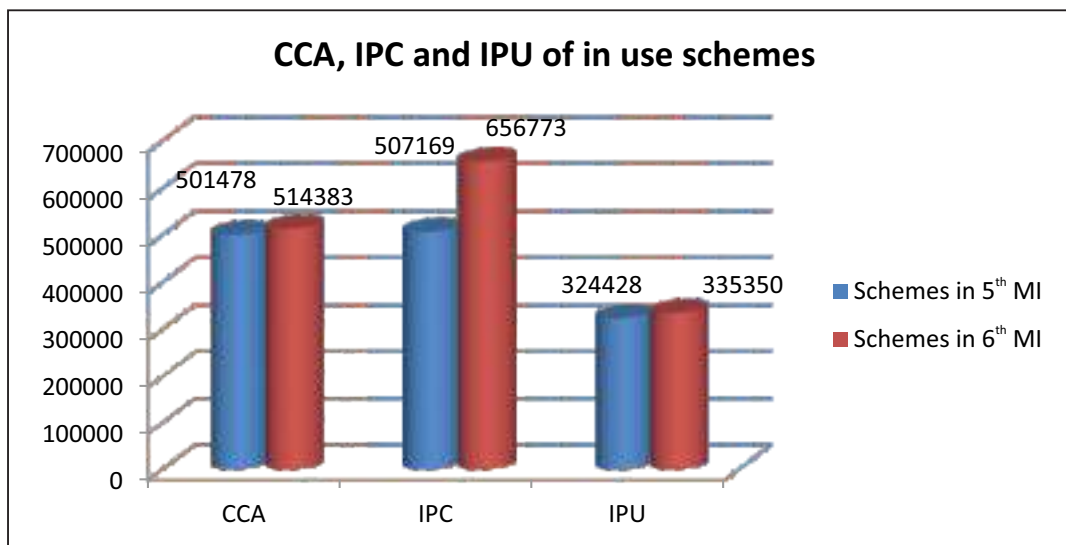
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 87.06% (1,37,097) followed by 5.75% (9,057) through underground pipe and 5.47% (8,606) through open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are 0.99% (1,560) surface pipes, 0.01% (18) sprinklers, 0.01% (8) drip and 0.71% (1,126) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



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

There has been increase of 29.5% 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 5,07,169 hectares during 5th MI census to 6,56,773 hectares during 6th MI census. Irrigation potential utilized was 3,24,428 hectares during 5th MI Census in Assam, which has increased by 3.3% 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.

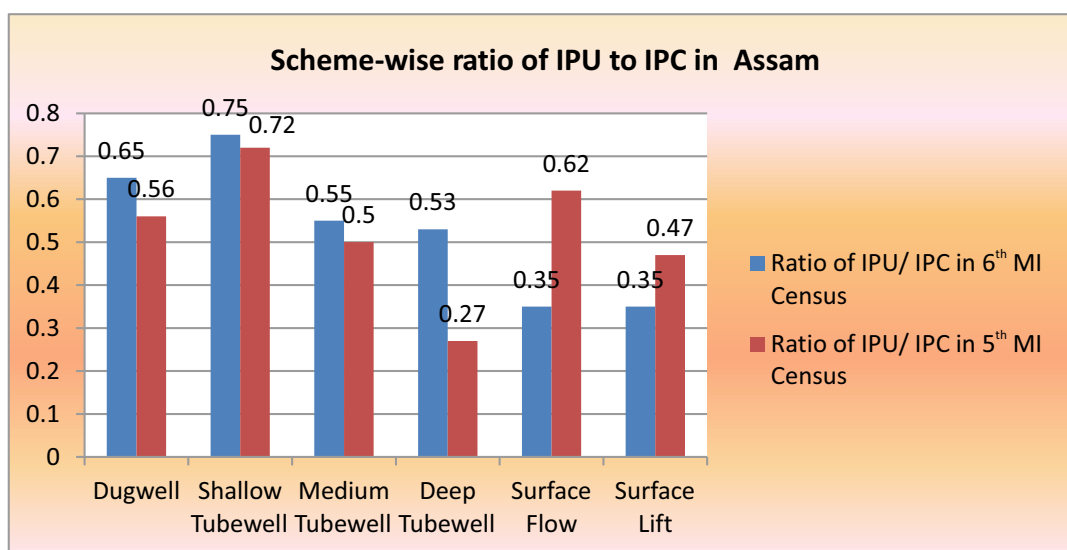


As per 6th MI Census, 2,69,609 hectares irrigation potential is created through GW schemes and 3,87,164 hectares through SW schemes. Irrigation potential utilized is 1,97,606 hectares and 1,37,745 hectares for GW and SW schemes, respectively. This shows that 73.3 % of the potential created through GW schemes

has been utilized while percentage utilization in respect of SW schemes is 35.6%. The scheme-wise ratio of IPU to IPC in Assam is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Assam			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	561	366	0.65
Shallow Tubewell	2,48,904	1,86,468	0.75
Medium Tubewell	2,352	1,305	0.55
Deep Tubewell	17,792	9,467	0.53
Surface flow	2,57,948	92,045	0.35
Surface lift	1,29,216	45,700	0.35

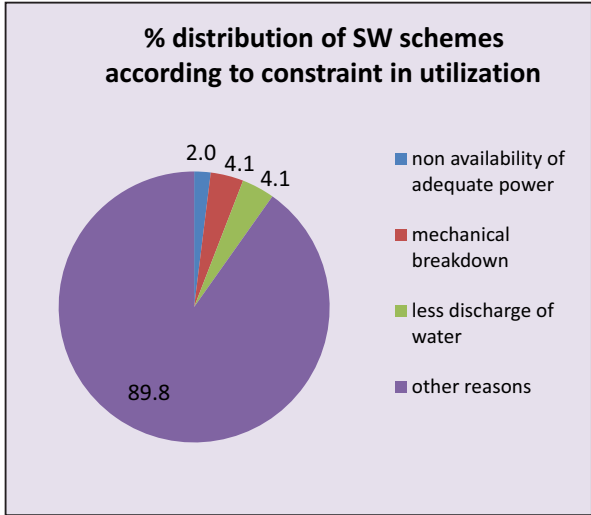
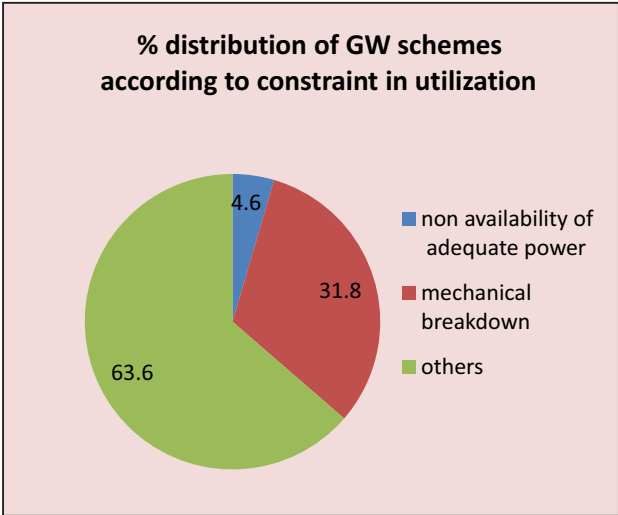
Shallow tubewells have the highest IPC & IPU followed by surface flow and surface lift schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, four schemes show more than 50% utilization whereas two schemes. i.e surface flow and surface lift show 30% utilization of the potential created. 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, 71 (0.05%) schemes out of 1,57,472 'in use' schemes in Assam are under-utilized due to several reasons. Remaining 99.95% 'in use' MI schemes are functioning without any constraints.

Among 71 under-utilized schemes, 22 are GW schemes and 49 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.

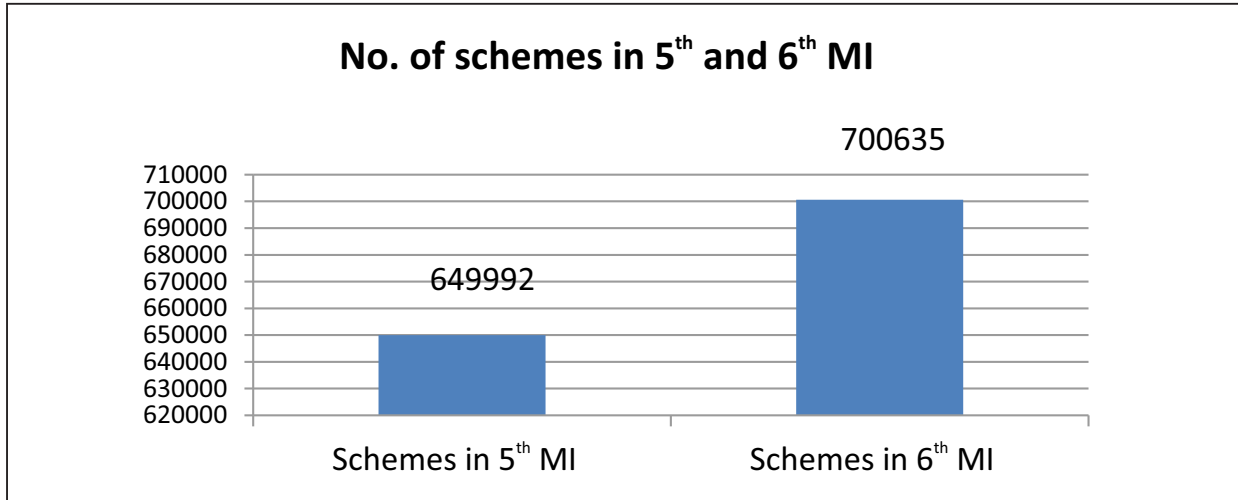


Key Parameters of 6 th MI Census- Assam						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	38			0.02
	Shallow Tubewell	No.	1,51,095			93.37
	Medium Tubewell	No.	369			0.23
	Deep Tubewells	No.	674			0.42
	Ground Water schemes	No.	1,52,176			94.04
	Surface Flow	No.	2,083			1.29
	Surface Lift	No.	7,570			4.68
	Surface Water schemes	No.	9653			5.96
	Total schemes	No.	1,61,829			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	2,11,934	3,02,448	5,14,382	
	IPC	Ha	2,69,609	3,87,164	6,56,773	
	IPU	Ha	1,97,606	1,37,745	3,35,351	
	IPC of in use schemes	Ha	2,56,393	3,20,343	5,76,736	
	IPU of in use schemes	Ha	1,93,189	1,28,397	3,21,586	
	% Ratio of IPU wrt IPC	%	73.29	35.58	51.06	
	Gap in IPC and IPU	Ha	72,003	2,49,419	3,21,422	
Ownership	Individual ownership	No.	68,914	4,764	73,678	45.53
	Group of Farmers	No.	79,618	3,175	82,793	51.16
	Public owned	No.	3,644	1,714	5,358	3.31
	Total	No.	1,52,176	9,653	1,61,829	100.00
Social Status of Individual Owner	SC	No.	1,366	33	1,399	1.90
	ST	No.	3,587	355	3,942	5.35
	OBC	No.	4,564	283	4,847	6.58
	Others	No.	59,397	4,093	63,490	86.17
	Total Individual	No.	68,914	4,764	73,678	100.00

Key Parameters of 6 th MI Census- Assam						
Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	7,805	801	8,606	5.47
	Open Water Channel (unlined/ kutcha)	No.	1,29,175	7,922	1,37,097	87.06
	Underground pipe	No.	8,965	92	9,057	5.75
	Surface Pipe	No.	1,405	155	1,560	0.99
	Drip	No.	8	0	8	0.01
	Sprinklers	No.	16	2	18	0.01
	Others	No.	1,014	112	1,126	0.72
	Total	No.	1,48,388	9,084	1,57,472	100.00

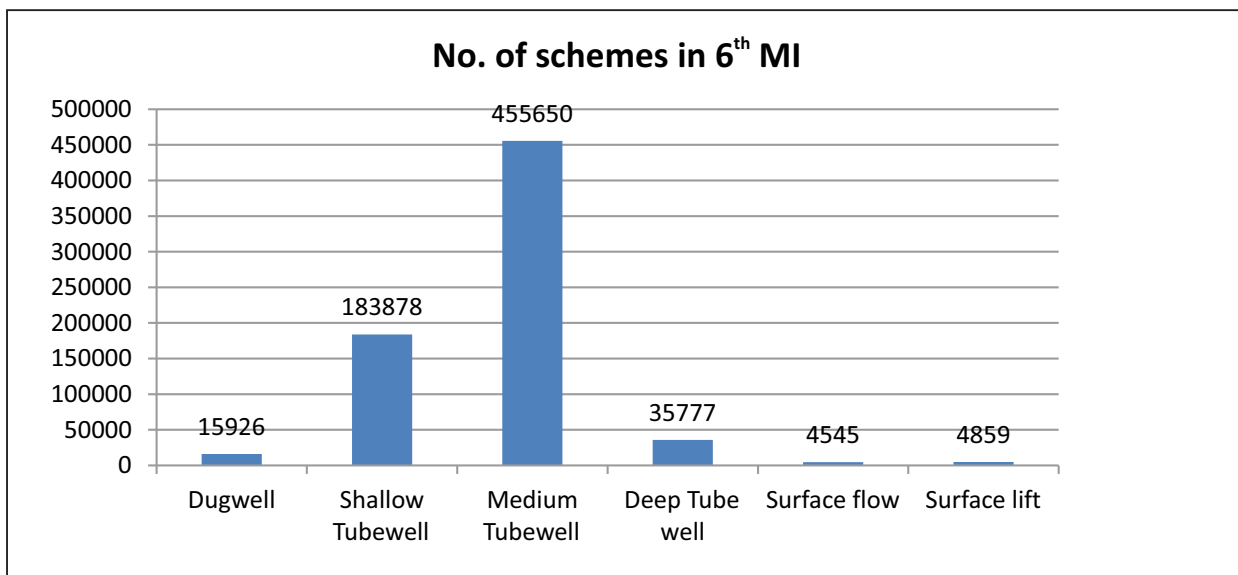
BIHAR

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Bihar has 7,00,635 MI schemes comprising of 98.7% (6,91,231) Ground Water (GW) schemes and 1.3% (9,404) Surface Water (SW) schemes. There has been an increase to the tune of 7.8% in 6th MI census as compared to the 6,49,992 schemes in 5th MI census in the State of Bihar. Key parameters of 6th MI Census for the State of Bihar are given in the Annexure.



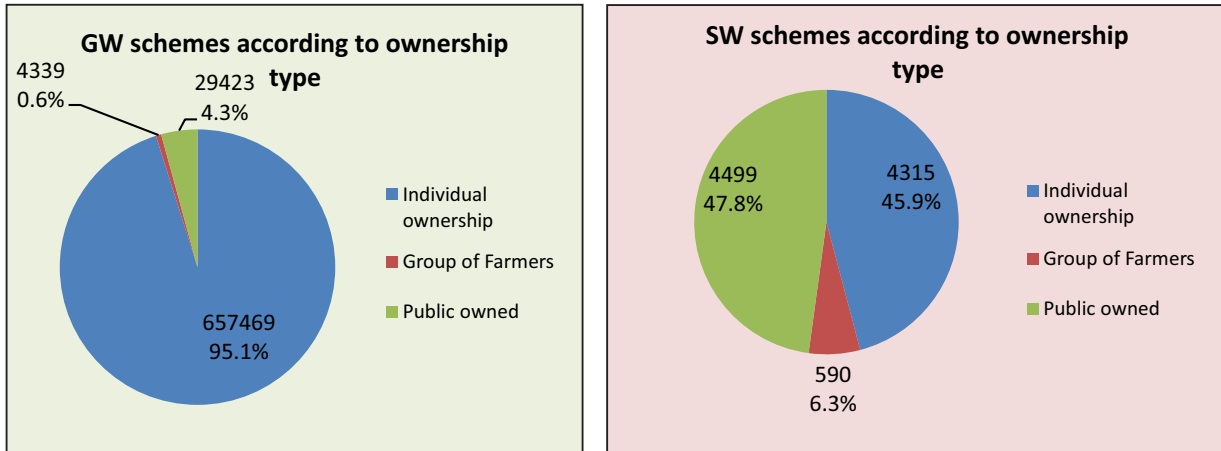
The State Government has reported an increase of 7.4% (47,734) in GW schemes and 44.8% (2,909) in SW schemes during 6th MI census as compared to the 6,43,497 GW schemes and 6,495 SW schemes recorded in 5th MI census.

Out of the 7,00,635 MI schemes reported in Bihar, 65% (4,55,650) are medium tubewell followed by 26.2% (1,83,878) shallow tube well and 5.1% (35,777) deep tube well schemes. Distribution of different GW and SW schemes is shown in the chart given below.

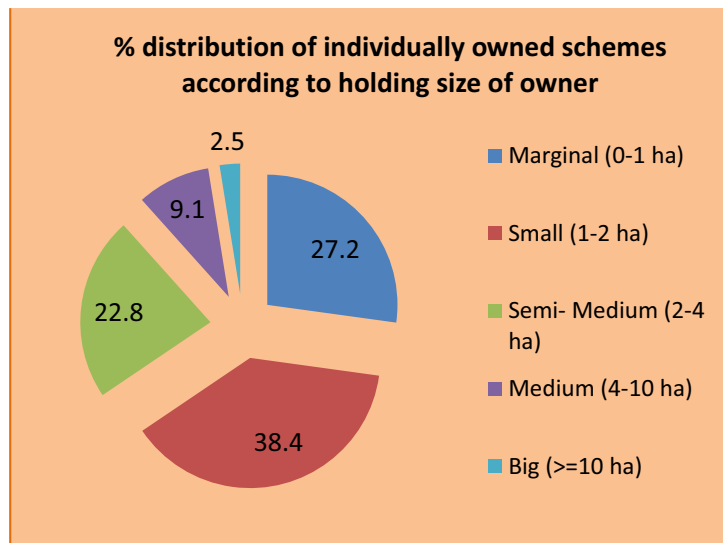


Ownership of MI schemes

Out of 7,00,635 MI schemes, majority of the schemes i.e. 94.5% (6,61,784) continue to remain under individual ownership, 4.8% (33,922) schemes are public owned and a small chunk of 0.7% (4,929) schemes are owned by group of farmers. Among 6,91,231 GW schemes, 95.1% (6,57,469) schemes are individually owned and among 9,404 SW schemes, 47.8% (4,499) are public owned which is also shown in the figures given below.

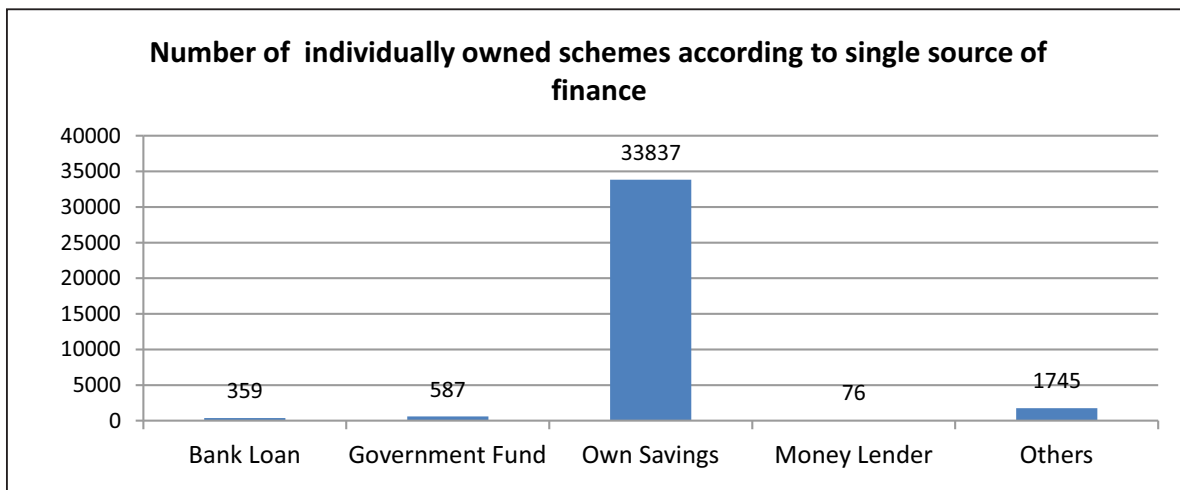


Out of the 6,61,784 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 65.5% (4,33,741) in MI schemes. Rest of the 34.5% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI Structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



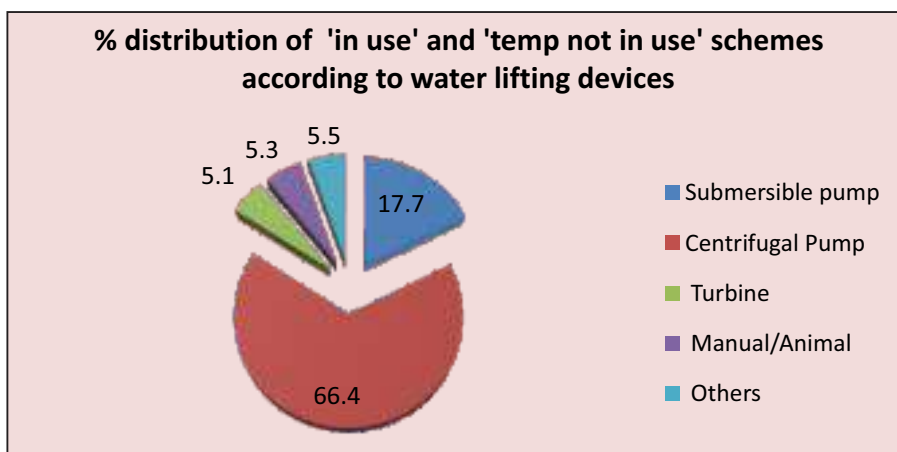
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 6,61,784 individually owned schemes, 5.5% (36,604) have single source of finance whereas 94.5% (6,25,180) have more than one source of finance. In these schemes with single source of finance (36,604), majority of schemes i.e. 92.4% (33,837) are being financed by own savings of individual farmer. Other reported sources of finance are Government fund 1.6% (587), bank loan 1% (359), money lenders 0.2% (76) and others 4.8% (1,745). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



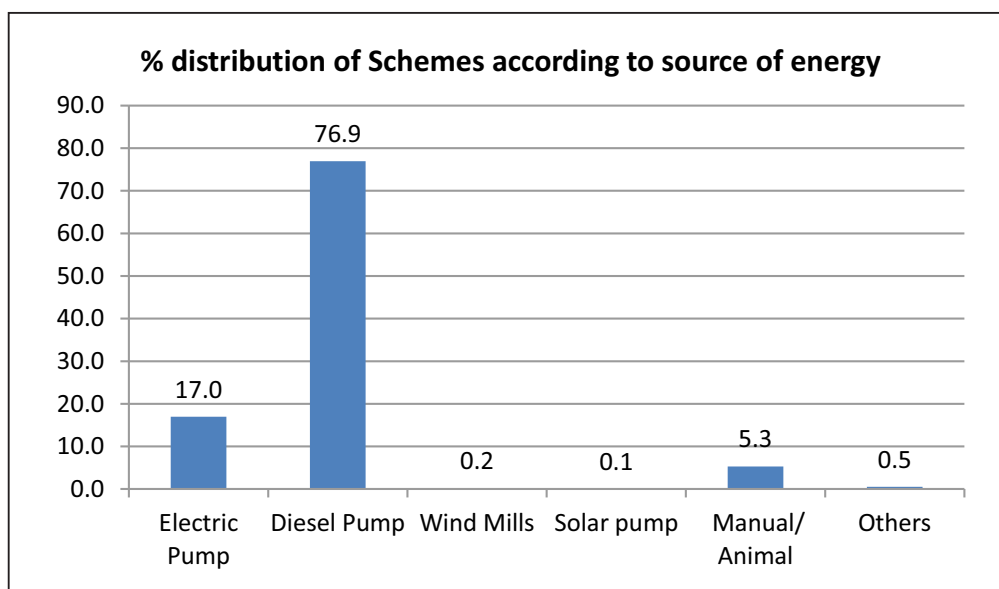
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 6,93,634, out of the total 7,00,635 MI schemes. Out of these (6,93,634) schemes, majority of schemes i.e 66.4% (4,60,858) have centrifugal pump and 17.7% (1,22,538) schemes have submersible pump as lifting device. 5.3% (36,788) schemes are being operated by manual/ animal lifting devices, 5.1% (35,640) have turbines and rest 5.5% (37,810) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



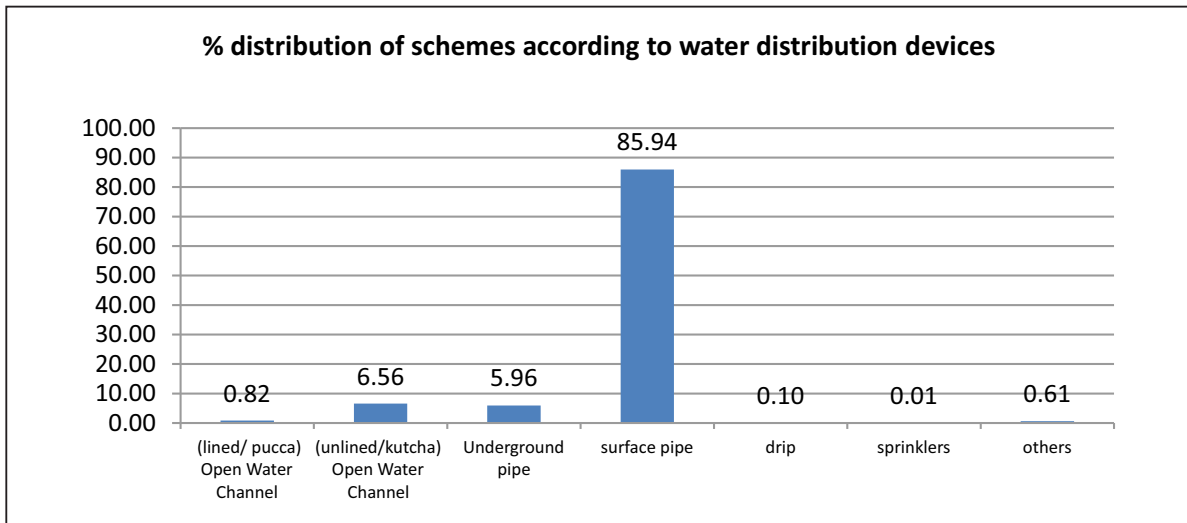
Distribution of source of energy

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 6,93,634. Out of these schemes, majority of schemes i.e. 76.9% (5,33,615) schemes are using diesel pump as source of energy followed by electricity in 17.0% (1,17,590) schemes. In rest of the cases, 5.3% (36,788) schemes are using manual/animal as source of energy followed by 0.2% (1,335) windmills, 0.1% (595) solar pumps whereas 0.5% (3,711) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



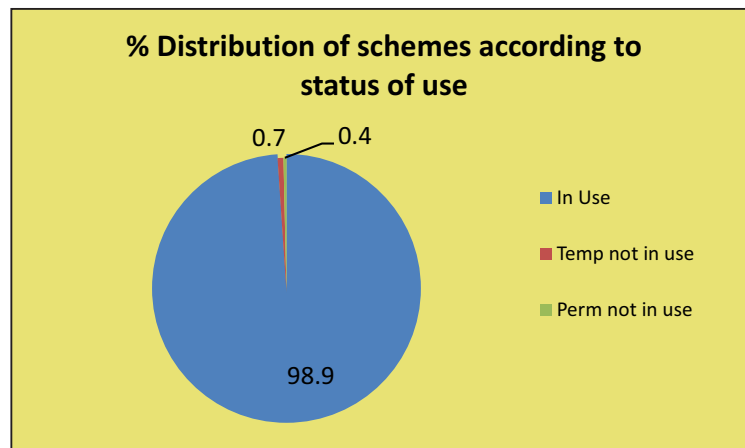
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipe is 85.94% (5,95,742) followed by 6.56% (45,455) open water channel (unlined/kutchha) and 5.96% (41,282) underground pipe. The water distribution devices used in the rest of the MI schemes are 0.82% (5,704) open water channel (lined/pucca), 0.10% (682) drip, 0.01% (98) sprinklers and 0.61% (4,259) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

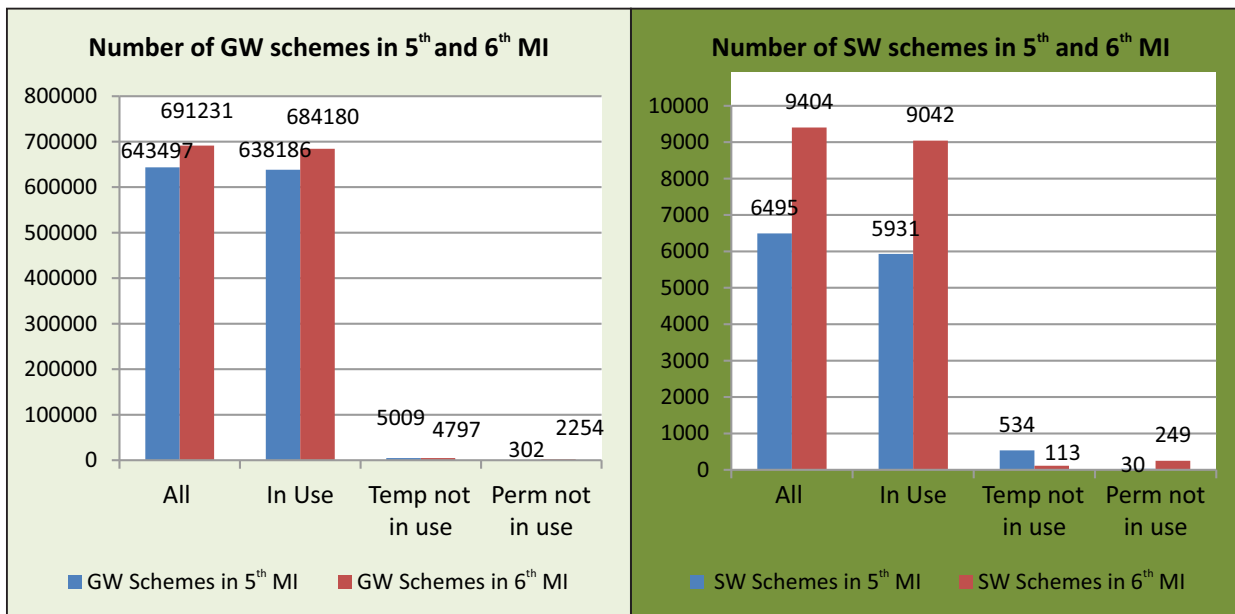


Status of MI schemes

Out of total number of 7,00,635 MI schemes, 98.9% (6,93,222) are 'in use', 0.7% (4,910) are 'temporarily not in use' and only 0.4% (2,503) are 'permanently not in use' schemes which is depicted in the pie chart given below.

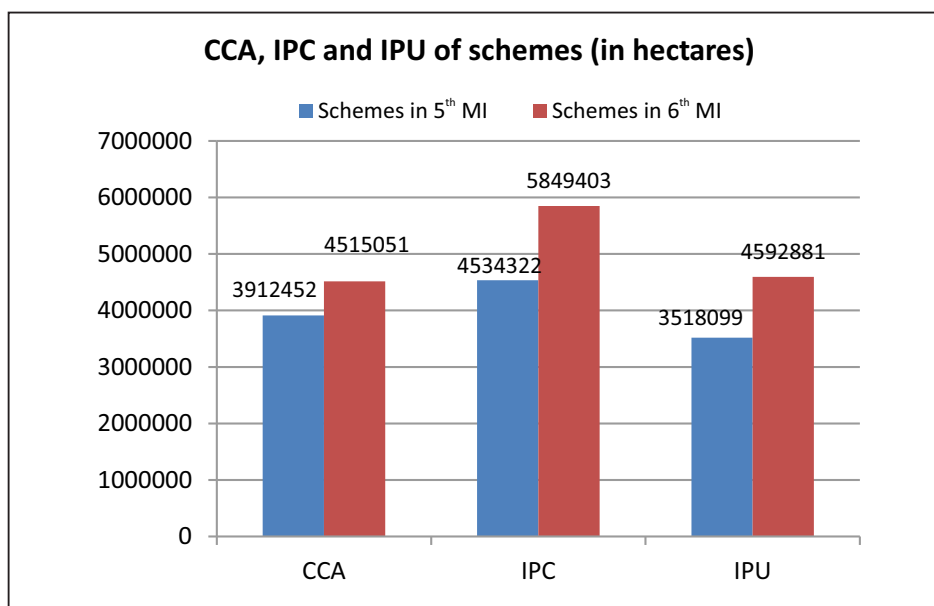


Out of 4,910 'temporary not in use' schemes, 4,797 are GW schemes and 113 are SW schemes. Among 2,503 'permanently not in use' schemes, 2,254 are GW schemes and 249 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been an increase of 29.0% 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 45,34,322 hectares during 5th MI census to 58,49,403 hectares during 6th MI census. Irrigation potential utilized was 35,18,099 hectares during 5th MI Census in Bihar, which has increased by 30.6% 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.

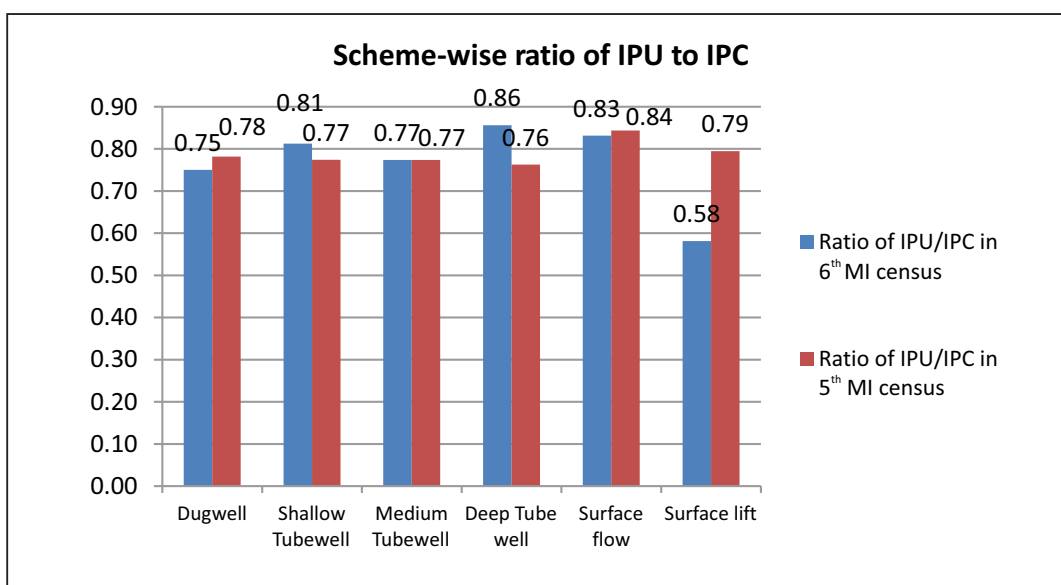


As per 6th MI Census, 56,96,870 hectares irrigation potential is created through GW schemes and 1,52,533 hectares through SW schemes. Irrigation potential utilized is 44,85,158 hectares and 1,07,723 hectares for

GW and SW schemes, respectively. This shows that 78.7% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 70.6%. The scheme-wise ratio of IPU to IPC in Bihar is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	1,34,598.5	1,01,002.4	0.75
Shallow Tubewell	12,99,638	10,56,146	0.81
Medium Tubewell	39,09,568	30,25,705	0.77
Deep Tubewell	3,53,066.7	3,02,304.6	0.86
Surface flow	76,173.58	63,325.65	0.83
Surface lift	76,359.37	44,397.3	0.58

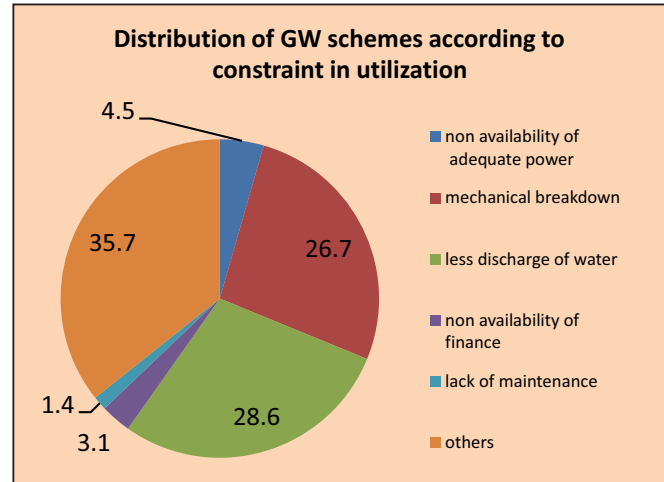
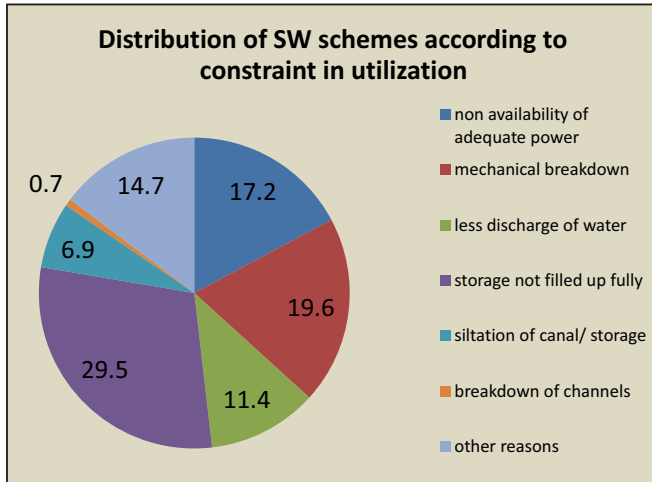
Medium tubewell have the highest IPC & IPU followed by deep tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 75% utilization of the potential created except surface lift scheme with a utilization of 58% of potential created. 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, 6.2% (42,694) schemes out of 6,93,222 'in use' schemes in Bihar are under-utilized due to several reasons. Remaining 93.8% 'in use' MI schemes are functioning without any constraints.

Among 42,694 under-utilized schemes, 41,077 are GW schemes and 1,617 are SW schemes. Many GW schemes are under-utilized because of 'less discharge of water' and mechanical breakdown whereas, the SW schemes are under-utilized due to storage not filled up fully, mechanical breakdown, non-availability of adequate power, 'less discharge of water' etc. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.



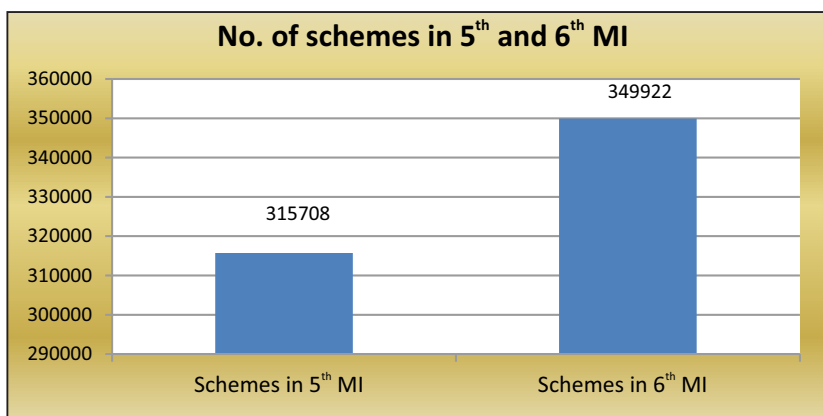
Key Parameters of 6 th MI Census-Bihar						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	15,926			2.27
	Shallow Tubewell	No.	1,83,878			26.24
	Medium Tubewell	No.	4,55,650			65.03
	Deep Tubewells	No.	35,777			5.11
	Ground Water schemes	No.	6,91,231			98.66
	Surface Flow	No.	4,545			0.65
	Surface Lift	No.	4,859			0.69
	Surface Water schemes	No.	9,404			1.34
	Total schemes	No.	7,00,635			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	43,99,151	1,15,900	45,15,051	
	IPC	Ha	56,96,871	1,52,533	58,49,404	
	IPU	Ha	44,85,158	1,07,723	45,92,881	
	IPC of in use schemes	Ha	56,58,679	1,41,168	57,99,847	
	IPU of in use schemes	Ha	44,57,231	1,06,551	45,63,782	
	% Ratio of IPU wrt IPC	%	78.73	70.62	78.52	
	Gap in IPC and IPU	Ha	12,11,713	44,810	12,56,523	
Ownership	Individual ownership	No.	6,57,469	4,315	6,61,784	94.45
	Group of Farmers	No.	4,339	590	4,929	0.70
	Public owned	No.	29,423	4,499	33,922	4.84
	Total	No.	6,91,231	9,404	7,00,635	100.00
Social Status of Individual Owner	SC	No.	59,706	561	60,267	9.11
	ST	No.	13,182	80	13,262	2.00
	OBC	No.	3,03,669	1,907	3,05,576	46.17
	Others	No.	2,80,912	1,767	2,82,679	42.71
	Total Individual	No.	6,57,469	4,315	6,61,784	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	5,288	416	5,704	0.82

Key Parameters of 6th MI Census-Bihar

Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutcha)	No.	42,595	2,860	45,455	6.56
	Underground pipe	No.	41,177	105	41,282	5.96
	Surface Pipe	No.	5,90,324	5,418	5,95,742	85.94
	Drip	No.	663	19	682	0.10
	Sprinklers	No.	97	1	98	0.01
	Others	No.	4,036	223	4,259	0.61
	Total	No.	6,84,180	9,042	6,93,222	100.00

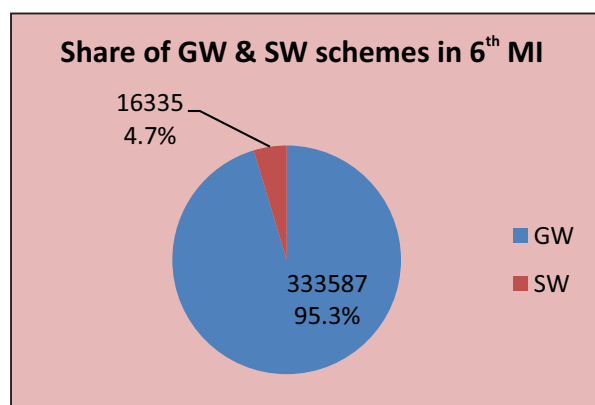
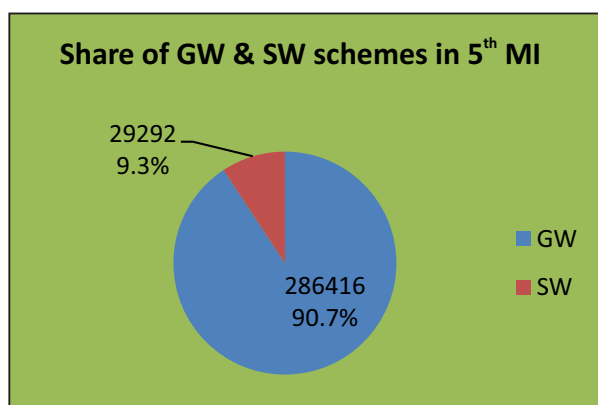
CHHATTISGARH

As per the 6th Census of Minor Irrigation (MI) schemes with reference year 2017-18, Chhattisgarh has 3,49,922 MI schemes comprising of 95.3% (3,33,587) Ground Water (GW) schemes and 4.7% (16,335) Surface Water (SW) schemes. There is an increase to the tune of 10.8 % in 6th MI census as compared to the 3,15,708 schemes in 5th MI census in the State of Chhattisgarh.

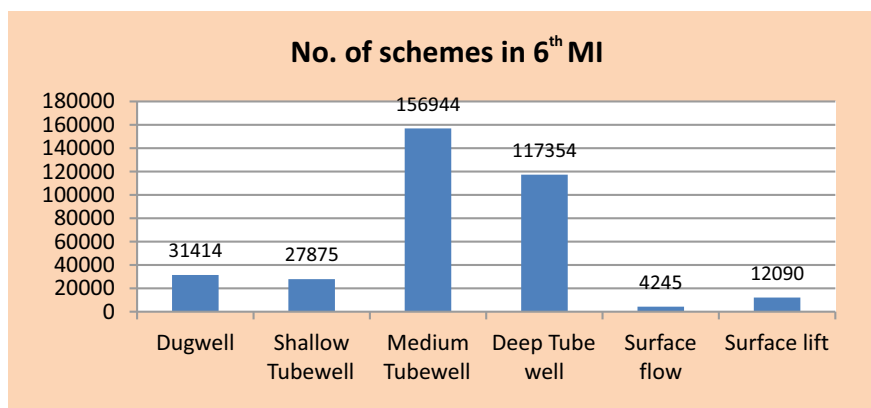


The State Government has reported increase of 16.4% (47,171) in GW schemes and a decline of 44.2 % (12,957) in SW schemes during 6th MI census as compared to the 2,86,416 GW schemes and 29,292 SW schemes recorded in 5th census.

Share of GW schemes in the State of Chhattisgarh has increased from 90.7% in 5th MI Census to 95.3% in 6th MI Census whereas share of SW schemes declined from 9.3% in 5th Minor Irrigation Census to 4.7% in 6th MI Census as shown in the pie chart given below.

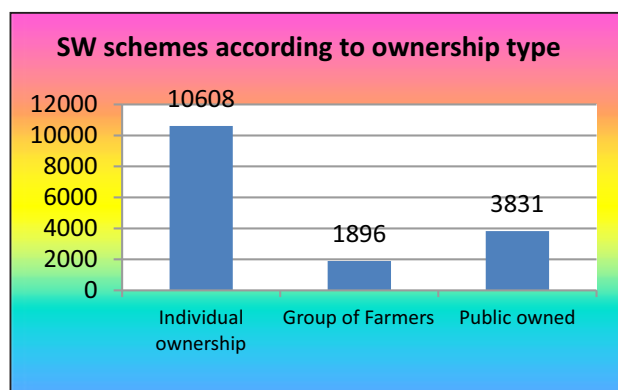
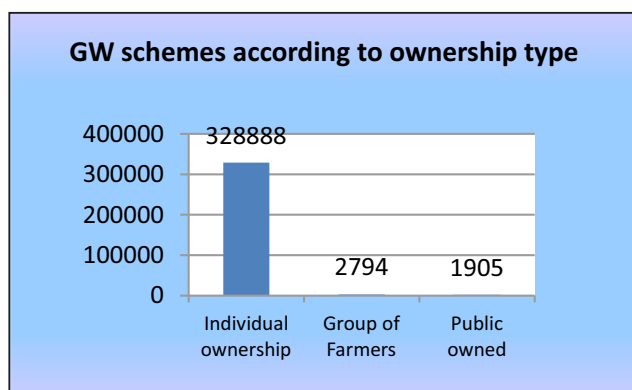


Out of the 3,49,922 MI schemes reported in Chhattisgarh, 44.9% (1,56,944) are medium tubewell followed by 33.5% (1,17,354) deep tubewell and 9.0% (31,414) dugwell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

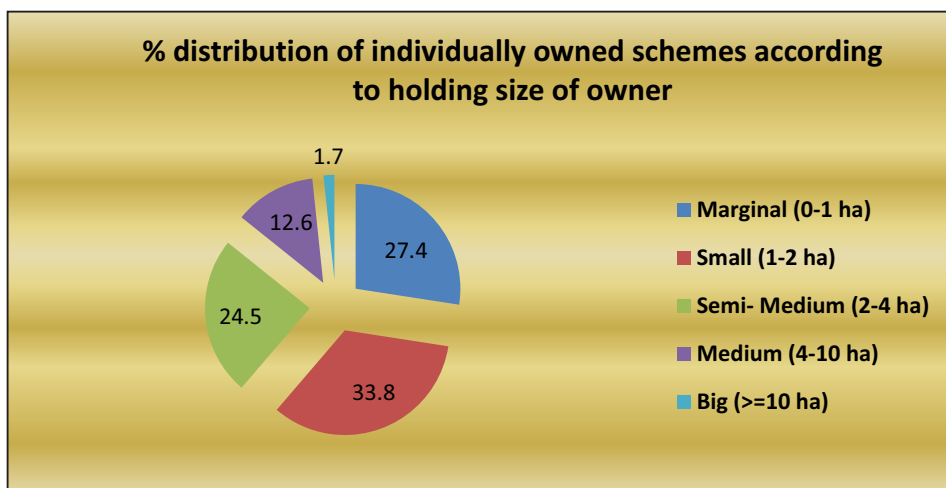


Ownership of MI schemes

Out of 3,49,922 MI schemes, majority of the schemes i.e. 97.0% (3,39,496) continue to remain under individual ownership, 1.7% (5,736) schemes are public owned and a small chunk of 1.3% (4,690) schemes are owned by group of farmers. Among 3,33,587 GW schemes, 98.6% (3,28,888) schemes are individually owned whereas among 16,335 SW schemes, 64.9% (10,608) are owned by individual ownership. Most of MI structures in Chhattisgarh are owned by individual farmers as brought out in the figure given below. This shows that individual farmers are getting maximum benefit from minor irrigation schemes.

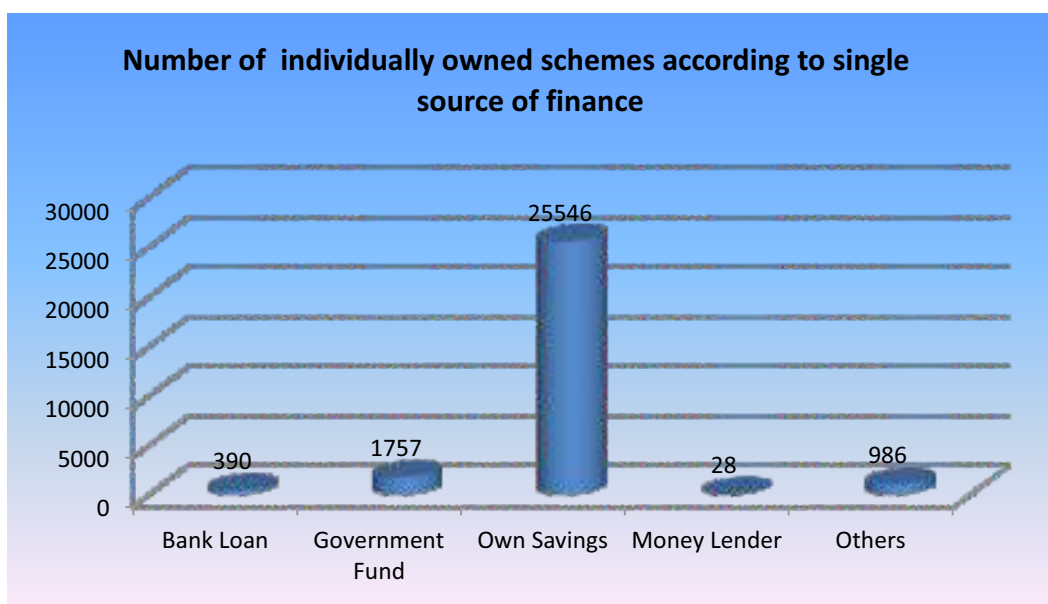


Out of the 3,39,496 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 61.3% (2,08,031) in MI schemes. Rest of the 38.7% are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI Structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



Financing of MI schemes

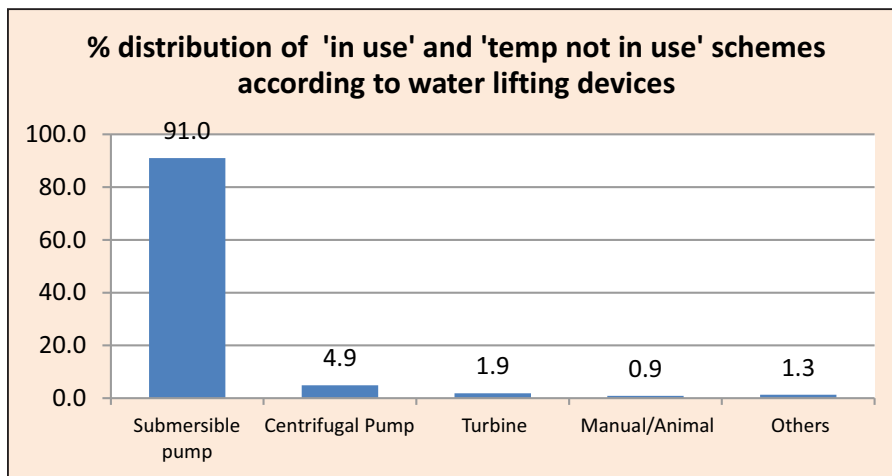
Information on source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 3,39,496 individually owned schemes, 8.5% (28,707) have single source of finance whereas 91.5% (3,10,789) have more than one source of finance. In these schemes with single source of finance (28,707), majority of schemes i.e. 89.0% (25,546) are being financed by own savings of individual farmer. Other reported sources of finance are Government fund 6.1% (1,757), bank loan 1.4% (390), money lenders 0.1% (28) and others 3.4% (986). 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

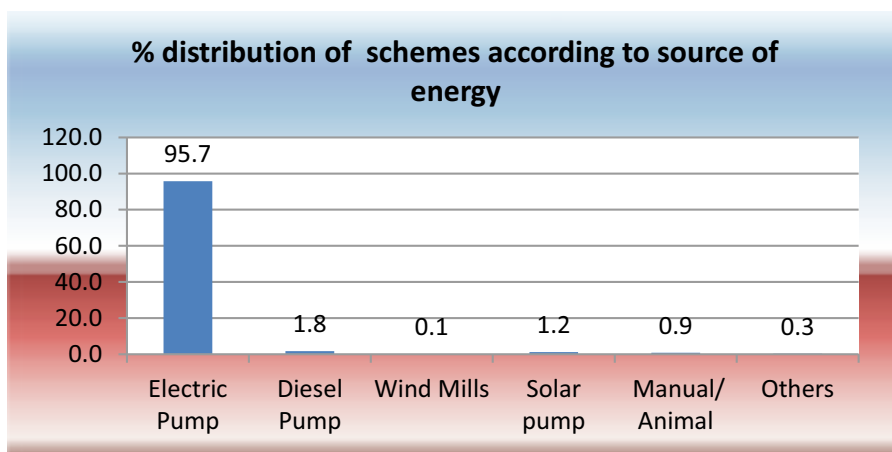
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 3,45,234, out of the total 3,49,922 MI schemes. Out of these (3,45,234) schemes, majority of

schemes i.e 91% (3,14,253) have submersible pump and 4.9% (16,866) schemes have centrifugal pump as lifting device. 1.9% (6,445) schemes are being operated by turbines for water lifting purposes, 0.9% (3,121) are operated manually or by animal and rest 1.3% (4,549) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



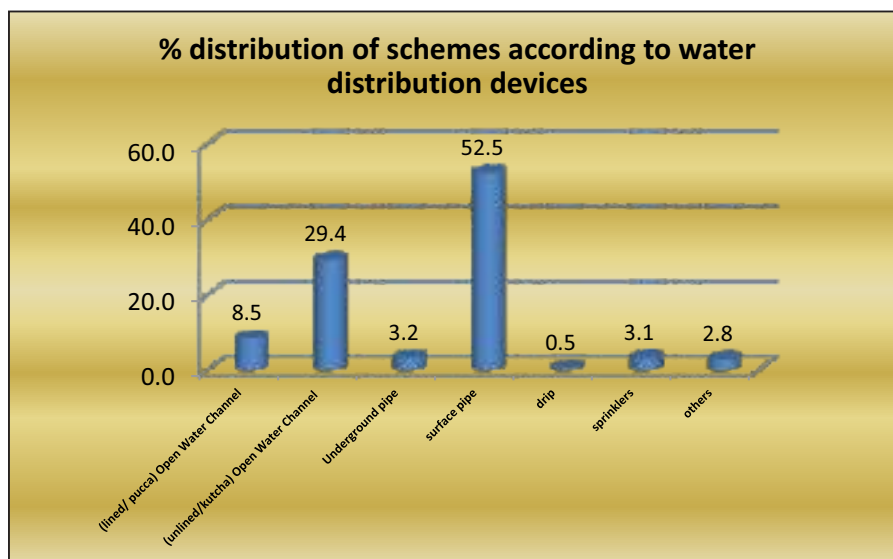
Distribution of source of energy

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 come under the category of ground water and surface lift schemes. The number of such schemes is 3,45,234. Out of these schemes, majority of schemes i.e 95.7% (3,30,423) schemes are using electricity as source of energy followed by diesel pumps in 1.8% (6,127) schemes. In rest of the cases, 1.2% (4,218) schemes are using solar pump followed by 0.9% (3,121) manual/animal, 0.1% (309) wind mills and the remaining 0.3% (1,036) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



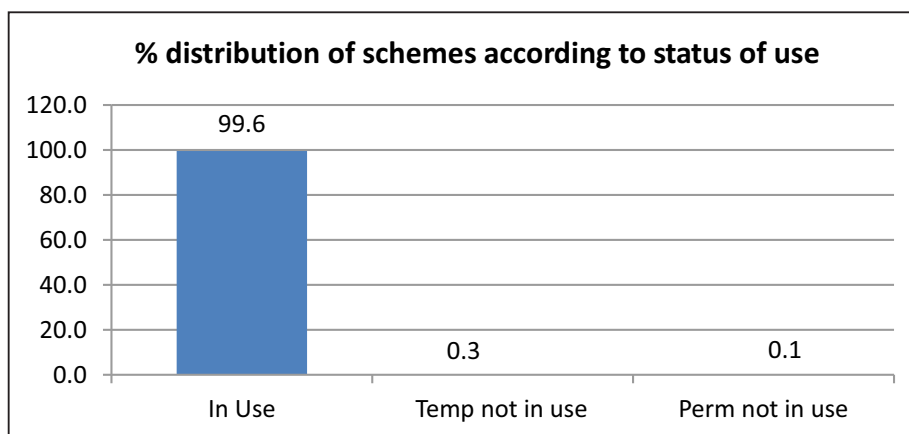
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipe is 52.5% (1,82,732) followed by 29.4% (1,02,451) open water channel (unlined/kutchha) and 8.5% (29,519) open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are 3.2% (11,234) underground pipe, 3.1% (10,962) sprinklers, 0.5% (1,764) drip and 2.8% (9,694) others devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

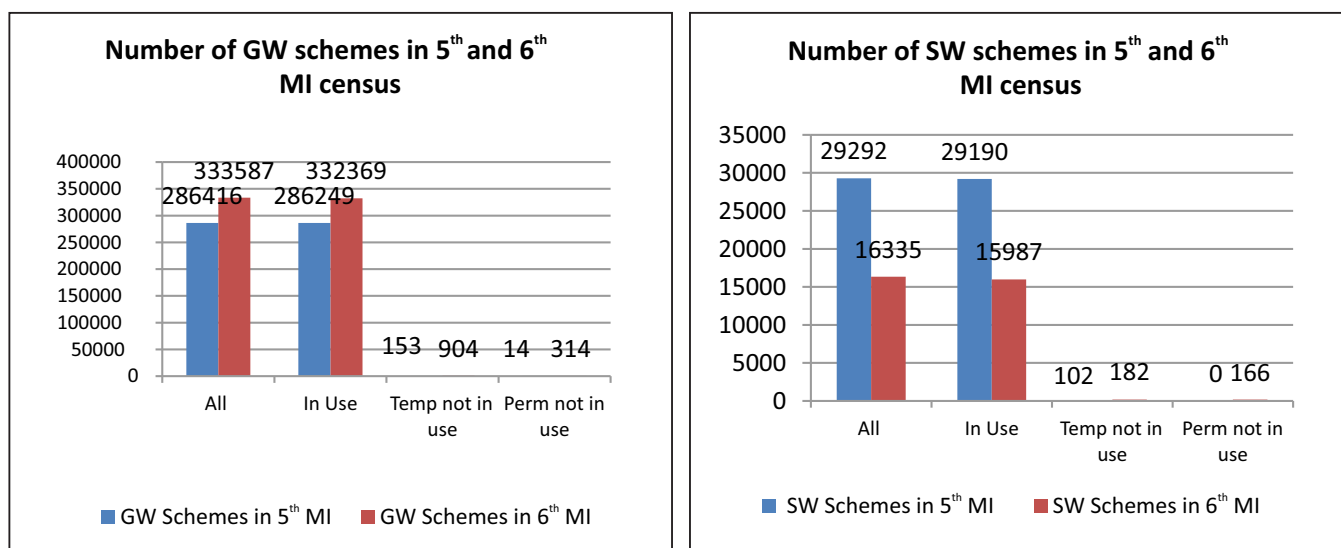


Status of MI schemes

Out of total number of 3,49,922 MI schemes, 99.6% (3,48,356) are 'in use', 0.3% (1,086) are 'temporarily not in use' and only 0.1% (480) are 'permanently not in use' schemes which is depicted in the pie chart given below.

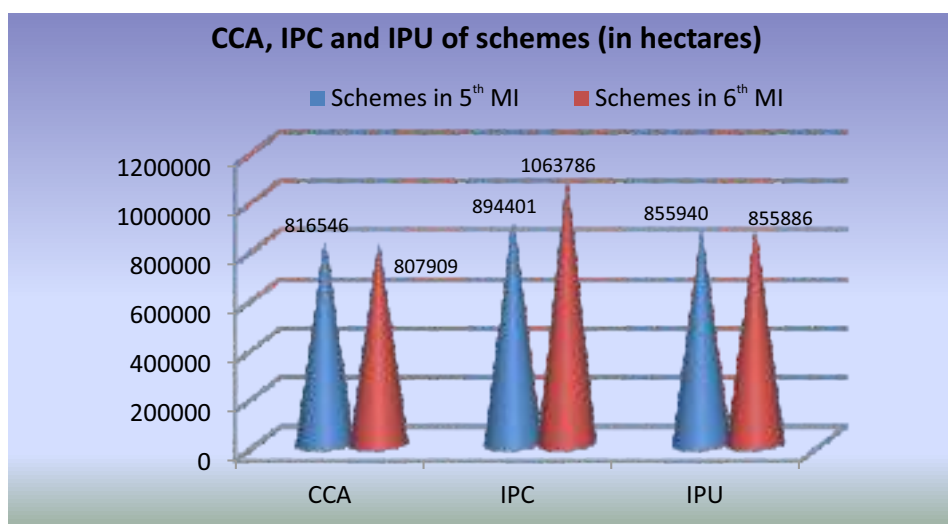


Out of 1,086 'temporarily not in use' schemes, 904 are GW schemes and 182 are SW schemes. Among 480 'permanently not in use' schemes, 314 are GW schemes and 166 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

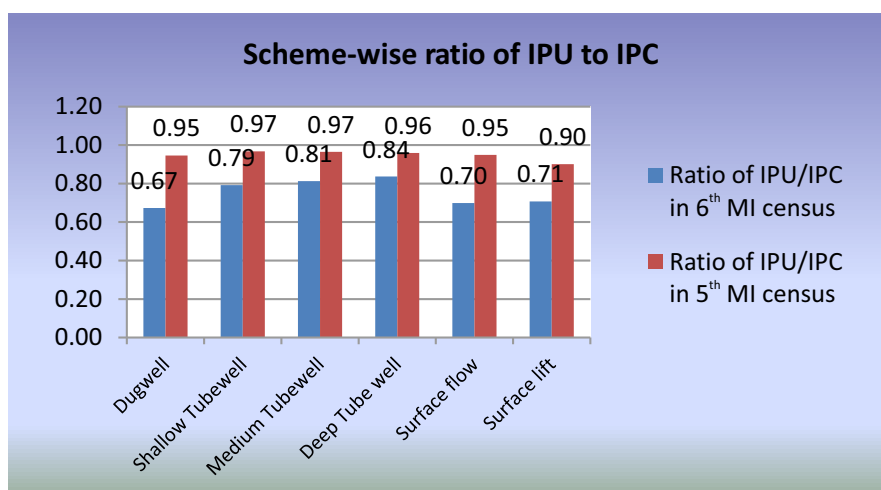
There has been an increase of 18.9 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 8,94,401 hectares during 5th MI census to 10,63,786 hectares during 6th MI census. Irrigation potential utilized was 8,55,940 hectares during 5th MI Census in Chhattisgarh, which has almost remained the same 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, 9,59,940 hectares irrigation potential is created through GW schemes and 1,03,846 hectares through SW schemes. Irrigation potential utilized is 7,82,959 and 72,927 hectares for GW and SW schemes, respectively. This shows that 81.6 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 70.2%. The scheme-wise ratio of IPU to IPC in Chhattisgarh is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	34,720.08	23,357.24	0.67
Shallow Tubewell	71,534.96	56,673.01	0.79
Medium Tubewell	4,68,293.4	3,80,476.4	0.81
Deep Tube well	3,85,391.4	3,22,452.8	0.84
Surface flow	57,696.92	40,304.6	0.70
Surface lift	46,149.5	32,622.37	0.71

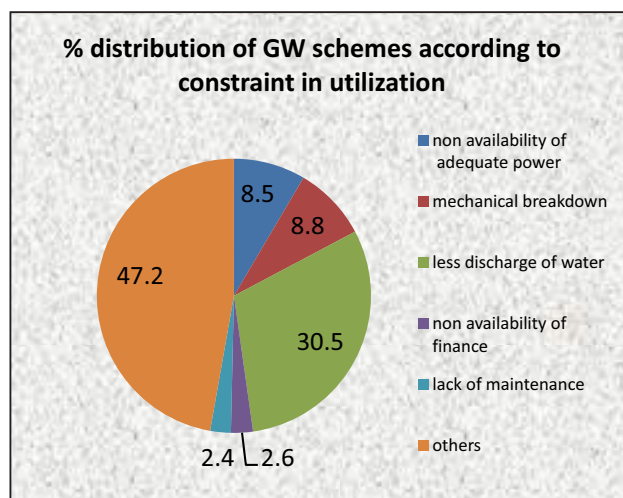
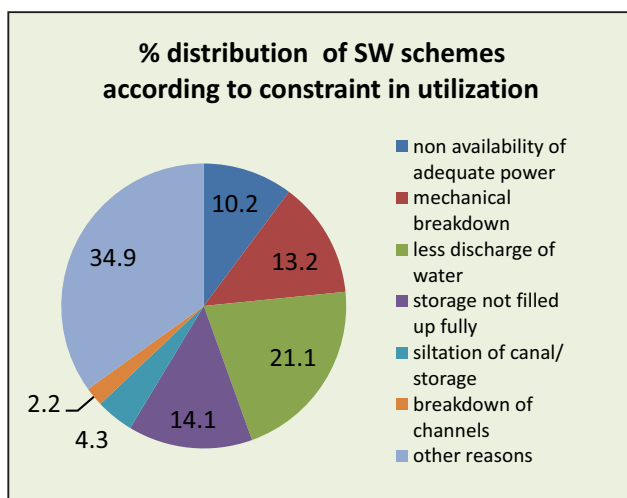
Medium tube wells have the highest IPC & IPU followed by deep and shallow tubewells schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 70% utilization of the potential created except dugwells scheme with a utilization of 67%. A comparative 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, 42,010 (12.1%) schemes out of 3,48,356 'in use' schemes in Chhattisgarh are under-utilised due to several reasons. Remaining 87.9% 'in use' MI schemes are functioning without any constraints.

Among 42,010 under-utilized schemes, 38,776 are GW schemes and 3,234 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be less discharge of water followed by mechanical breakdown and non-availability of adequate power. On the other hand, the SW schemes are underutilized mainly due to less discharge of water, storage not filled up fully, mechanical breakdown and non-availability of adequate power. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.



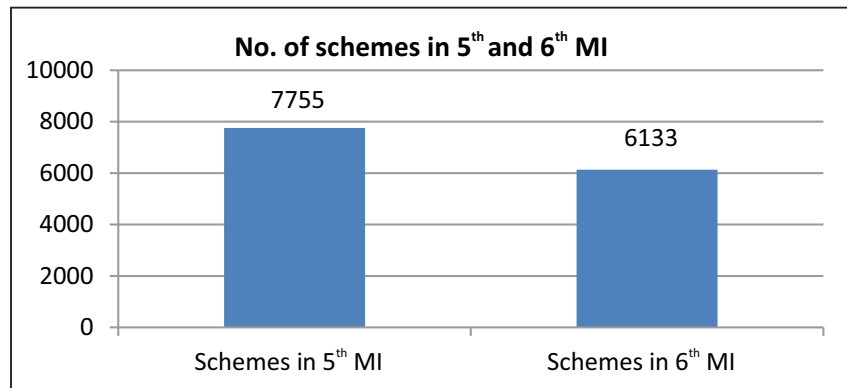
Key Parameters of 6 th MI Census-Chhattisgarh						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	31,414			8.98
	Shallow Tubewell	No.	27,875			7.97
	Medium Tubewell	No.	1,56,944			44.85
	Deep Tubewells	No.	1,17,354			33.54
	Ground Water schemes	No.	3,33,587			95.33
	Surface Flow	No.	4,245			1.21
	Surface Lift	No.	12,090			3.46
	Surface Water schemes	No.	16,335			4.67
	Total schemes	No.	3,49,922			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	7,14,177	93,732	8,07,909	
	IPC	Ha	9,59,940	1,03,846	10,63,786	
	IPU	Ha	7,82,959	72,927	8,55,886	
	IPC of in use schemes	Ha	9,57,681	1,02,543	10,60,224	
	IPU of in use schemes	Ha	7,82,369	72,630	8,55,000	
	% Ratio of IPU wrt IPC	%	81.56	70.23	80.46	
	Gap in IPC and IPU	Ha	1,76,981	30,919	2,07,900	
Ownership	Individual ownership	No.	3,28,888	10,608	3,39,496	97.02
	Group of Farmers	No.	2,794	1,896	4,690	1.34
	Public owned	No.	1,905	3,831	5,736	1.64
	Total	No.	3,33,587	16,335	3,49,922	100.00
Social Status of Individual Owner	SC	No.	29,941	519	30,460	8.97
	ST	No.	76,725	6,048	82,773	24.38
	OBC	No.	1,98,607	3,005	2,01,612	59.39
	Others	No.	23,615	1,036	24,651	7.26
	Total Individual	No.	3,28,888	10,608	3,39,496	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	28,551	968	29,519	8.47
	Open Water Channel (unlined/ kutcha)	No.	96,307	6,144	1,02,451	29.41

Key Parameters of 6th MI Census-Chhattisgarh

Parameter	Unit	Value			%
Underground pipe	No.	10,415	819	11,234	3.22
Surface Pipe	No.	1,75,414	7,318	1,82,732	52.46
Drip	No.	1,738	26	1,764	0.51
Sprinklers	No.	10,957	5	10,962	3.15
Others	No.	8,987	707	9,694	2.78
Total	No.	3,32,369	15,987	3,48,356	100.00

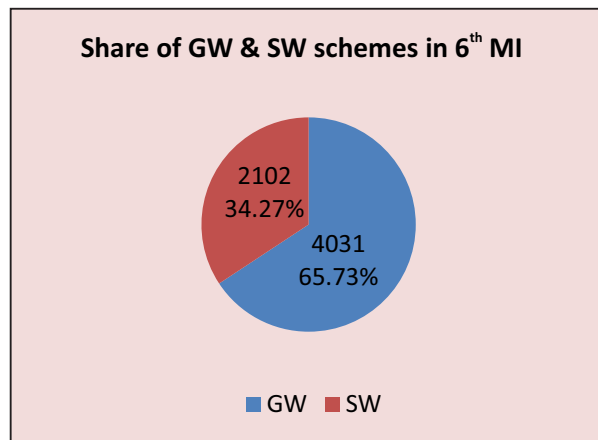
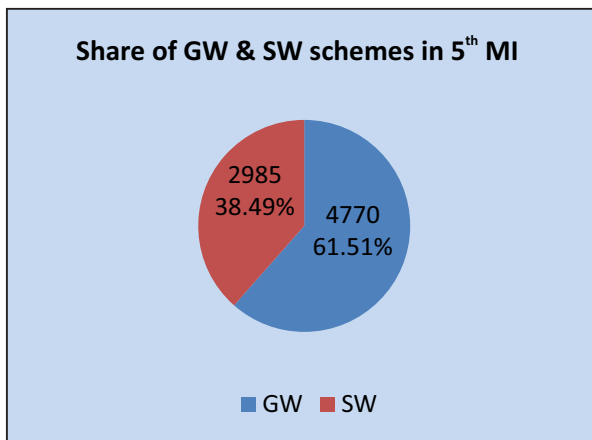
GOA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Goa has 6,133 MI schemes comprising of 65.7% (4,031) Ground Water (GW) schemes and 34.3% (2,102) Surface Water (SW) schemes. There is a decline to the tune of 20.9% in 6th MI census as compared to the 7,755 schemes in 5th MI census in the State of Goa.

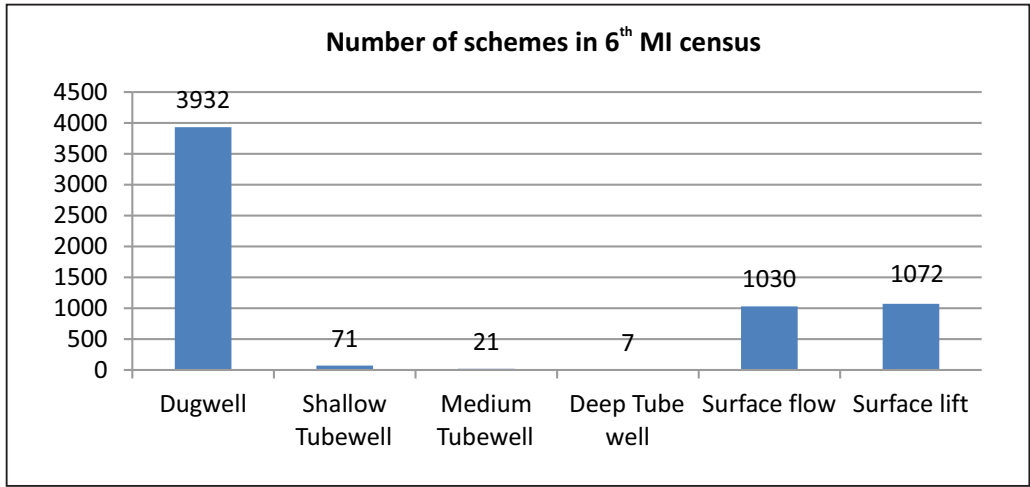


The State Government has reported a decline of 15% (739) in GW schemes and 30% (883) in SW schemes during 6th MI census as compared to the 4,770 GW schemes and 2,985 SW schemes recorded in 5th census.

Share of GW Schemes in the State of Goa has increased from 61.5% in 5th MI Census to 65.7% in 6th MI Census whereas share of SW Schemes declined from 38.5% in 5th MI Census to 34.3% in 6th MI Census as shown in the pie chart given below.

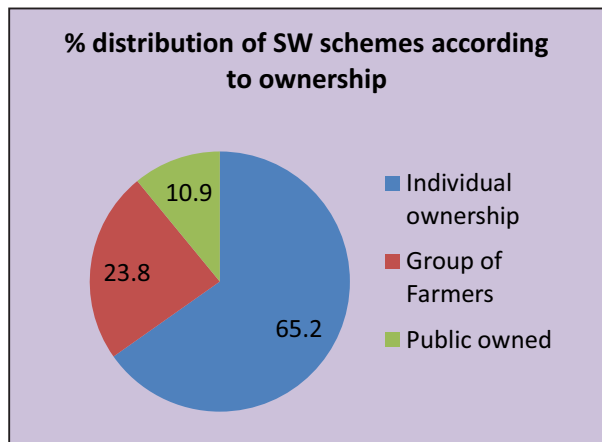
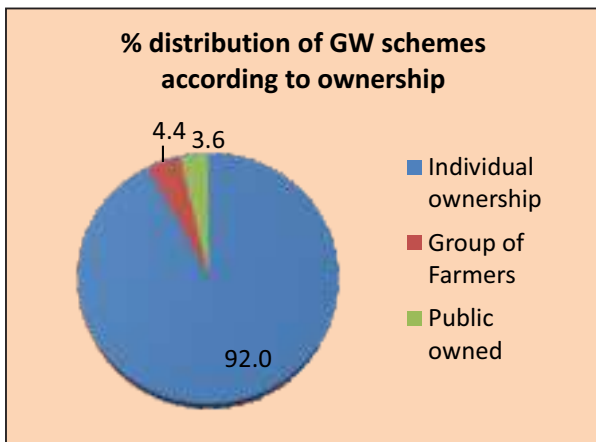


Out of the 6,133 MI schemes reported in Goa, 64.1% (3,932) are dug wells followed by 17.5% (1,072) Surface lift and 16.8% (1,030) Surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.

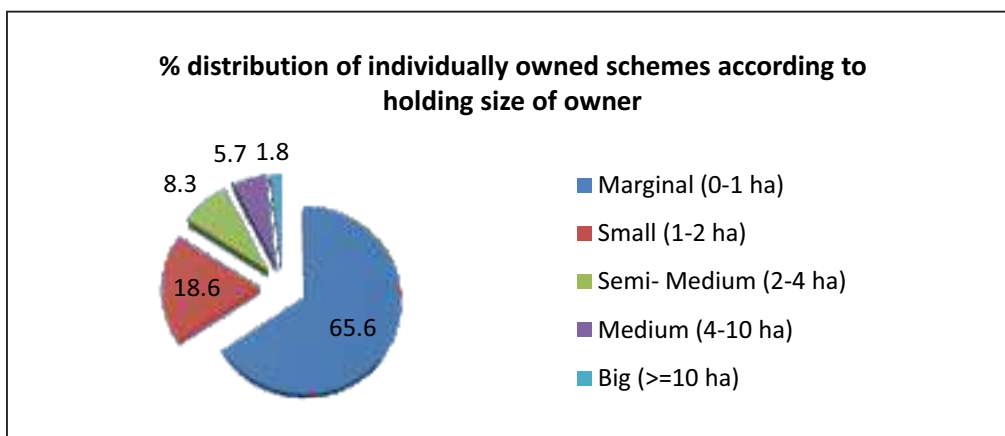


Ownership of MI schemes

Out of 6,133 MI schemes, majority of the schemes i.e. 82.8% (5,078) continue to remain under individual ownership, 11.1% (678) schemes are owned by group of farmers and a small chunk of 6.1% (377) schemes are publically owned. Among 4,031 GW schemes, 92.0% (3,707) schemes are individually owned and among 2,102 SW schemes, 65.2% (1,371) are owned by individual farmers. Most of MI structures in Goa are owned by individual farmers or group of farmers which has been brought out in the figure given below. Individual farmers/group of farmers are getting maximum benefit from minor irrigation schemes.

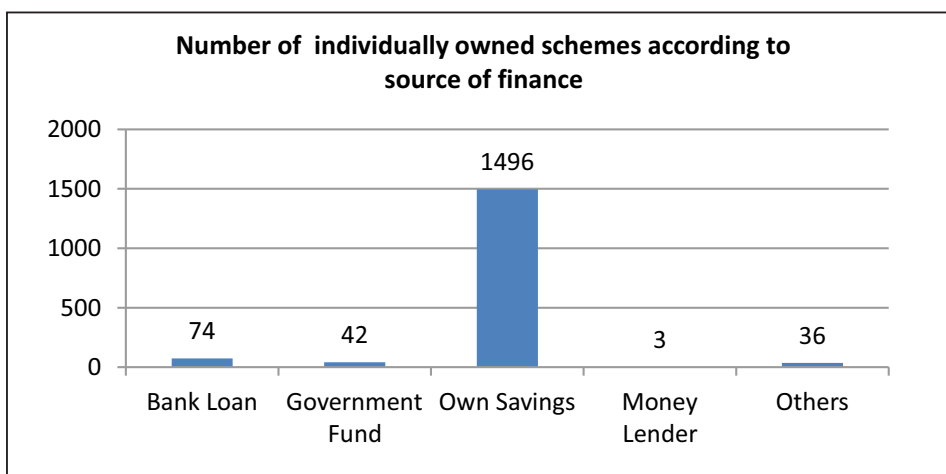


Out of 5,078 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 84.2 % (4,276) in MI schemes. Rest of the 15.8% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI Structures for irrigation purposes which will play crucial role of improving the livelihood of small and marginal farmers.



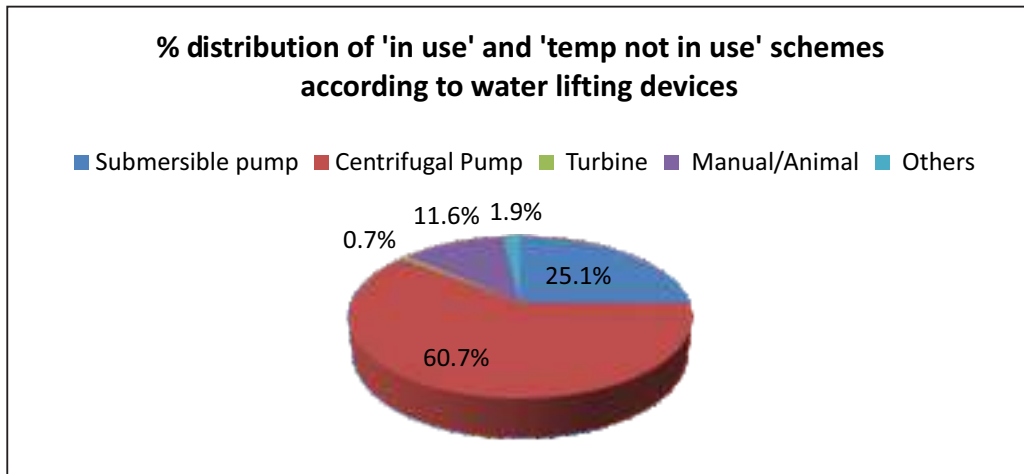
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 5,078 individually owned schemes, 32.5% (1,651) have single source of finance whereas 67.5% (3,427) have more than one source of finance. In these schemes with single source of finance (1,651), majority of schemes i.e. 90.6% (1,496) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 4.5% (74), Government fund 2.5% (42), money lenders 0.2% (3) and others 2.2% (36). Distribution of individually owned MI schemes according to source of finance is depicted in the chart given below.



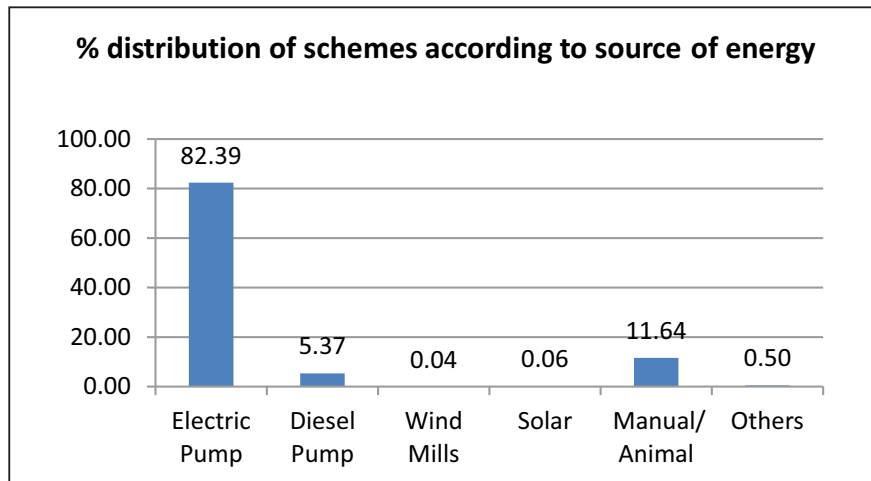
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 5,061, out of the total 6,133 MI schemes. Out of these (5,061) schemes, majority of schemes i.e. 60.7% (3,071) have centrifugal pump and 25.1% (1,269) schemes have submersible pump as lifting device. 11.6% (589) schemes are being operated manually or by animal for water lifting purposes, 0.7% (35) are operated by turbines and rest 1.9% (97) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



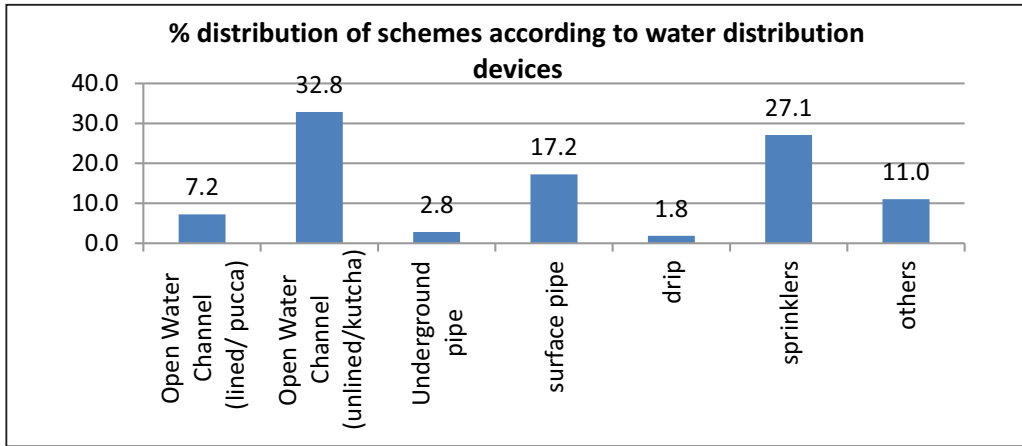
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 5,061. Out of these schemes, majority of schemes i.e 82.39% (4,170) schemes are using electricity as source of energy followed by diesel pumps in 5.37% (272) schemes. In rest of the cases, 11.64% (589), 0.06% (3), 0.04% (2) and 0.50% (25) schemes are using manual/animal source, solar pumps, windmills and others sources respectively. The percentage distribution of schemes according to source of energy is shown in the chart given below.



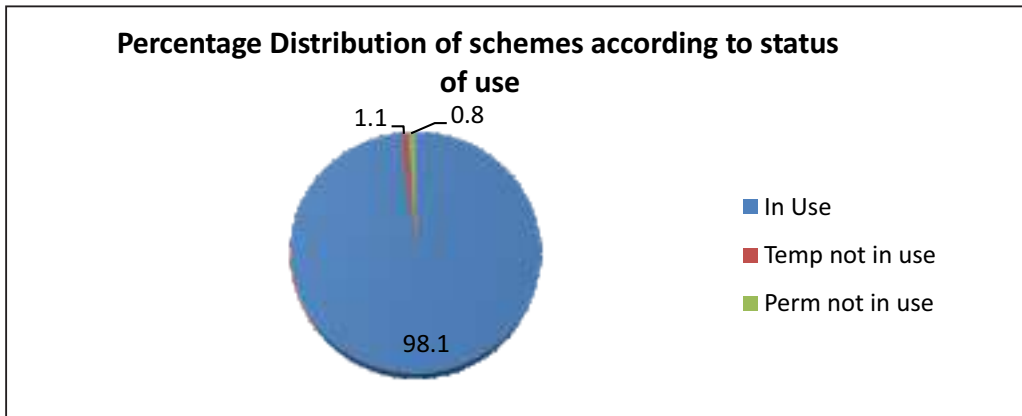
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 32.8% (1,976) followed by 27.1% (1,629) sprinklers and 17.2% (1,037) surface pipes. The water distribution devices used in the rest of the MI schemes are 7.2% (435) open water channel (lined/pucca), 2.8% underground pipe (168), 1.8% (110) Drip and 11% (662) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

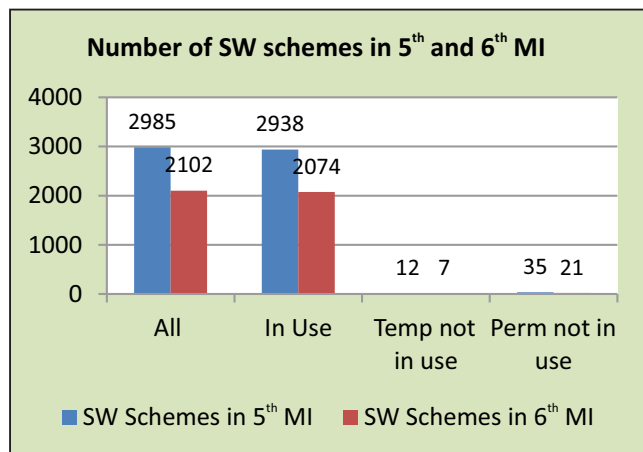
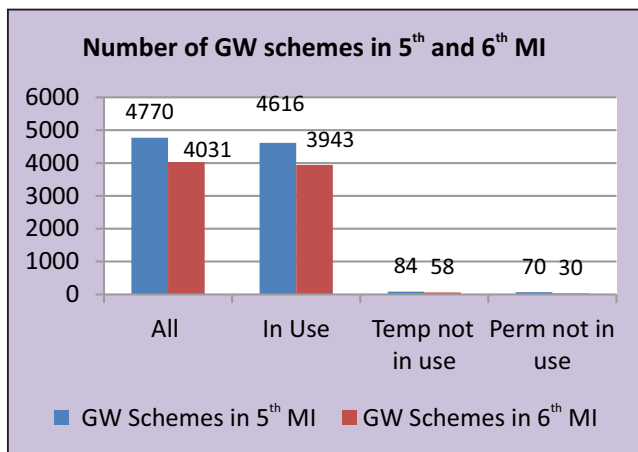


Status of MI schemes

Out of total number of 6,133 MI schemes, 98.1% (6,017) are 'in use', 1.1% (65) are 'temporarily not in use' and only 0.8% (51) are 'permanently not in use' schemes which is depicted in the pie chart given below.

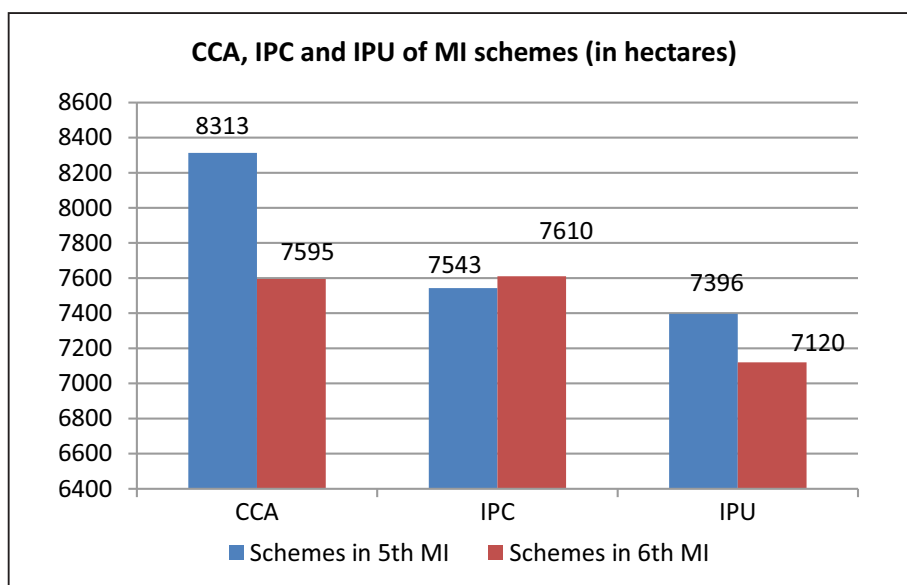


Out of 65 'temporarily not in use' schemes, 58 are GW Schemes and 7 are SW schemes. Among 51 'permanently not in use' schemes, 30 are GW schemes and 21 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

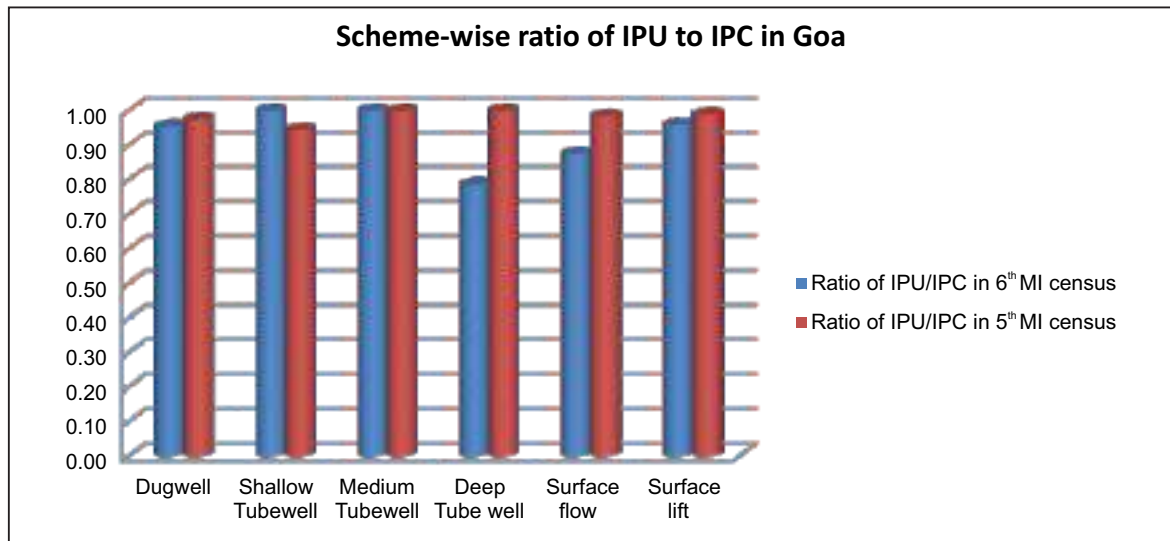
There has been marginal increase of 0.9 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 7,543 hectares during 5th MI census to 7,610 hectares during 6th MI census. Irrigation potential utilized was 7,396 hectares during 5th MI Census in Goa, which has declined by 3.7% 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, 3,180 hectares irrigation potential is created through GW schemes and 4,430 hectares through SW schemes. Irrigation potential utilized is 3,037 and 4,083 for GW and SW schemes, respectively. This shows that 95.5 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 92.2 %. The scheme-wise ratio of IPU to IPC in Goa is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Goa			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	3,084	2,942	0.95
Shallow Tubewell	62	62	1.00
Medium Tubewell	30	30	1.00
Deep Tubewell	5	4	0.79
Surface flow	1,953	1,708	0.87
Surface lift	2,477	2,375	0.96

Dugwells have the highest IPU & 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 deep tubewell scheme with a utilization of 79%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.

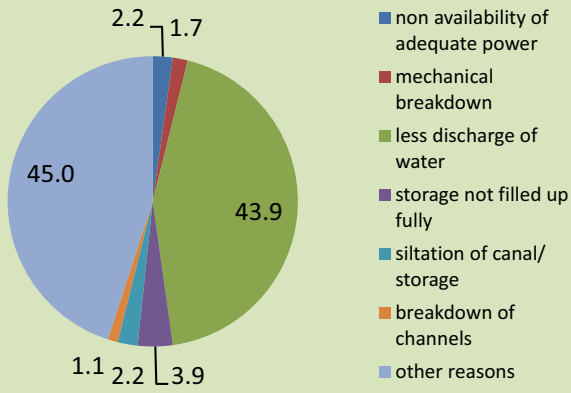


Underutilization of In Use schemes

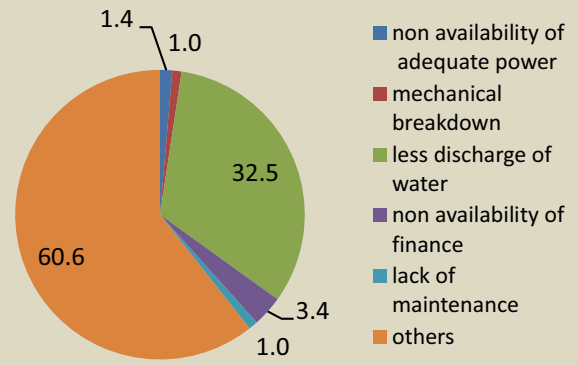
It is observed in the previous rounds of MI censuses that many 'in use' schemes were under-utilized due to various constraints. As per the 6th MI Census, 472 (7.8%) schemes out of 6,017 'in use' schemes in Goa are under-utilised due to several reasons. Remaining 92.2% 'in use' MI schemes are functioning without any constraints.

Among 472 under-utilized schemes, 292 are GW schemes and 180 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' followed by non-availability of finance. On the other hand, the SW schemes are under-utilized mainly due to 'less discharge of water'. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.

Percentage distribution of SW schemes according to constraints in utilization



Percentage distribution of GW schemes according to constraints in utilization



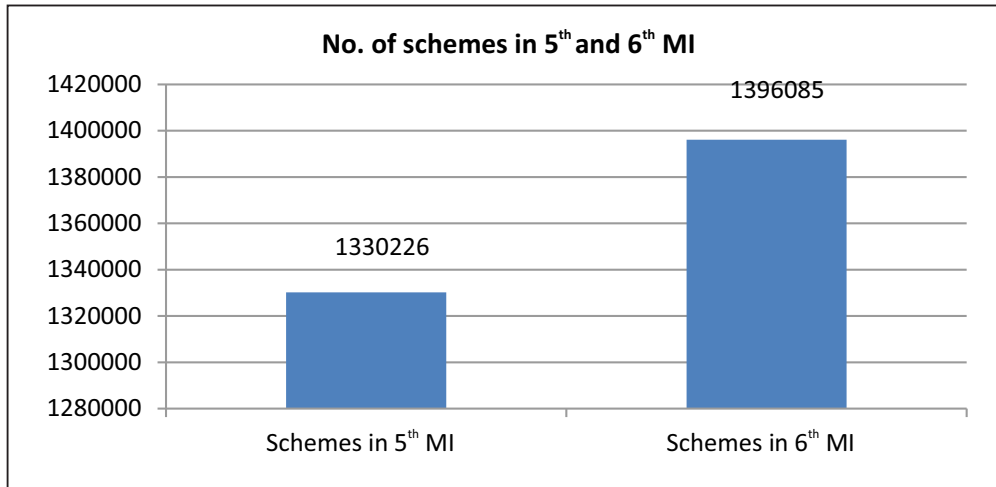
Key Parameters of 6 th MI Census-Goa						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	3,932			64.11
	Shallow Tubewell	No.	71			1.16
	Medium Tubewell	No.	21			0.34
	Deep Tubewells	No.	7			0.11
	Ground Water schemes	No.	4,031			65.73
	Surface Flow	No.	1,030			16.79
	Surface Lift	No.	1,072			17.48
	Surface Water schemes	No.	2,102			34.27
	Total schemes	No.	6,133			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	3,165	4,430	7,595	
	IPC	Ha	3,180	4,430	7,610	
	IPU	Ha	3,037	4,083	7,120	
	IPC of in use schemes	Ha	3,149	4,302	7,451	
	IPU of in use schemes	Ha	3,017	4,079	7,096	
	% Ratio of IPU wrt IPC	%	95.50	92.17	93.56	
	Gap in IPC and IPU	Ha	143	347	490	
Ownership	Individual ownership	No.	3,707	1,371	5,078	82.80
	Group of Farmers	No.	177	501	678	11.05
	Public owned	No.	147	230	377	6.15
	Total	No.	4,031	2,102	6,133	100.00
Social Status of Individual Owner	SC	No.	95	66	161	3.17
	ST	No.	632	421	1,053	20.74
	OBC	No.	829	199	1,028	20.24
	Others	No.	2,151	685	2,836	55.85
	Total Individual	No.	3,707	1,371	5,078	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	239	196	435	7.23
	Open Water Channel (unlined/ kutchra)	No.	912	1,064	1,976	32.84

Key Parameters of 6th MI Census-Goa

Parameter	Unit	Value			%
Underground pipe	No.	134	34	168	2.79
Surface Pipe	No.	903	134	1,037	17.23
Drip	No.	87	23	110	1.83
Sprinklers	No.	1,247	382	1,629	27.07
Others	No.	421	241	662	11.00
Total	No.	3,943	2,074	6,017	100.00

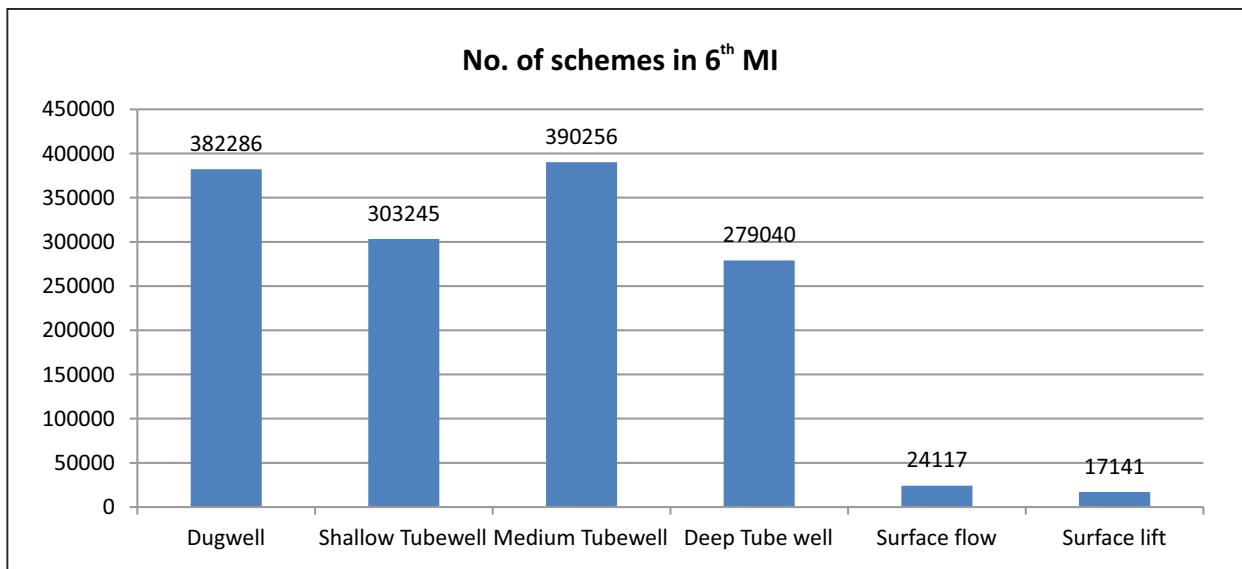
GUJARAT

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Gujarat has 13,96,085 MI schemes comprising of 97% (13,54,827) Ground Water (GW) schemes and 3% (41,258) Surface Water (SW) schemes. There is a increase to the tune of 5% in 6th MI census as compared to the 13,30,226 schemes in 5th MI census in the State of Gujarat.



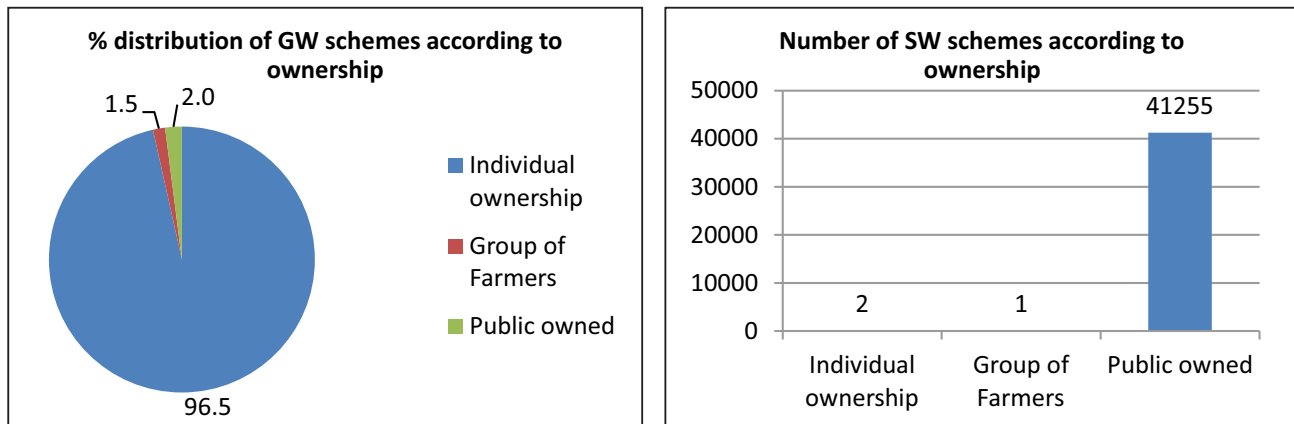
The State Government has reported an increase of 5.7% (72,835) in GW schemes and decline of 14.5 % (6,976) in SW schemes during 6th MI census as compared to the 12,81,992 GW schemes and 48,234 SW schemes recorded in 5th census.

Out of the 13,96,085 MI schemes reported in Gujarat, 28% (3,90,256) are medium tube wells followed by 27.4% (3,82,286) dug wells and 21.7% (3,03,245) shallow tube wells. Distribution of different GW and SW schemes is shown in the chart given below.

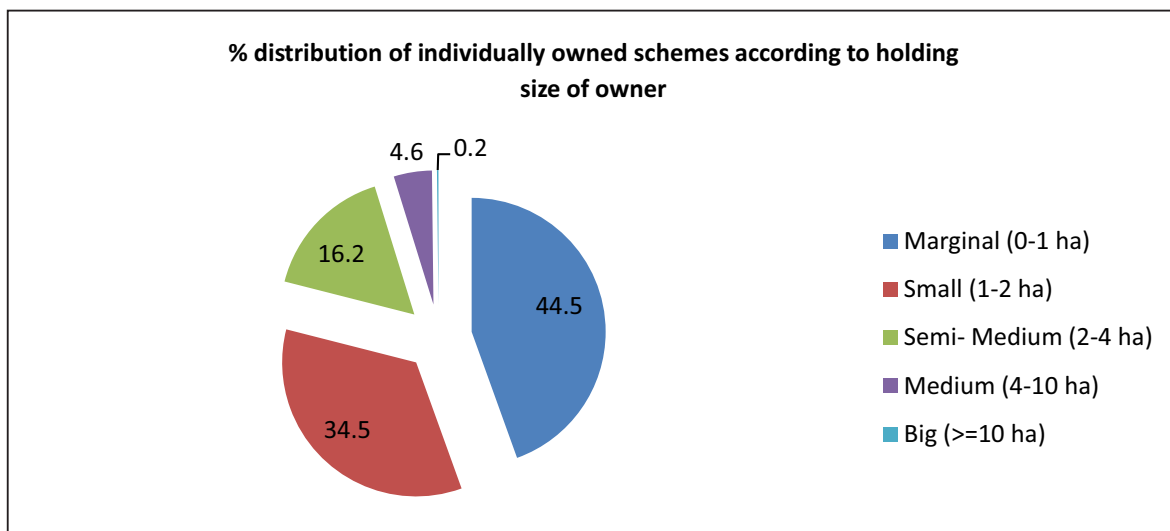


Ownership of MI schemes

Out of 13,96,085 MI schemes, majority of the schemes i.e. 93.7% (13,07,477) continue to remain under individual ownership, 1.4% (19,971) schemes are owned by group of farmers and 4.9% (68,637) schemes are public owned. Among 13,54,827 GW schemes, 96.5% (13,07,475) schemes are individually owned and among 41,258 SW schemes, only 2 schemes are owned by individual farmers as depicted in charts given below.

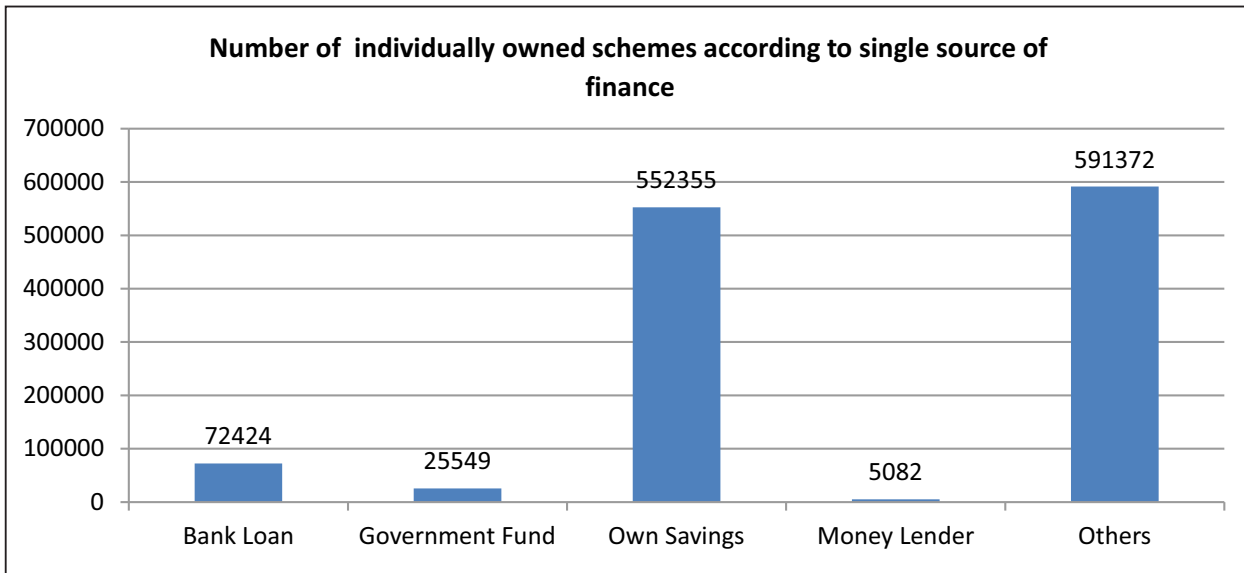


Out of the total 13,07,477 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 79% (10,32,463) in MI schemes. Rest of the 21% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI Structures for irrigation purposes which will play crucial roles in improving the livelihood of small and marginal farmers.



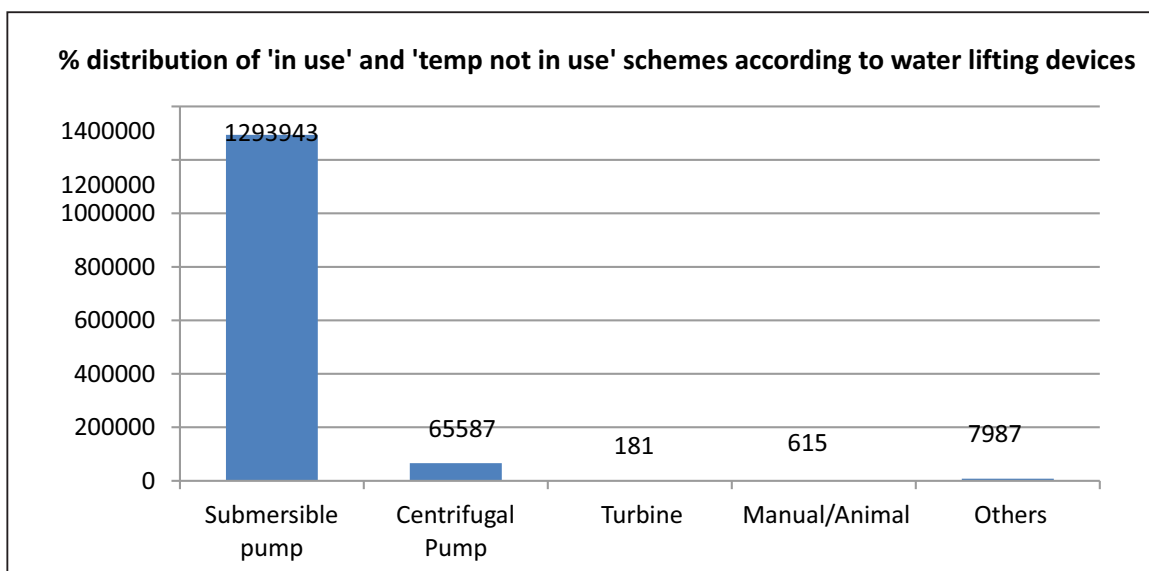
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 13,07,477 individually owned schemes, 95.4% (12,46,782) have single source of finance whereas 4.6% (60,695) have more than one source of finance. In these schemes with single source of finance

(12,46,782), 44.3% (5,52,355) of the schemes have own savings as the source of finance. Other reported sources of finance are bank loan 5.8% (72,424), Government fund 2.1% (25,549), money lenders 0.4% (5,082) and 47.4% (5,91,372) other sources. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



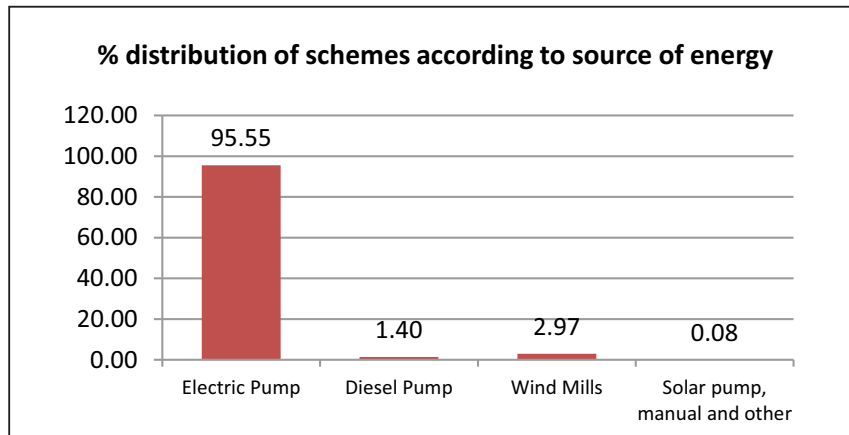
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 13,68,313, out of the total 13,96,085 MI schemes. Out of these (13,68,313) schemes, majority of schemes i.e. 94.6% (12,93,943) have submersible pump and 4.8% (65,587) schemes have centrifugal pump as depicted in the figure given below.



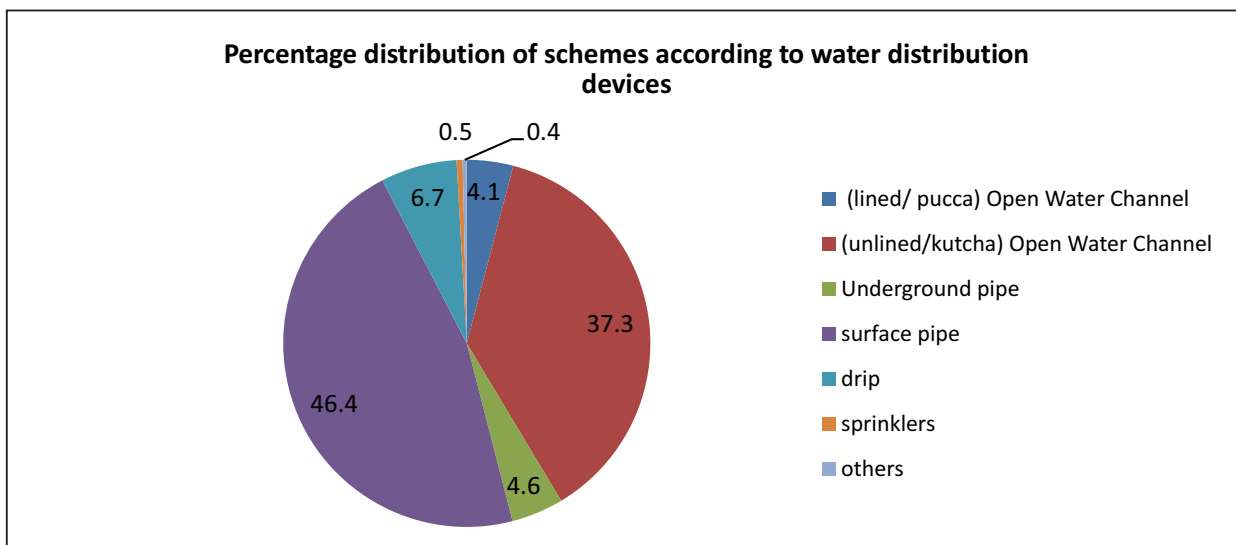
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 13,68,313. Out of these schemes, majority of schemes i.e 95.55% (13,07,488) schemes are using electric pump as source of energy followed by wind mills in 2.97% (40,611) schemes. In rest of the cases, 1.40% (19,101) schemes are using diesel pump as source of energy followed by solar pump, manual/animal and other sources in 0.08% (1,113) schemes. The percentage distribution of schemes according to source of energy is shown in the chart given below.



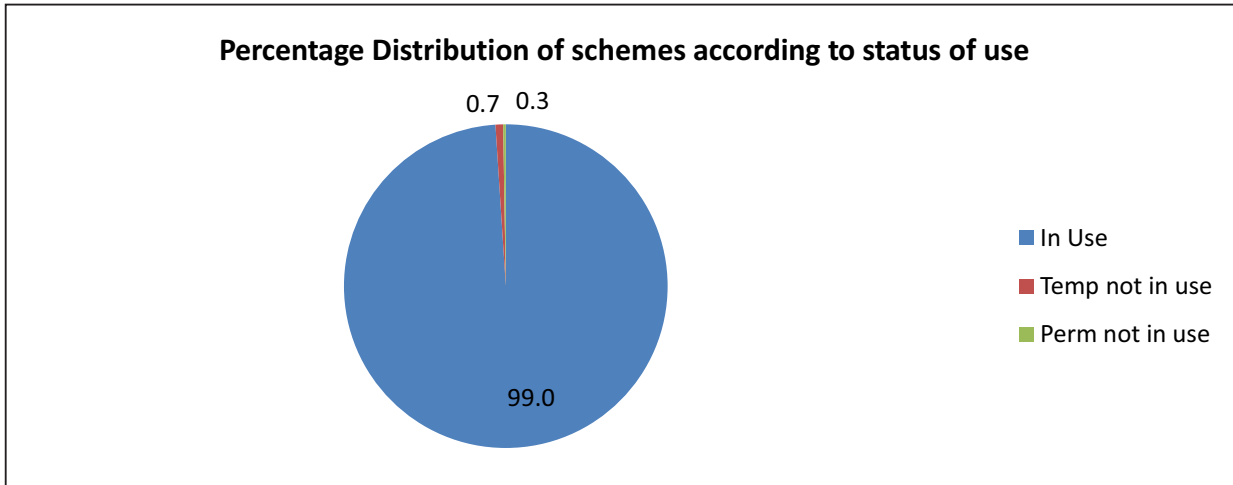
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipes is 46.4% (6,41,300) followed by 37.3% (5,15,674) open water channel (unlined/kutchra). The water distribution devices used in the rest of the MI schemes are 6.7% (92,736) Drip, 4.6% (63,428) underground pipes, 4.1% (56,396) open water channel (lined/pucca), 0.5% (7,323) sprinklers and 0.4% (4,987) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

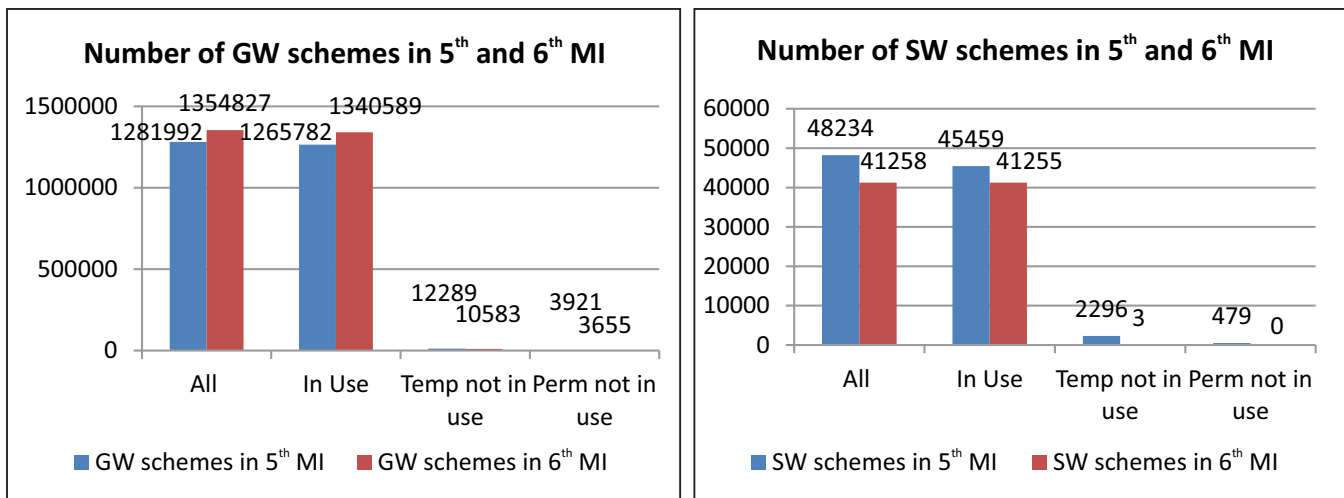


Status of MI schemes

Out of total number of 13,96,085 MI schemes, 99% (13,81,844) are 'in use', 0.7% (10,586) are 'temporarily not in use' and only 0.3 % (3,655) are 'permanently not in use' schemes which is depicted in the pie chart given below.

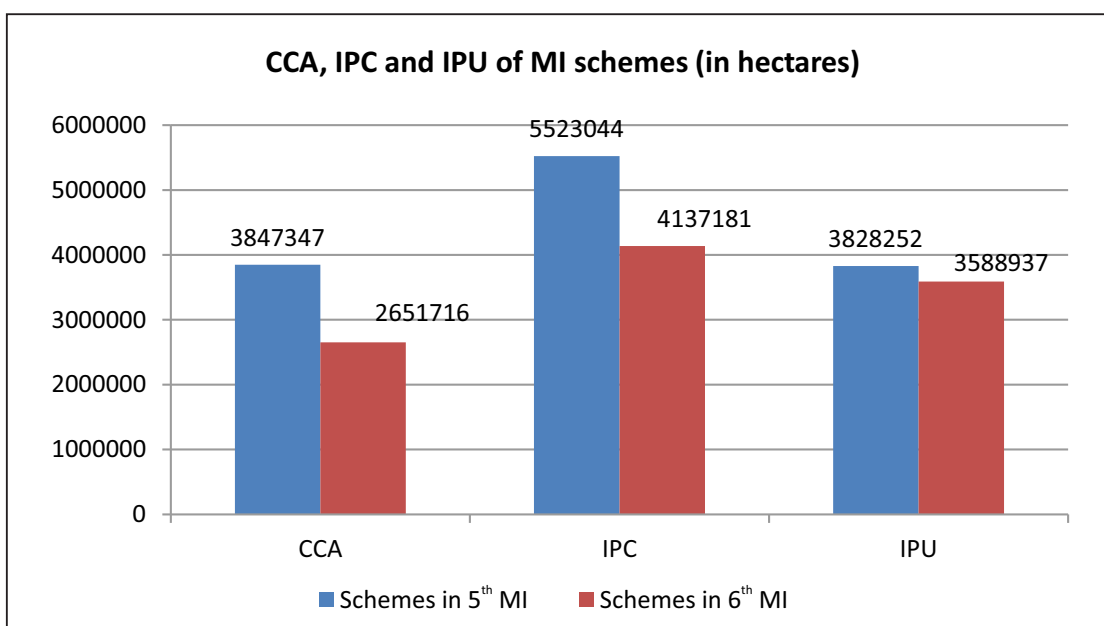


Out of 10,586 'temporarily not in use' schemes, 10,583 are GW schemes and 3 are SW schemes. All the 3,655 'permanently not in use' schemes are GW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

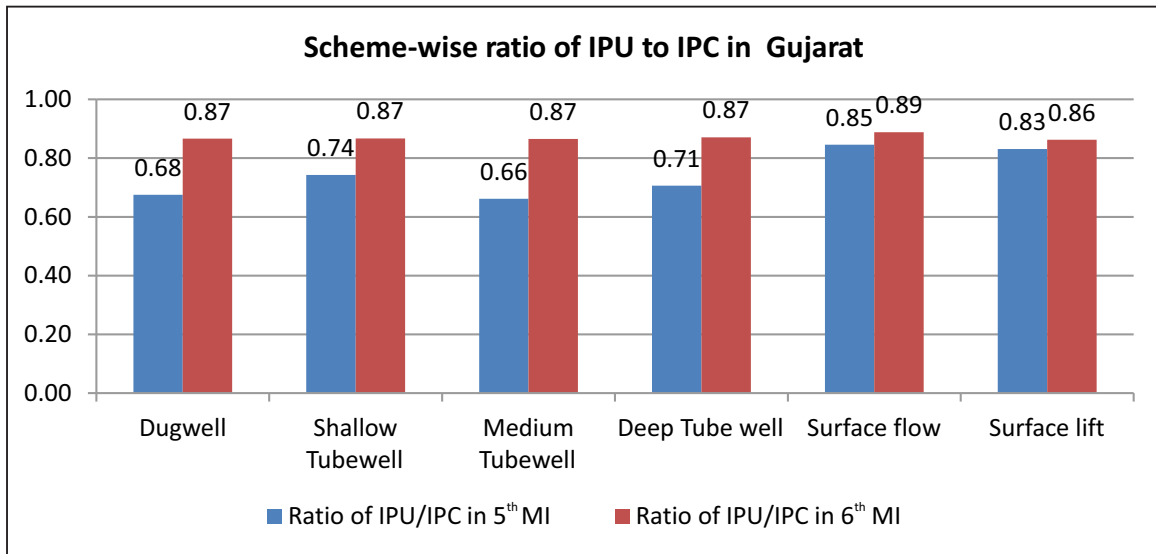
There has been decline of 25.1 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is decreased from 55,23,044 hectares during 5th MI census to 41,37,181 hectares during 6th MI census. Irrigation potential utilized was 38,28,252 hectares during 5th MI Census in Gujarat, which has also declined by 6.3% 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, 40,83,453 hectares irrigation potential is created through GW schemes and 53,728 hectares through SW schemes. Irrigation potential utilized is 35,41,913 hectares and 47,024 hectares for GW and SW schemes, respectively. This shows that 86.7 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 87.5 %. The scheme-wise ratio of IPU to IPC in Gujarat is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Gujarat			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	5,50,890.48	4,77,240.27	0.87
Shallow Tubewell	8,38,980.11	7,27,263.14	0.87
Medium Tubewell	14,37,296.63	12,43,623.75	0.87
Deep Tubewell	12,56,285.9	10,93,785.94	0.87
Surface flow	26,721.85	23,735.71	0.89
Surface lift	27,005.77	23,288.15	0.86

Medium tubewell have the highest IPC & IPU followed by deep tubewell and shallow tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 87% utilization of the potential created except surface lift scheme with a utilization of 86%. 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, 760 schemes out of 13,81,844 'in use' schemes in Gujarat are under-utilized due to several reasons. Out of these 760 schemes, 752 are GW schemes and 8 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported as 'mechanical breakdown'.

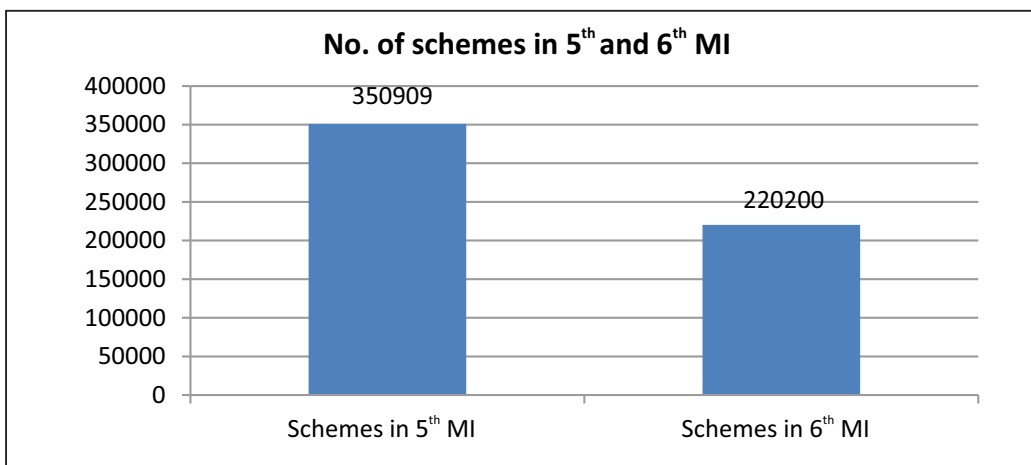
Key Parameters of 6 th MI Census-Gujarat						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	3,82,286			27.38
	Shallow Tubewell	No.	3,03,245			21.72
	Medium Tubewell	No.	3,90,256			27.95
	Deep Tubewells	No.	2,79,040			19.99
	Ground Water schemes	No.	13,54,827			97.04
	Surface Flow	No.	24,117			1.73
	Surface Lift	No.	17,141			1.23
	Surface Water schemes	No.	41,258			2.96
	Total schemes	No.	13,96,085			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	26,05,918	45,798	26,51,716	
	IPC	Ha	40,83,453	53,728	41,37,181	
	IPU	Ha	35,41,913	47,024	35,88,937	
	IPC of in use schemes	Ha	40,28,783	53,724	40,82,507	
	IPU of in use schemes	Ha	35,06,462	47,021	35,53,483	
	% Ratio of IPU wrt IPC	%	86.74	87.52	86.75	
	Gap in IPC and IPU	Ha	5,41,540	6,704	5,48,244	
Ownership	Individual ownership	No.	13,07,475	2	13,07,477	93.65
	Group of Farmers	No.	19,970	1	19,971	1.43
	Public owned	No.	27,382	41,255	68,637	4.92
	Total	No.	13,54,827	41,258	13,96,085	100.00
Social Status of Individual Owner	SC	No.	3,31,527	0	3,31,527	25.36
	ST	No.	3,17,378	0	3,17,378	24.27
	OBC	No.	3,20,586	2	3,20,588	24.52
	Others	No.	3,37,984	0	3,37,984	25.85
	Total Individual	No.	13,07,475	2	13,07,477	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	56,395	1	56,396	4.08
	Open Water Channel (unlined/ kutchra)	No.	4,91,558	24,116	5,15,674	37.32
	Underground pipe	No.	63,428	0	63,428	4.59

Key Parameters of 6th MI Census-Gujarat

Parameter		Unit	Value			%
	Surface Pipe	No.	6,24,162	17,138	6,41,300	46.41
	Drip	No.	92,736	0	92,736	6.71
	Sprinklers	No.	7,323	0	7,323	0.53
	Others	No.	4,987	0	4,987	0.36
	Total	No.	13,40,589	41255	13,81,844	100.00

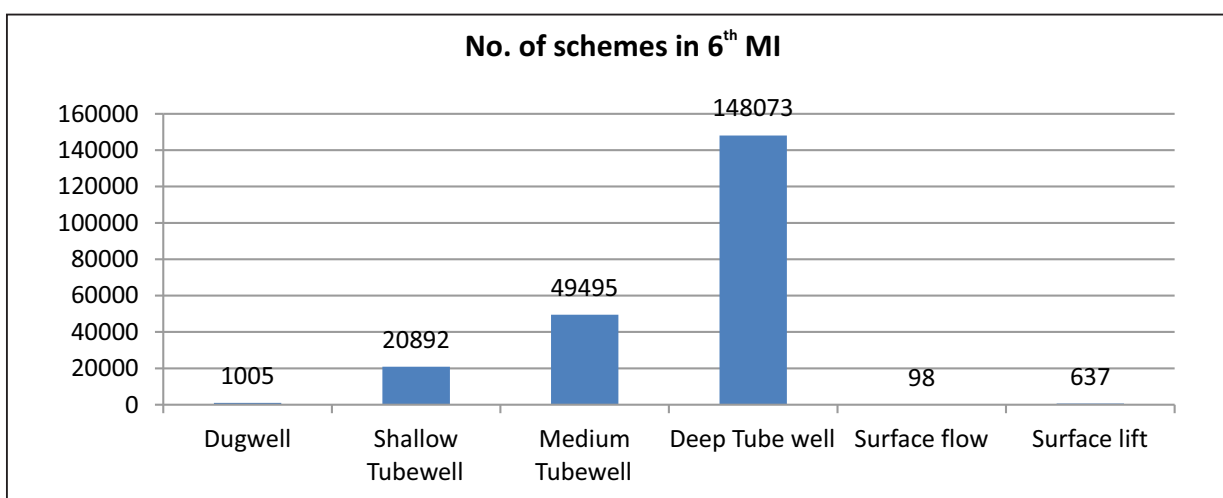
HARYANA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Haryana has 2,20,200 MI schemes comprising of 99.7 % (2,19,465) Ground Water (GW) schemes and 0.3% (735) Surface Water (SW) schemes. There is a decline to the tune of 37.2% in 6th MI census as compared to the 3,50,909 schemes in 5th MI census in the State of Haryana.



The State Government has reported a decline of 37.4% (1,30,846) in GW schemes and increase of 22.9% (137) in SW schemes during 6th MI census as compared to the 3,50,311 GW schemes and 598 SW schemes recorded in 5th census.

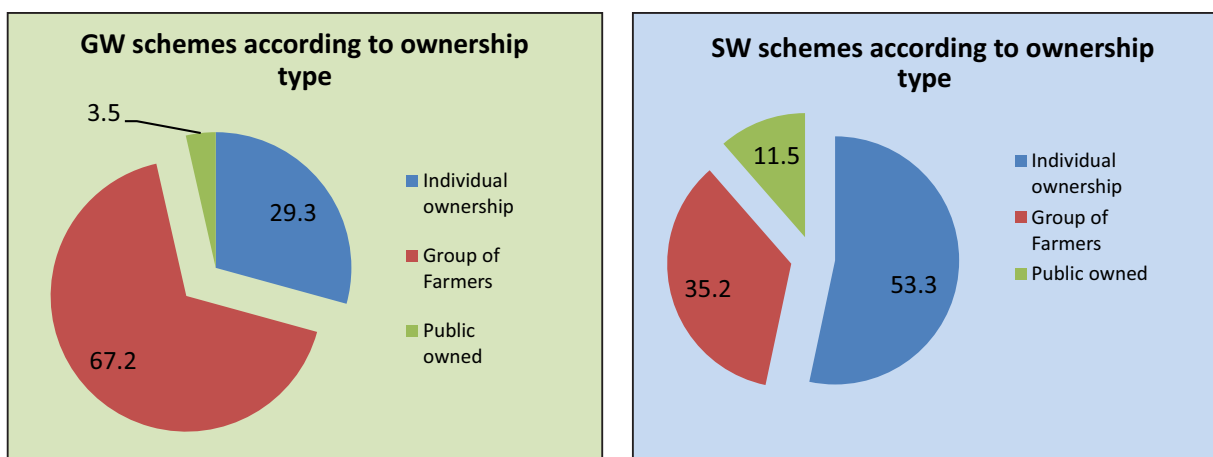
Out of the 2,20,200 MI schemes reported in Haryana, 67.2% (1,48,073) are deep tubewell followed by 22.5% (49,495) medium tubewell and 9.5% (20,892) shallow tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.



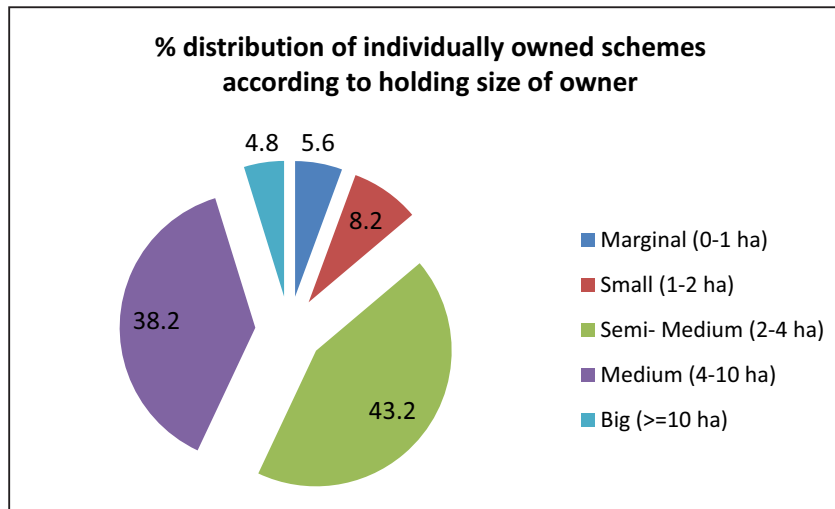
Ownership of MI schemes

Out of 2,20,200 MI schemes, majority of the schemes i.e. 67.1% (1,47,698) continue to remain in the hands of group of farmers, 29.3% (64,631) schemes are owned by individual farmers and a small chunk of 3.6%

(7,871) schemes are public owned. Among 2,19,465 GW schemes, 67.2% (1,47,439) schemes are owned by group of farmers whereas among 735 SW schemes, 53.3% (392) are owned by individual farmers. Percentage distribution of GW and SW schemes according to type of ownership is shown in the pie charts given below.



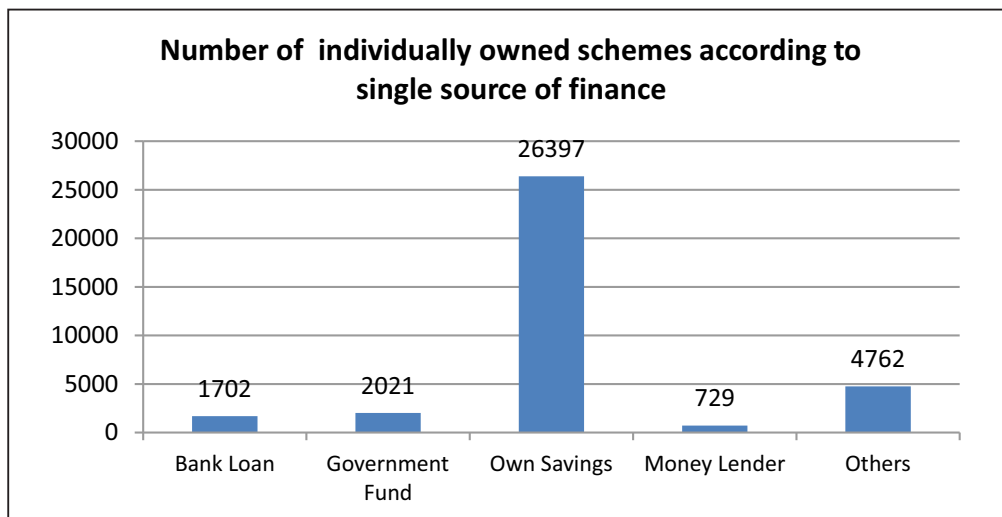
Out of the 64,631 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a share of 13.8% (8,945) in MI schemes. Rest of the 86.2% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the chart given below.



Financing of MI schemes

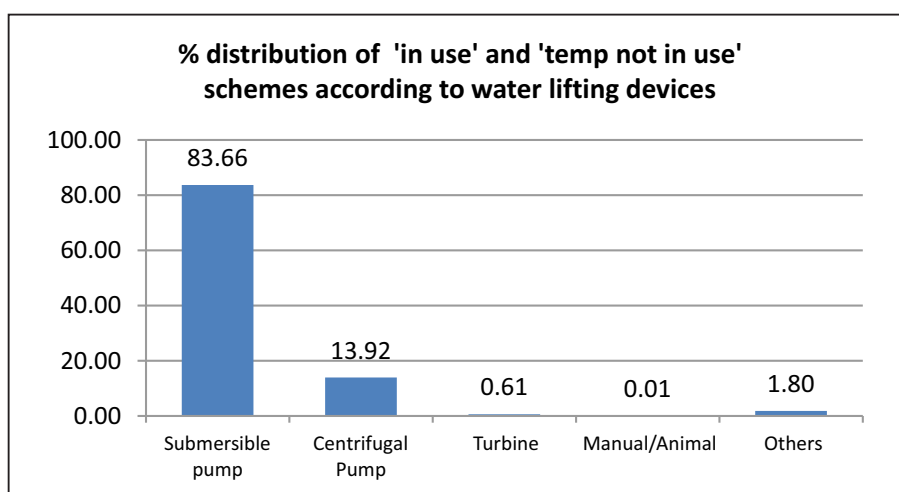
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 64,631 individually owned schemes, 55.1% (35,611) have single source of finance whereas 44.9% (29,020) have more than one source of finance. In these schemes with single source of finance (35,611), majority of schemes i.e. 74.1% (26,397) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 4.8% (1,702), Government fund 5.7% (2,021), money lenders 2.0% (729)

and other sources 13.4% (4,762). 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

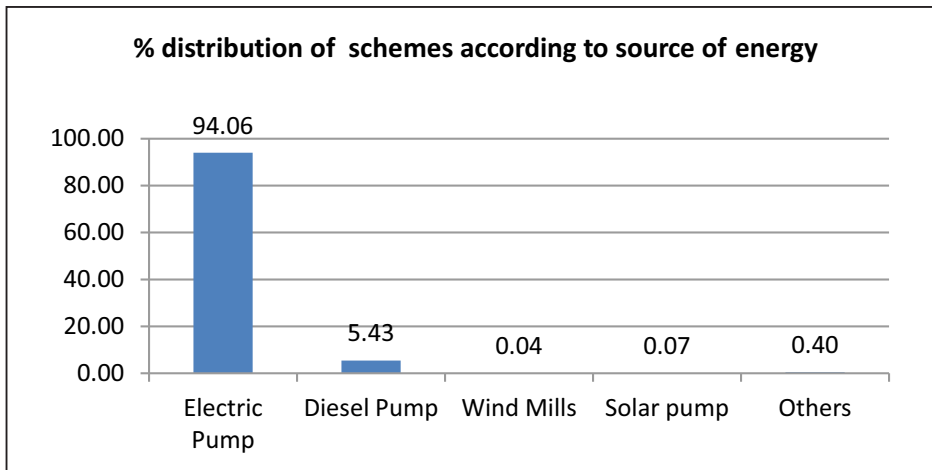
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 2,20,078, out of the 2,20,200 MI schemes. Out of these (2,20,078) schemes, majority of schemes i.e 83.66% (1,84,114) have submersible pump and 13.92% (30,630) schemes have centrifugal pump as lifting device, 0.61% (1340) are operated by turbines, 0.01% (3) schemes are operated manually or by animal for water lifting purposes and rest 1.80% (3991) 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

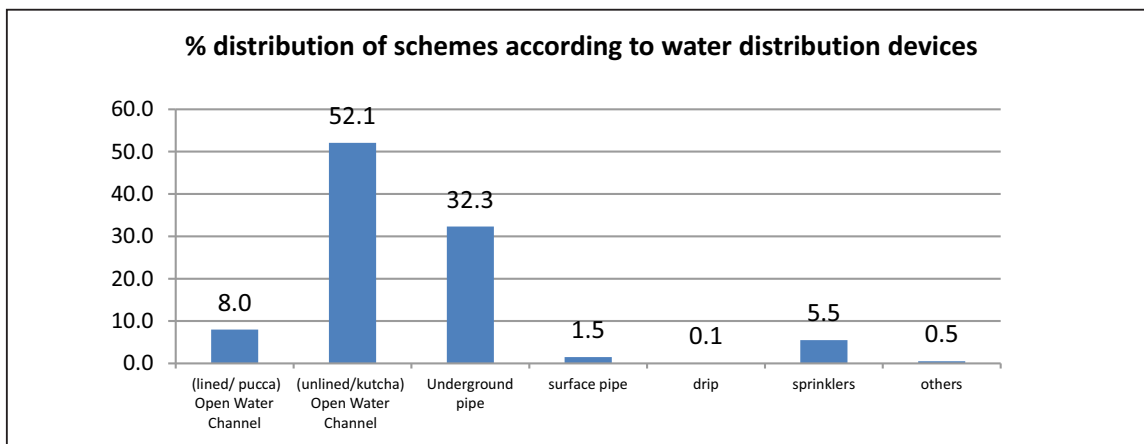
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water

and surface lift schemes. The number of such schemes is 2,20,078. Out of these schemes, majority of schemes i.e 94.06% (2,07,008) schemes are using electricity as source of energy followed by diesel pumps in 5.43% (11,953) schemes. In rest of the cases, 0.07% (159) schemes are using solar pump as source of energy followed by 0.04% (70) windmills and 0.4% (888) schemes are using manual/animal and other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



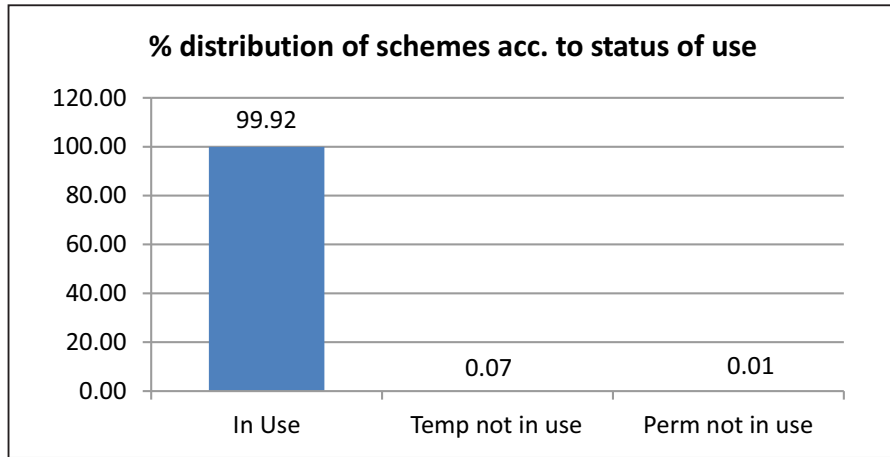
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 52.1% (1,14,571) followed by 32.3% (71,109) through underground pipe, 8.0% (17,563) through open water channel (lined/pucca), 5.5% (12,134) sprinklers and 1.5% (3,336) surface pipes, 0.1% (158) drip and 0.5% (1,162) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

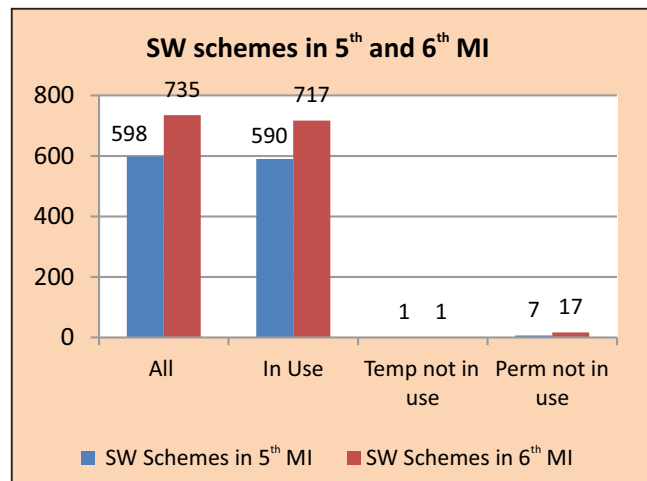
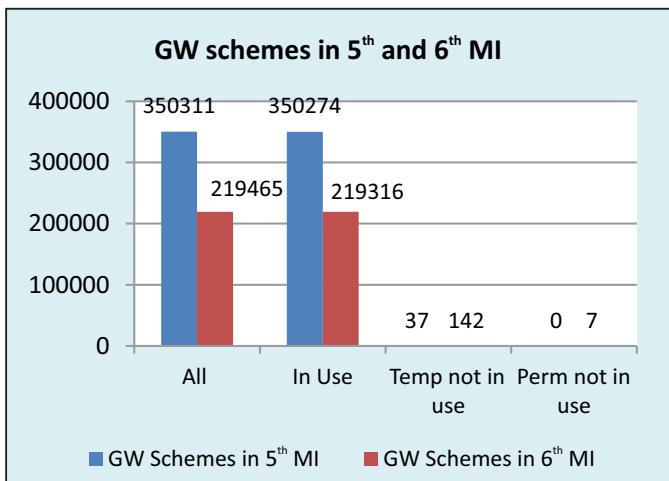


Status of MI schemes

Out of 2,20,200 MI schemes, 99.92% (2,20,033) are 'in use', 0.07% (143) are 'temporarily not in use' and only 0.01% (24) are 'permanently not in use' schemes which is depicted in the chart given below.

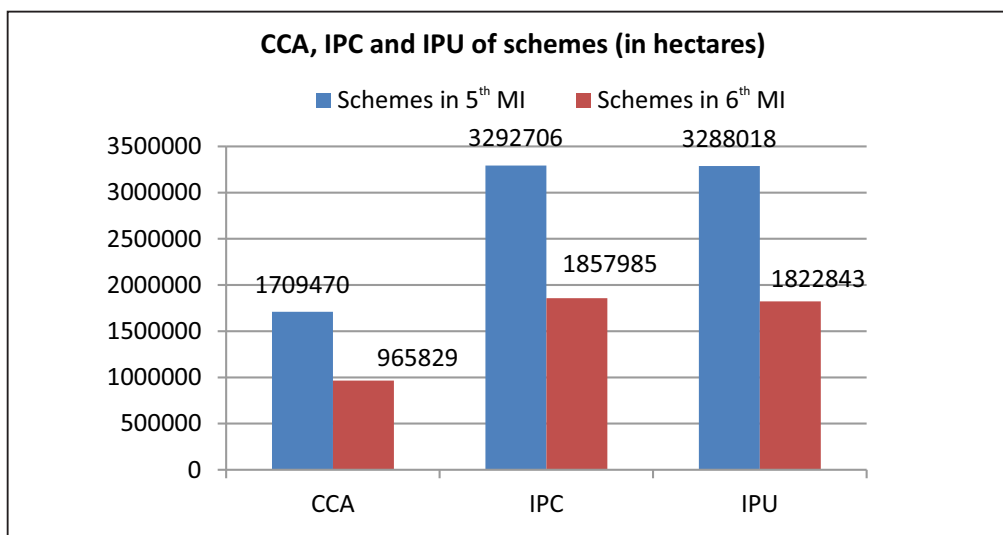


Out of 143 'temporarily not in use' schemes, 142 are GW schemes and only 1 SW scheme. Among 24 'permanently not in use' schemes, 7 are GW schemes and 17 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

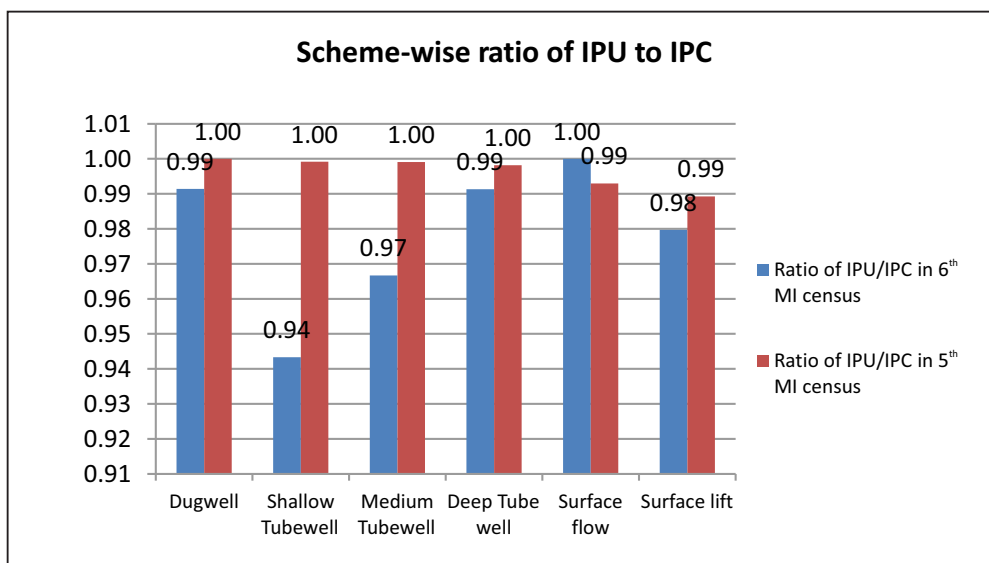
There has been decline of 43.6% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has declined from 32,92,706 hectares during 5th MI census to 18,57,985 hectares during 6th MI census. Irrigation potential utilized was 32,88,018 hectares during 5th MI Census in Haryana, which has declined by 44.6% 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, 18,53,307 hectares irrigation potential is created through GW schemes and 4,679 hectares through SW schemes. Irrigation potential utilized is 18,18,239 hectares and 4604 hectares for GW and SW schemes, respectively. This shows that 98.1% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 98.4%. The scheme-wise ratio of IPU to IPC in Haryana is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	9,875	9,790	0.99
Shallow Tubewell	1,75,022	1,65,104	0.94
Medium Tubewell	4,28,488	4,14,204	0.97
Deep Tubewell	12,39,922	12,29,141	0.99
Surface flow	1,010	1,010	1.00
Surface lift	3,668	3,594	0.98

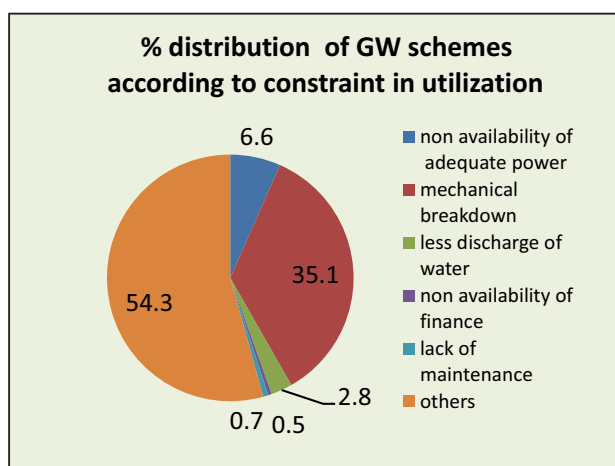
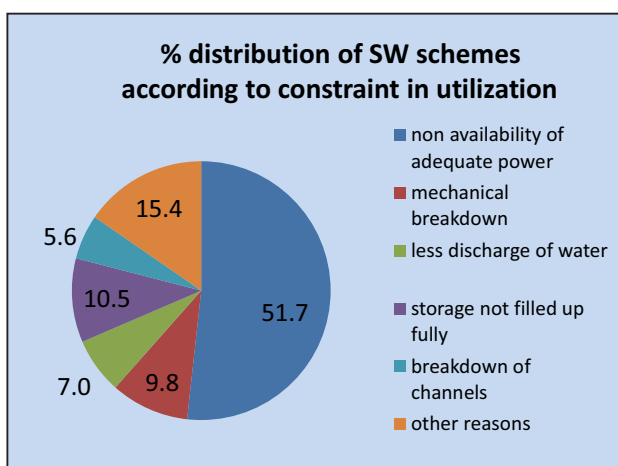
Deep tubewells have the highest IPC & IPU followed by medium and shallow tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 90% utilization of the potential created. A comparative chart showing scheme-wise ratio of IPU/IPC in 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, 2,715 (1.2%) schemes out of 2,20,033 'in use' schemes in Haryana are under-utilised due to several reasons. Remaining 98.8% 'in use' MI schemes are functioning without any constraints.

Among 2,715 under-utilized schemes, 2,572 are GW schemes and 143 are SW schemes. The major factor contributing to constraints in utilization of SW schemes is reported to be non-availability of adequate power. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.



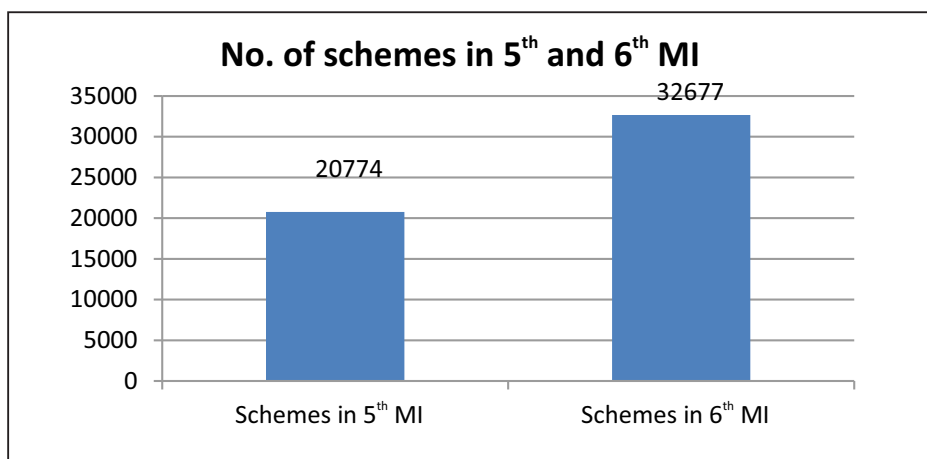
Key Parameters of 6 th MI Census-Haryana						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	1,005			0.46
	Shallow Tubewell	No.	20,892			9.49
	Medium Tubewell	No.	49,495			22.48
	Deep Tubewells	No.	1,48,073			67.24
	Ground Water schemes	No.	2,19,465			99.67
	Surface Flow	No.	98			0.04
	Surface Lift	No.	637			0.29
	Surface Water schemes	No.	735			0.33
	Total schemes	No.	2,20,200			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	9,63,433	2,396	9,65,829	
	IPC	Ha	18,53,307	4,679	18,57,985	
	IPU	Ha	18,18,239	4,604	18,22,843	
	IPC of in use schemes	Ha	18,50,213	4,600	18,54,813	
	IPU of in use schemes	Ha	18,15,216	4,598	18,19,814	
	% Ratio of IPU wrt IPC	%	98.11	98.40	98.11	
	Gap in IPC and IPU	Ha	35,068	75	35,142	
Ownership	Individual ownership	No.	64,239	392	64,631	29.35
	Group of Farmers	No.	1,47,439	259	1,47,698	67.07
	Public owned	No.	7,787	84	7,871	3.57
	Total	No.	2,19,465	735	2,20,200	100.00
Social Status of Individual Owner	SC	No.	1,715	98	1,813	2.81
	ST	No.	302	5	307	0.48
	OBC	No.	5,387	176	5,563	8.61
	Others	No.	56,835	113	56,948	88.11
	Total Individual	No.	64,239	392	64,631	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	17,308	255	17,563	7.98
	Open Water Channel (unlined/ kutchha)	No.	1,14,231	340	1,14,571	52.07
	Underground pipe	No.	71,068	41	71,109	32.32

Key Parameters of 6th MI Census-Haryana

Parameter		Unit	Value			%
	Surface Pipe	No.	3,326	10	3,336	1.52
	Drip	No.	158	0	158	0.07
	Sprinklers	No.	12,070	64	12,134	5.51
	Others	No.	1,155	7	1,162	0.53
	Total	No.	2,19,316	717	2,20,033	100.00

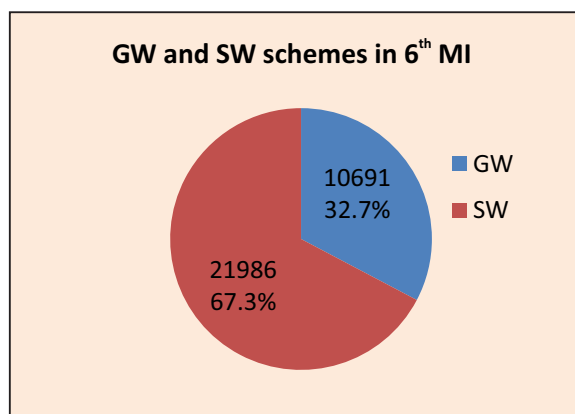
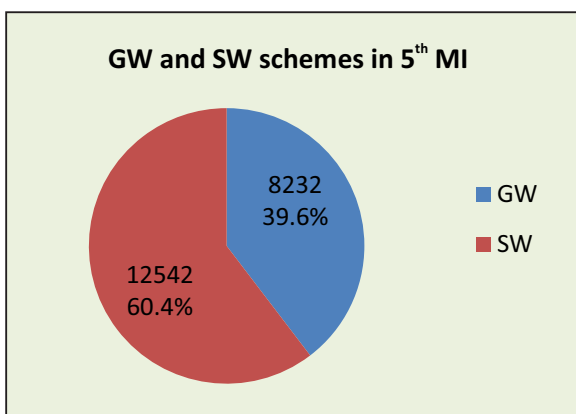
HIMACHAL PRADESH

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Himachal Pradesh has 32,677 MI schemes comprising of 32.7% (10,691) Ground Water (GW) schemes and 67.3% (21,986) Surface Water (SW) schemes. There has been an increase to the tune of 57.3% with 32,677 MI schemes in 6th MI census as compared to the 20,774 schemes in 5th MI census in the State of Himachal Pradesh.

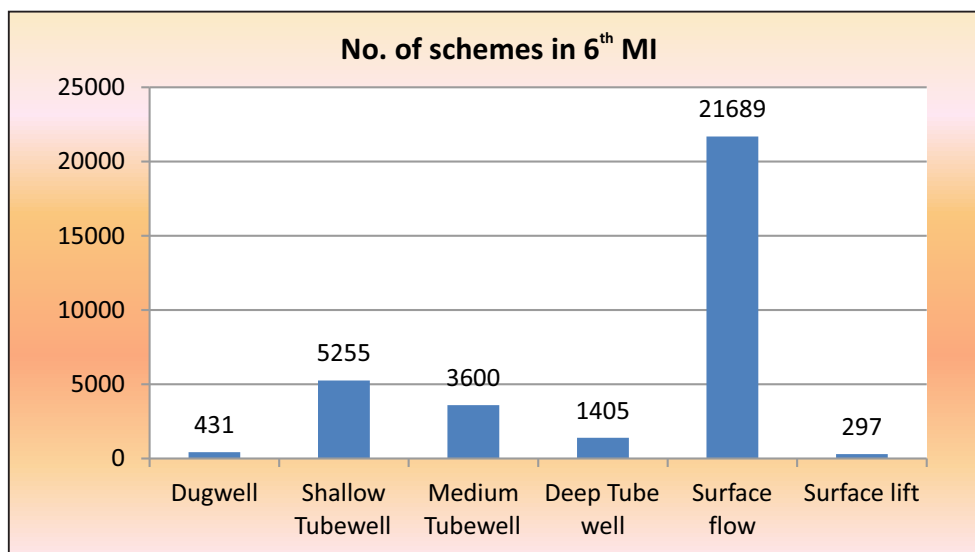


The State Government has reported increase of 29.9% (2,459) in GW schemes and 75.3% (9,444) in SW schemes during 6th MI census as compared to the 8,232 GW schemes and 12,542 SW schemes recorded in 5th census.

Share of GW schemes in the State of Himachal Pradesh has decreased from 39.6% in 5th MI Census to 32.7% in 6th MI Census whereas share of SW schemes has increased from 60.4% in 5th Minor Irrigation Census to 67.3% in 6th MI Census as shown in the chart given below.

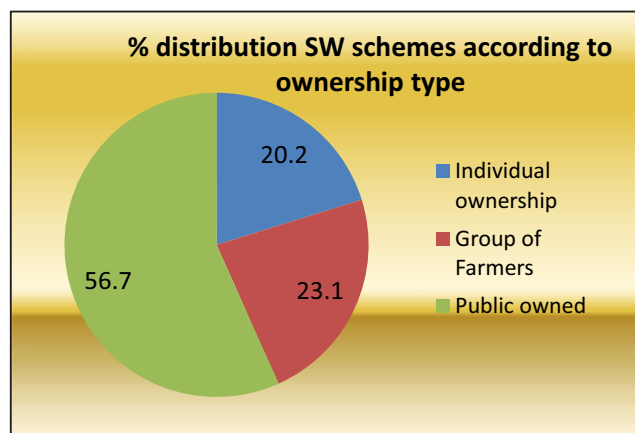
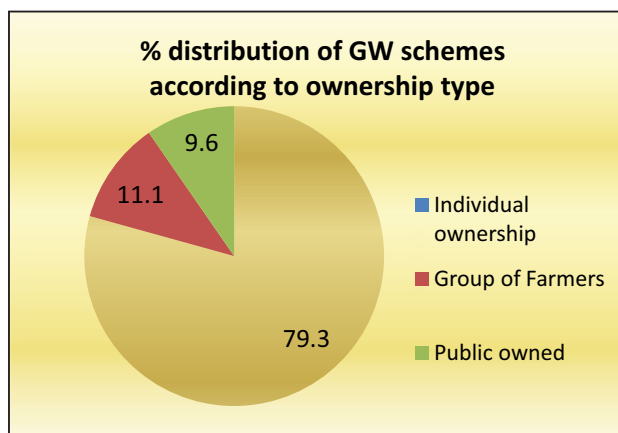


Out of the 32,677 MI schemes reported in Himachal Pradesh, 66.4% (21,689) are surface flow schemes followed by 16.1% (5,255) shallow tubewell and 11% (3,600) medium tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

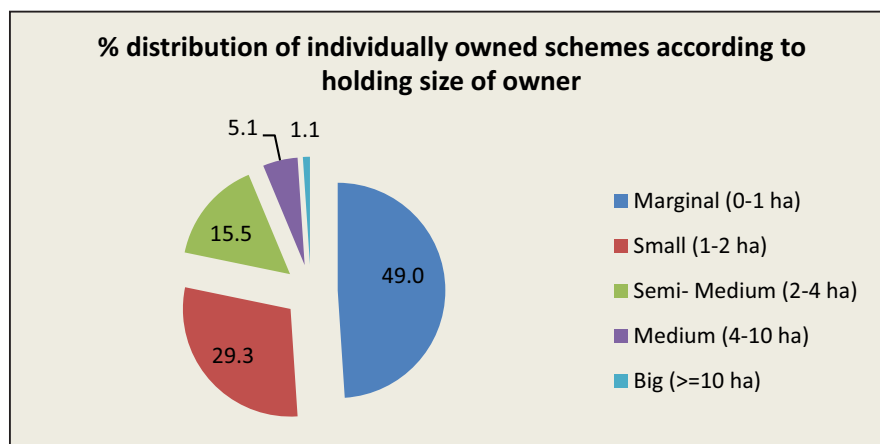


Ownership of MI schemes

Out of 32,677 MI schemes, majority of the schemes i.e. 41.3% (13,495) are public owned, 39.5% (12,919) schemes are under individual ownership and 19.2% (6,263) schemes are owned by group of farmers. Among 10,691 GW schemes, 79.3% (8,478) schemes are individually owned and among 21,986 SW schemes, 56.7% (12,465) are public owned which is also shown in the figure given below.

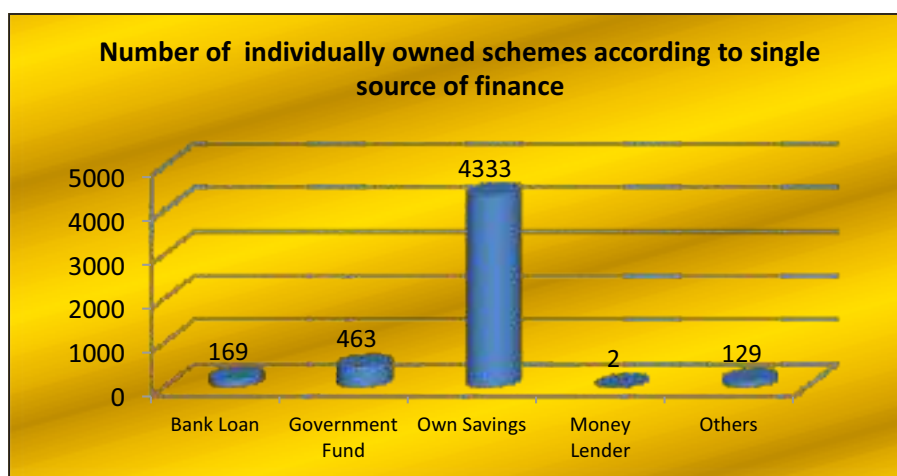


Out of the 12,919 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 78.2 % (10,108) in MI schemes. Rest of the 21.8 % schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



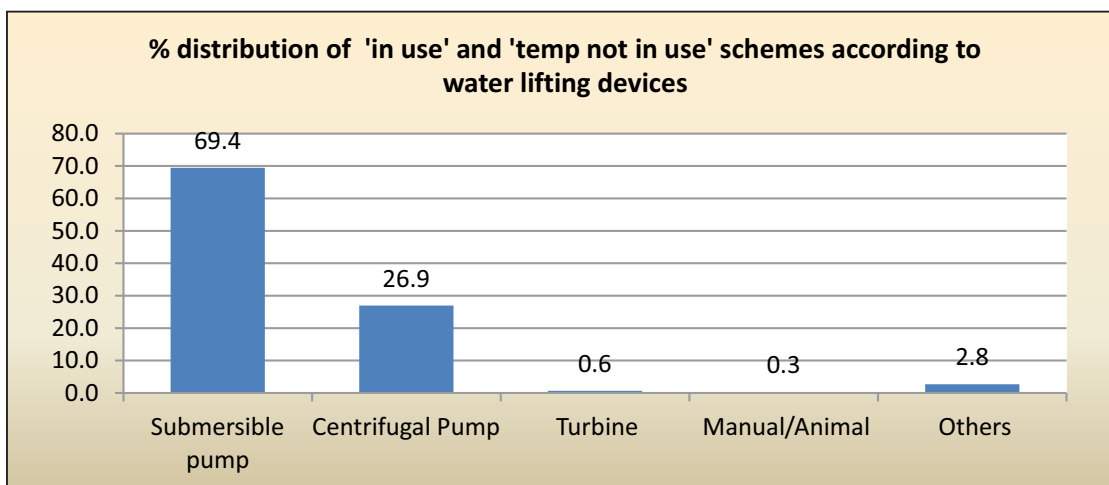
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 12,919 individually owned schemes, 39.4% (5,096) have single source of finance whereas 60.6% (7,823) have more than one source of finance. In these schemes with single source of finance (5,096), majority of schemes i.e. 85.0% (4,333) 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.



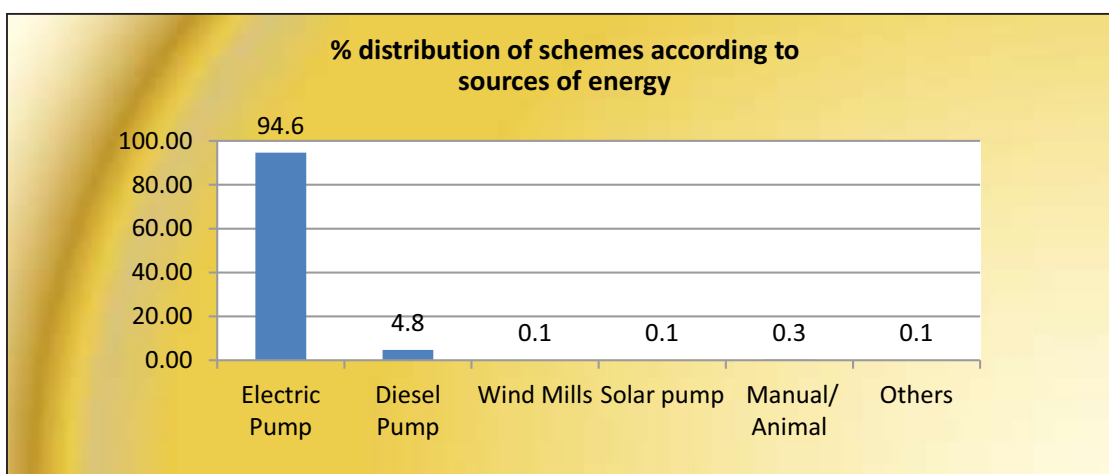
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 10,958, out of the 32,677 MI schemes. Out of these (10,958) schemes, majority of schemes i.e. 69.4% (7,608) have submersible pump and 26.9% (2,953) schemes have centrifugal pump as lifting device. 0.6% (70) schemes are being operated by turbines, 0.3% (30) are operated manually or by animal for water lifting purposes and rest 2.8% (297) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



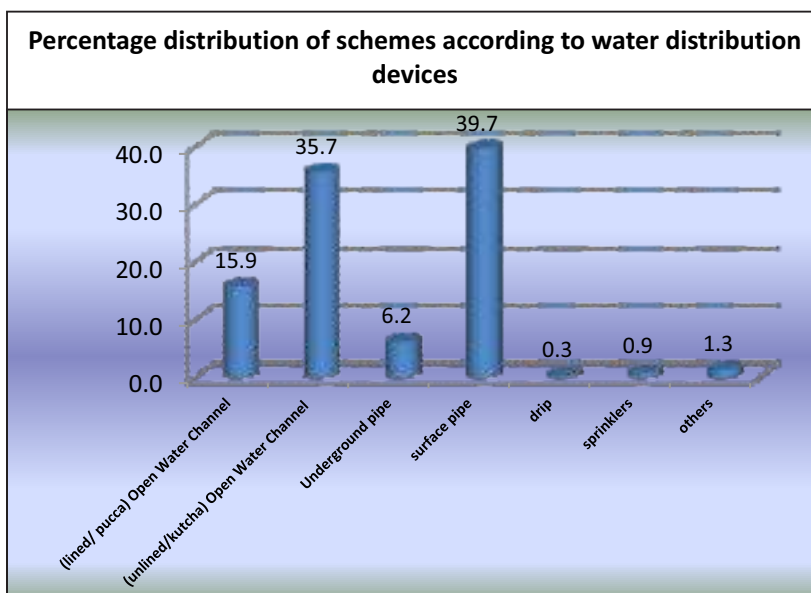
Distribution of source of energy

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 10,958. Out of these schemes, majority of schemes i.e 94.6% (10,373) schemes are using electricity as source of energy followed by diesel pumps in 4.8% (523) schemes. The percentage distribution of schemes according to source of energy is shown in the chart given below.



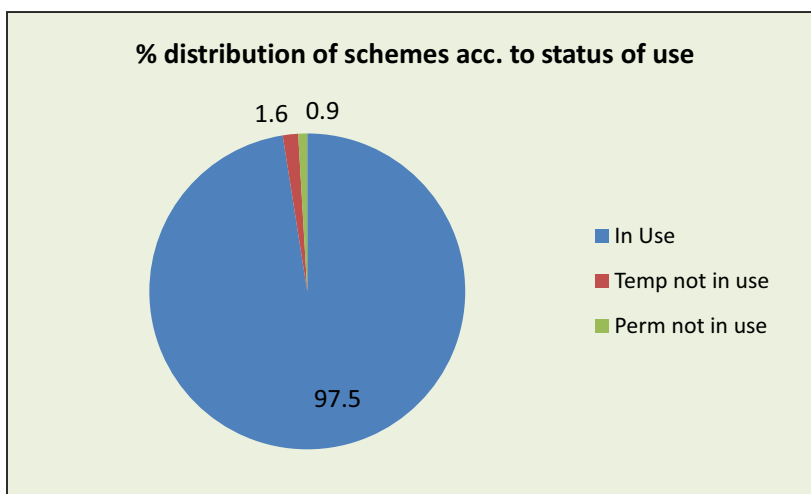
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipes is 39.7% (12,654) followed by 35.7% (11,366) open water channel (unlined/kutchra) and 15.9% (5,052) open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are 6.2% (1,968) underground pipes, 0.9% (282) sprinklers, 0.3% (94) drip and 1.3% (446) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

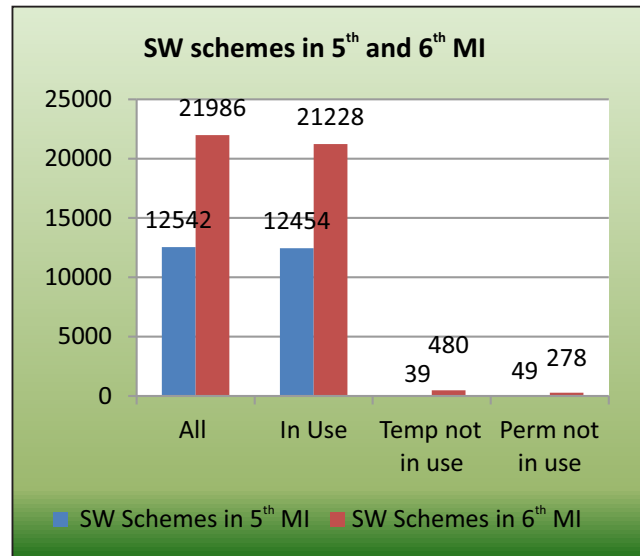
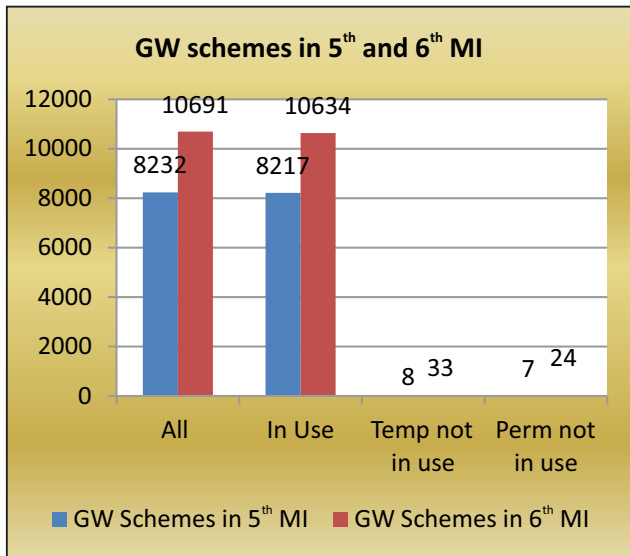


Status of MI schemes

Out of total number of 32,677 MI schemes, 97.5% (31,862) are 'in use', 1.6% (513) are 'temporarily not in use' and only 0.9 % (302) are 'permanently not in use' schemes which is depicted in the pie chart given below.

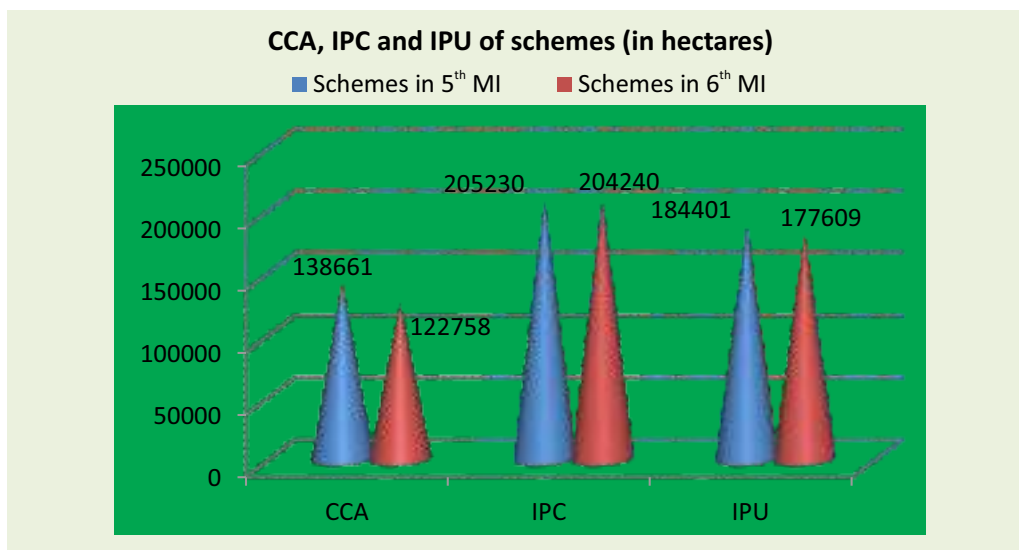


Out of 513 'temporarily not in use' schemes, 33 are GW schemes and 480 are SW schemes. Among 302 'permanently not in use' schemes, 24 are GW schemes and 278 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

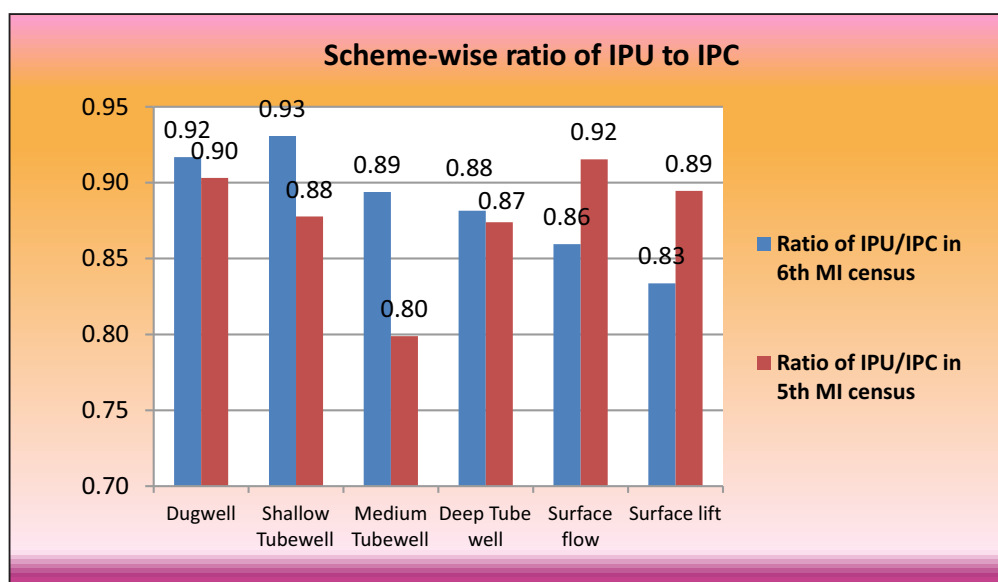
There has been marginal decline of 0.5 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has declined from 2,05,230 hectares during 5th MI census to 2,04,240 hectares during 6th MI census. Irrigation potential utilized was 1,84,401 hectares during 5th MI Census in Himachal Pradesh, which has declined by 3.7% 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, 63,634 hectares irrigation potential is created through GW schemes and 1,40,606 hectares through SW schemes. Irrigation potential utilized is 57,012 and 1,20,597 hectares for GW and SW schemes, respectively. This shows that 89.6% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 85.8%. The scheme-wise ratio of IPU to IPC in Himachal Pradesh is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	1,614	1,480	0.92
Shallow Tubewell	11,567	10,766	0.93
Medium Tubewell	23,632	21,123	0.89
Deep Tube well	26,821	23,644	0.88
Surface flow	1,30,970	1,12,564	0.86
Surface lift	9,636	8,033	0.83

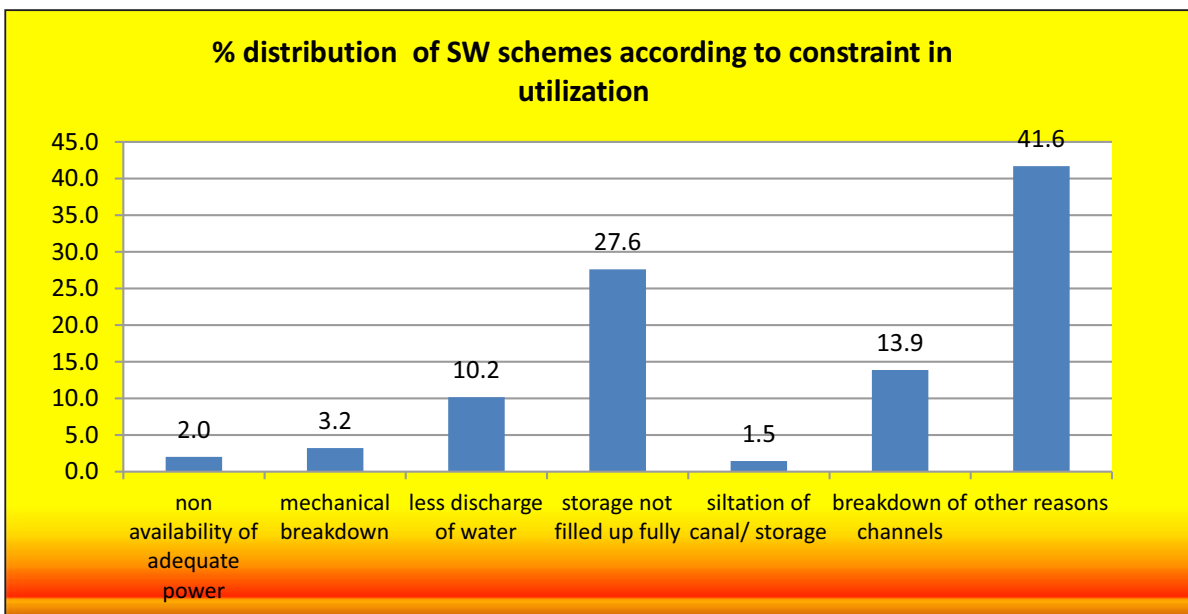
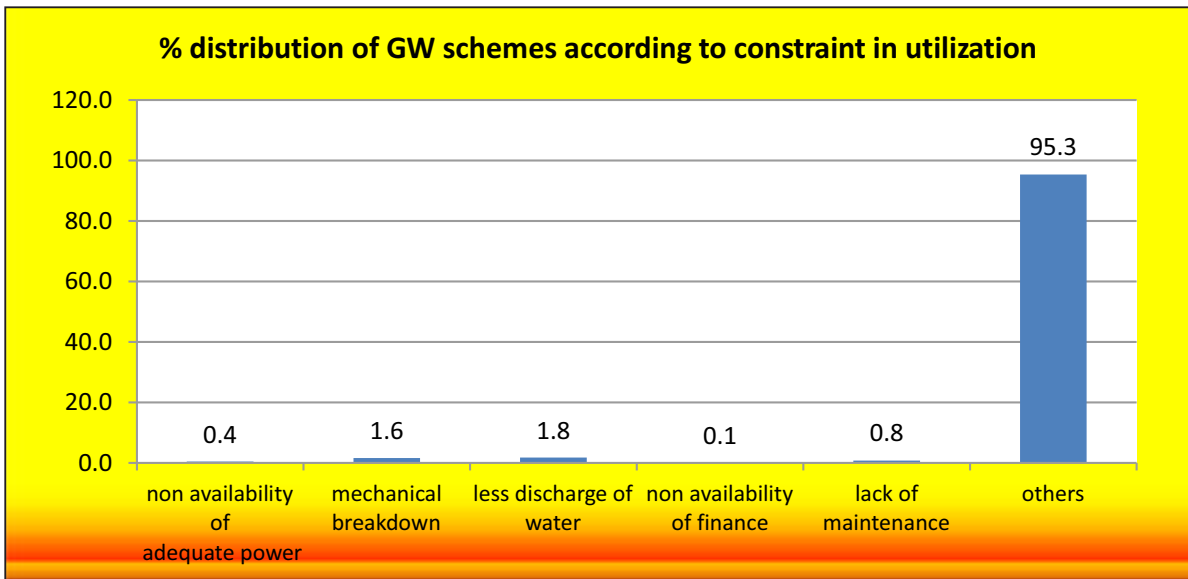
Surface flow schemes have the highest IPC & IPU followed by deep and medium tube well schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 85% utilization of the potential created except surface lift scheme with a utilization of 83%. A comparative 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, 10.5% (3,352) schemes out of 31,862 'in use' schemes in Himachal Pradesh are under-utilized due to several reasons. Remaining 89.5% 'in use' MI schemes are functioning without any constraints.

Among 3,352 under-utilized schemes, 1,421 are GW schemes and 1,931 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in charts given below.



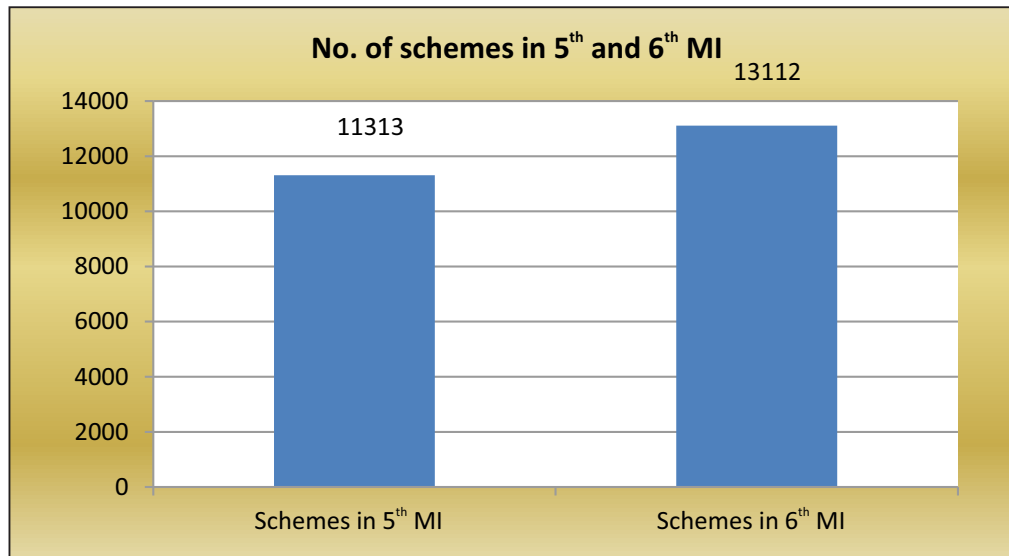
Key Parameters of 6 th MI Census-Himachal Pradesh						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	431			1.32
	Shallow Tubewell	No.	5,255			16.08
	Medium Tubewell	No.	3,600			11.02
	Deep Tubewells	No.	1,405			4.30
	Ground Water schemes	No.	10,691			32.72
	Surface Flow	No.	21,689			66.37
	Surface Lift	No.	297			0.91
	Surface Water schemes	No.	21,986			67.28
	Total schemes	No.	32,677			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	37,860	84,898	1,22,758	
	IPC	Ha	63,634	1,40,606	2,04,240	
	IPU	Ha	57,012	1,20,597	1,77,609	
	IPC of in use schemes	Ha	63,399	1,36,053	1,99,452	
	IPU of in use schemes	Ha	56,898	1,18,236	1,75,135	
	% Ratio of IPU wrt IPC	%	89.59	85.77	86.96	
	Gap in IPC and IPU	Ha	6,622	20,009	26,631	
Ownership	Individual ownership	No.	8,478	4,441	12,919	39.54
	Group of Farmers	No.	1,183	5,080	6,263	19.17
	Public owned	No.	1,030	12,465	13,495	41.30
	Total	No.	10,691	21,986	32,677	100.00
Social Status of Individual Owner	SC	No.	851	677	1,528	11.83
	ST	No.	413	422	835	6.46
	OBC	No.	3,719	145	3,864	29.91
	Others	No.	3,495	3,197	6,692	51.80
	Total Individual	No.	8,478	4,441	12,919	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	680	4,372	5,052	15.86
	Open Water Channel (unlined/ kutchha)	No.	5,722	5,644	11,366	35.67

Key Parameters of 6th MI Census-Himachal Pradesh

Parameter	Unit	Value			%
Underground pipe	No.	1,414	554	1,968	6.18
Surface Pipe	No.	2,759	9,895	12,654	39.72
Drip	No.	4	90	94	0.30
Sprinklers	No.	15	267	282	0.89
Others	No.	40	406	446	1.40
Total	No.	10,634	21,228	31,862	100.00

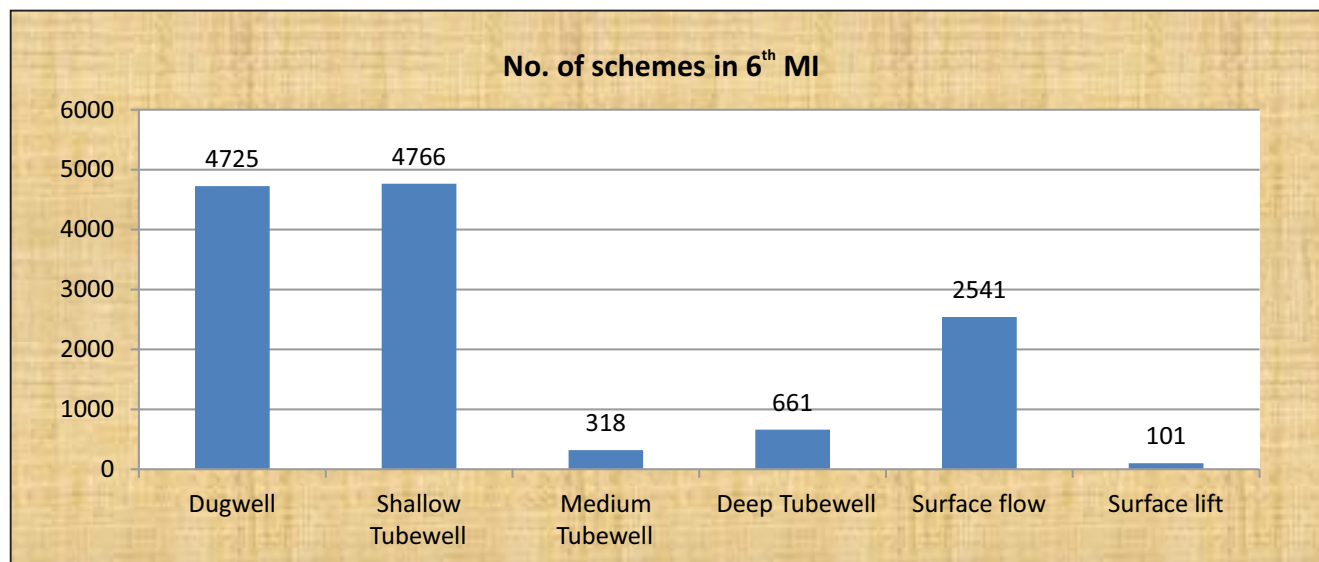
JAMMU & KASHMIR

As per the 6th Census of Minor Irrigation (MI) Schemes with reference year 2017-18, J&K has 13,112 MI schemes comprising of 79.9 % (10,470) Ground Water (GW) schemes and 20.1% (2,642) Surface Water (SW) schemes. There is an increment of the tune of 15.9 % in 6th MI census with 13,112 schemes as compared to the 11,313 schemes in 5th MI census in the State of Jammu and Kashmir.



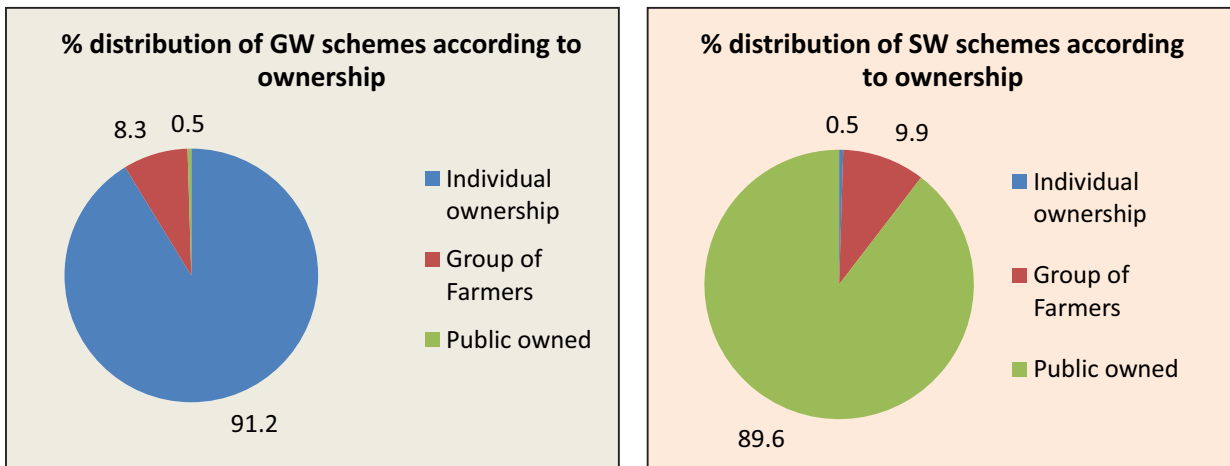
The State Government has reported an increment of 25.7% in GW schemes and decline of 11.4% in SW schemes during 6th MI census as compared to the 8,332 GW schemes and 2,981 SW schemes recorded in 5th census.

Out of the 13,112 MI schemes reported in J&K, 36.3% (4,766) are shallow tubewell followed by 36% (4,725) dugwell schemes and 19.3% (2,541) are surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.

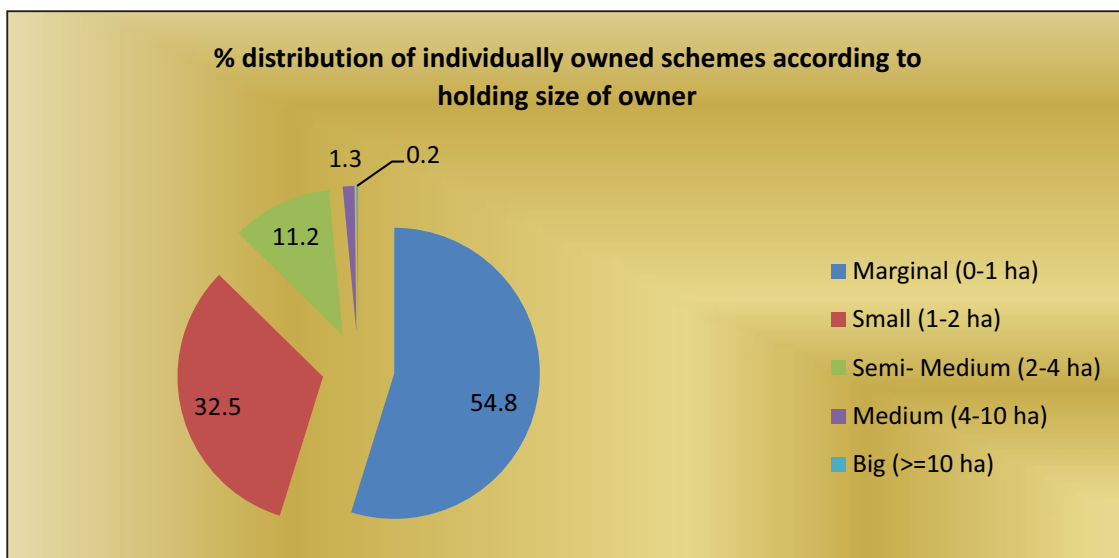


Ownership of MI schemes

Out of 13,112 MI schemes, majority of the schemes i.e. 73% (9,568) continue to remain under individual ownership, 8.6% (1,127) schemes are owned by group of farmers and 18.4% (2,417) schemes are public owned. Among 10,470 GW schemes, 91.2% (9,555) schemes are individually owned. However most of the SW schemes in J&K are public owned. Distribution of GW and SW schemes according to type of ownership is shown in the charts given below.

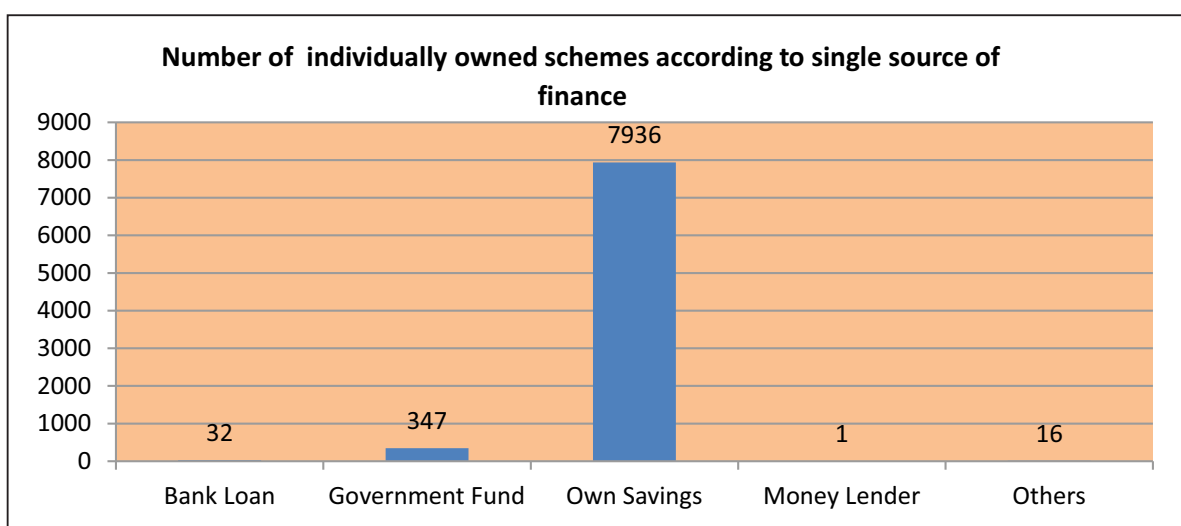


Out of 9,568 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 87.3% (8,357) in MI schemes. Rest of the 12.7% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



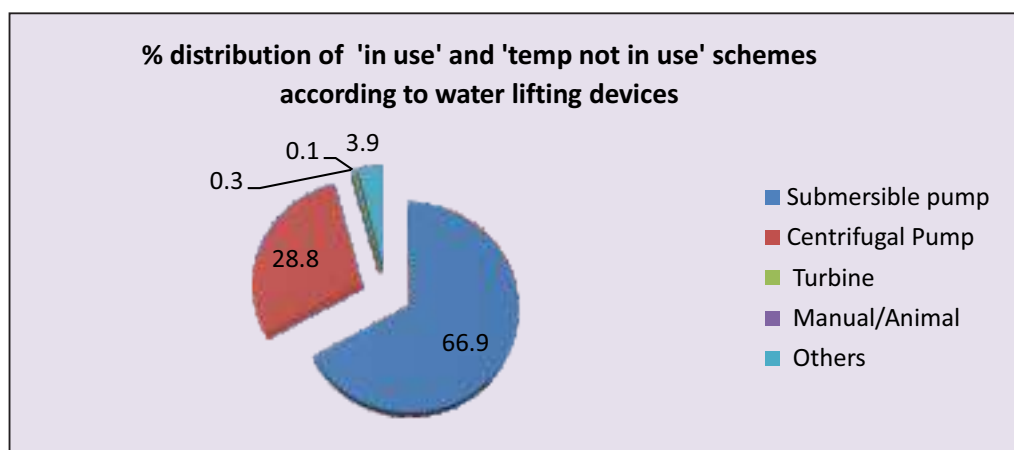
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 9,568 individually owned schemes, 87% (8,332) have single source of finance whereas 13% (1,236) have more than one source of finance. In these schemes with single source of finance (8,332), majority of schemes i.e. 95.2% (7,936) are being financed by own savings of individual farmer followed by Government fund 4.2% (347). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



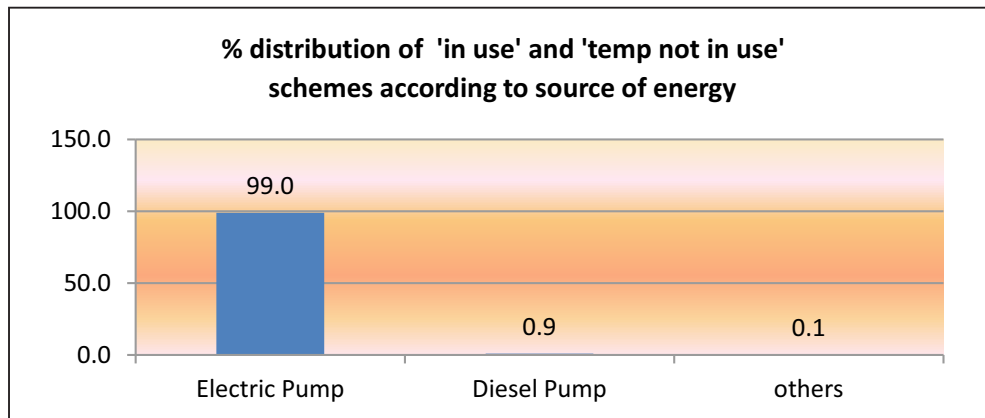
Distribution of lifting devices in MI schemes

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 10,569, out of 13,112 MI schemes. Out of these (10,569) schemes, majority of schemes i.e. 66.9% (7,073) have submersible pump and 28.8% (3,046) schemes have centrifugal pump as lifting device. 0.1% (6) schemes are being operated manually or by animal for water lifting purposes, 0.3% (30) are operated by turbines and rest 3.9% (414) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



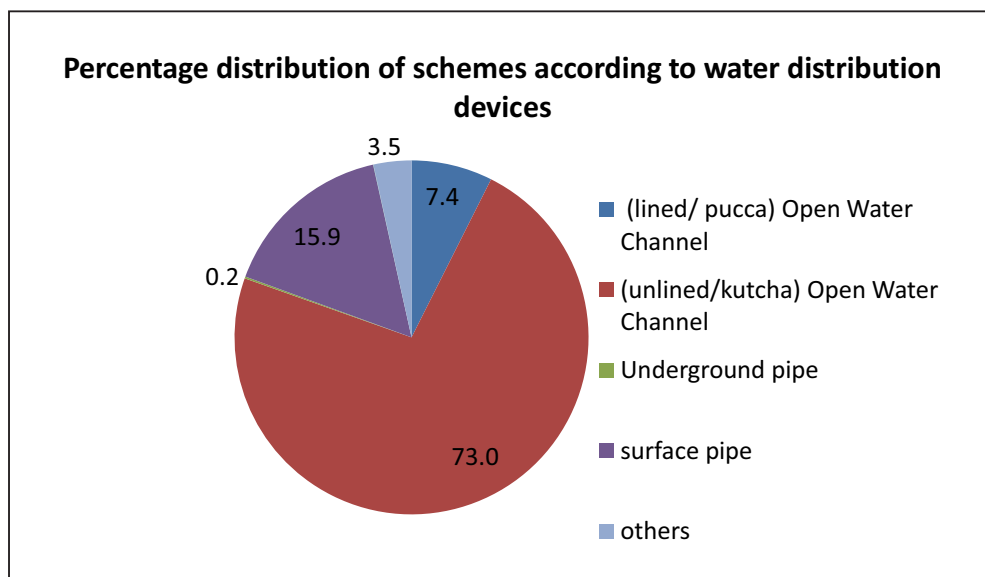
Distribution of source of energy

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 10,569. Out of these schemes, majority of schemes i.e 99.0% (10,460) schemes are using electric pump as source of energy followed by diesel pump in 0.9% (93) schemes. The percentage distribution of schemes according to source of energy is shown in the chart given below.



Water distribution device

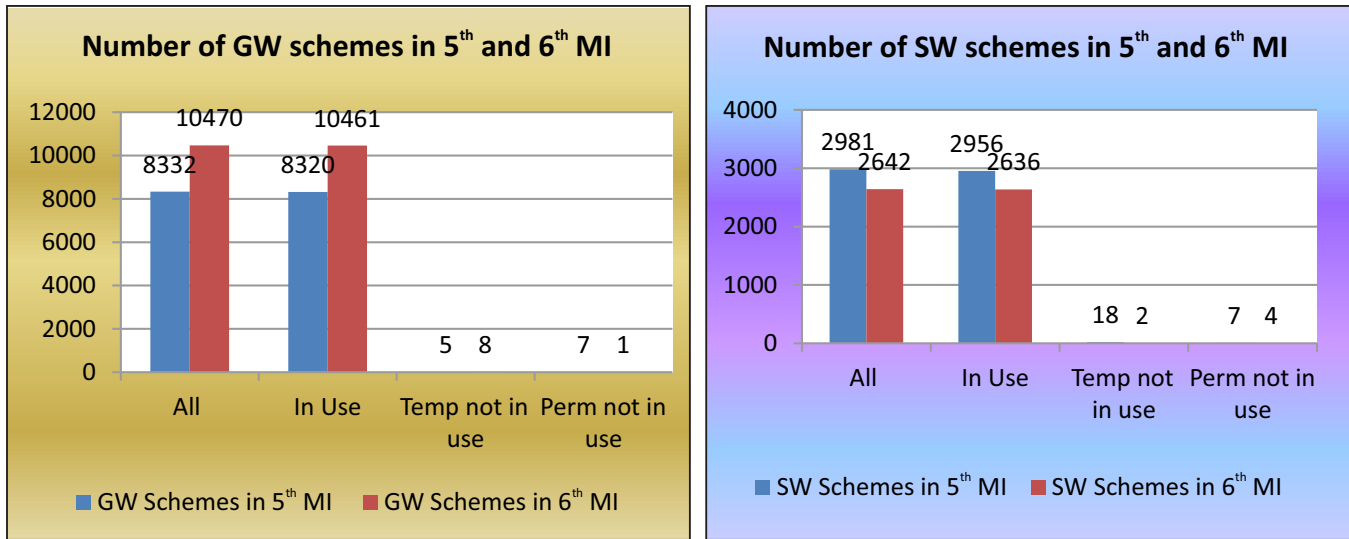
As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutcha) is 73.0% (9,560) followed by 15.9% (2,086) surface pipes. The water distribution devices used in the rest of the MI schemes are 7.4% (972) open water channel (lined/pucca), 0.2% underground pipe (22), and 3.5% (457) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



Status of MI schemes

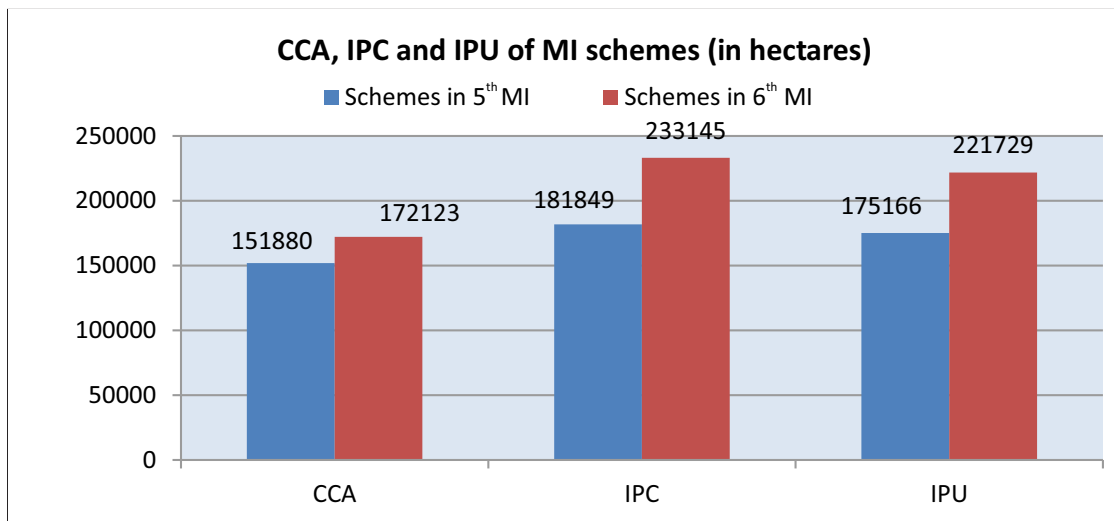
Out of 13,112 MI schemes, 99.9% (13,097) are 'in use', 0.07% (10) are 'temporarily not in use' and only 0.03% (5) are 'permanently not in use' schemes.

Out of 10 'temporarily not in use' schemes, 8 are GW schemes and 2 are SW schemes. Among 5 'permanently not in use' schemes, there is only one GW scheme and 4 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)

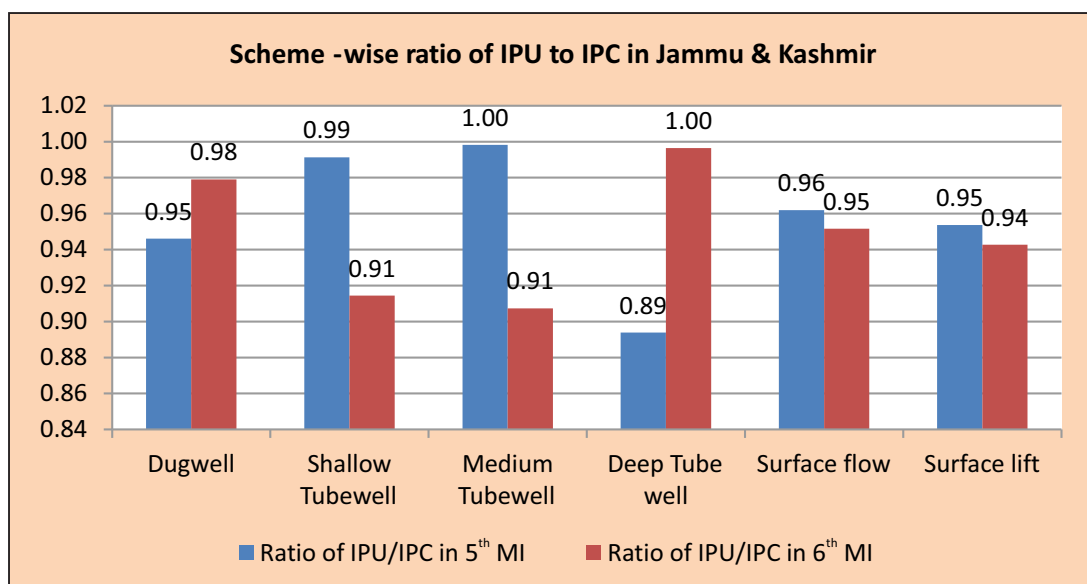
There has been an increase of 28.2 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has increased from 1,81,849 hectares during 5th MI census to 2,33,145 hectares during 6th MI census. Irrigation potential utilized was 1,75,166 hectares during 5th MI Census in J&K, which has increased by 26.6 % 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, 20,622 hectares irrigation potential is created through GW schemes and 2,12,523 hectares through SW schemes. Irrigation potential utilized is 19,537 hectares and 2,02,193 hectares for GW and SW schemes, respectively. This shows that 94.7 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 95.1%. The scheme-wise ratio of IPU to IPC in J&K is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Jammu & Kashmir			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	8,939	8,751	0.98
Shallow Tubewell	9,544	8,727	0.91
Medium Tubewell	817	741	0.91
Deep Tubewell	1,322	1,317	1.00
Surface flow	2,06,572	1,96,582	0.95
Surface lift	5,951	5,610	0.94

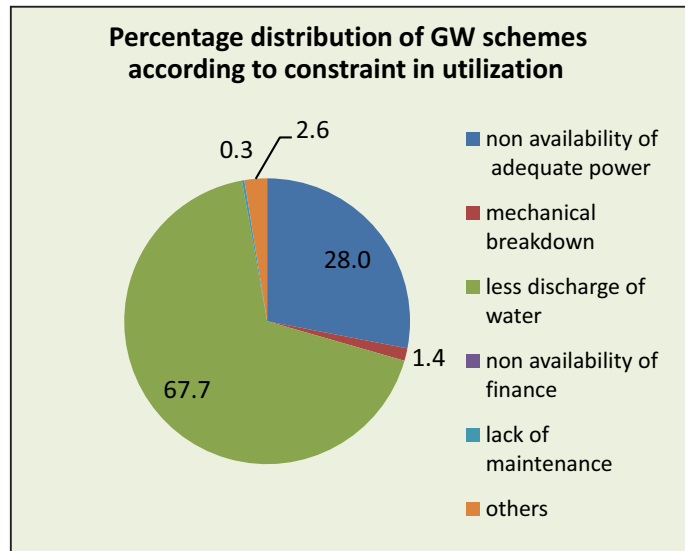
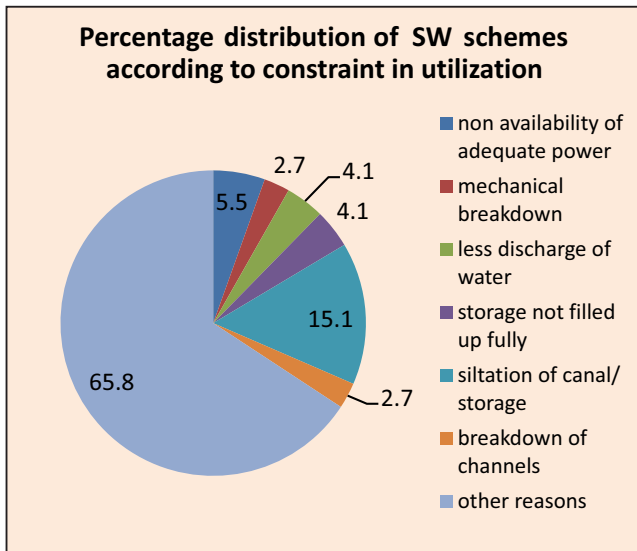
Surface flow schemes have the highest IPC & IPU followed by shallow tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 94% utilization of the potential created except shallow tubewell and medium tubewell schemes with a utilization of 91%. 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, 426 (3.2%) schemes out of 13,097 'in use' schemes in Jammu & Kashmir are under-utilised due to several reasons. Remaining 96.8% 'in use' MI schemes are functioning without any constraints.

Among 426 under-utilized schemes, 353 are GW schemes and 73 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' followed by non-availability of adequate power. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



Key Parameters of 6th MI Census-Jammu & Kashmir

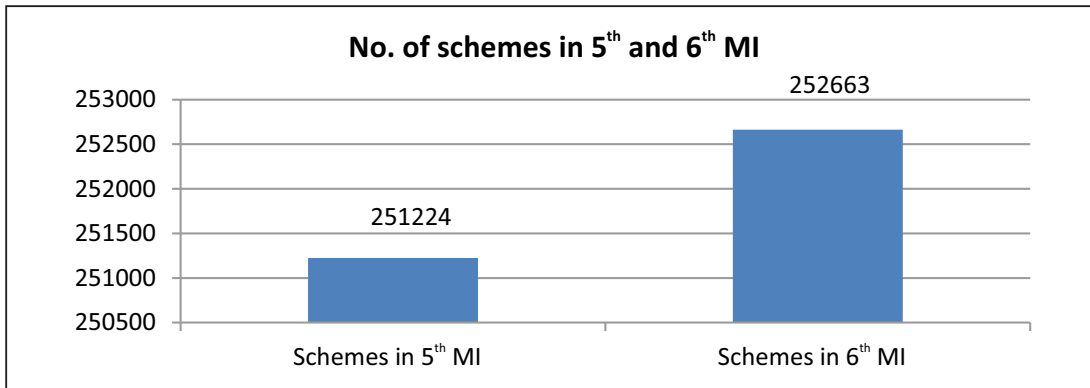
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	4,725			36.04
	Shallow Tubewell	No.	4,766			36.35
	Medium Tubewell	No.	318			2.43
	Deep Tubewells	No.	661			5.04
	Ground Water schemes	No.	10,470			79.85
	Surface Flow	No.	2,541			19.38
	Surface Lift	No.	101			0.77
	Surface Water schemes	No.	2,642			20.15
	Total schemes	No.	13,112			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	10,839	1,61,285	1,72,123	
	IPC	Ha	20,622	2,12,523	2,33,145	
	IPU	Ha	19,537	2,02,193	2,21,729	
	IPC of in use schemes	Ha	20,609	2,12,516	2,33,125	
	IPU of in use schemes	Ha	19,530	2,02,193	2,21,723	
	% Ratio of IPU wrt IPC	%	94.74	95.14	95.10	
	Gap in IPC and IPU	Ha	1,085	10,330	11416	
Ownership	Individual ownership	No.	9,555	13	9,568	72.97
	Group of Farmers	No.	865	262	1,127	8.60
	Public owned	No.	50	2,367	2,417	18.43
	Total	No.	10,470	2,642	13,112	100.00
Social Status of Individual Owner	SC	No.	1,816	6	1,822	19.04
	ST	No.	142	6	148	1.55
	OBC	No.	590	0	590	6.17
	Others	No.	7,007	1	7,008	73.24
	Total Individual	No.	9,555	13	9,568	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	678	294	972	7.42
	Open Water Channel (unlined/ kutcha)	No.	7,559	2,001	9,560	72.99

Key Parameters of 6th MI Census-Jammu & Kashmir

Parameter	Unit	Value			%
Underground pipe	No.	15	7	22	0.17
Surface Pipe	No.	2,081	5	2,086	15.93
Drip	No.	3	0	3	0.02
Sprinklers	No.	1	0	1	0.01
Others	No.	124	329	453	3.46
Total	No.	10,461	2,636	13,097	100.00

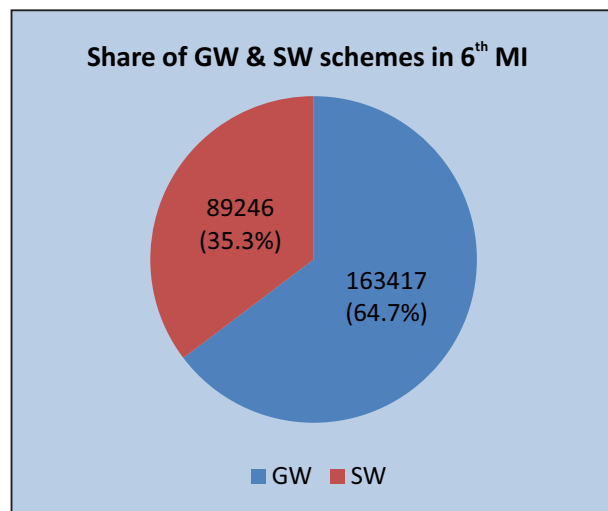
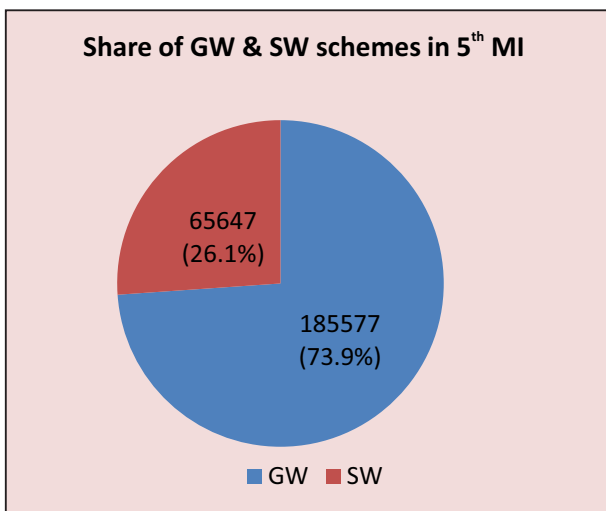
JHARKHAND

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Jharkhand has 2,52,663 MI schemes comprising of 64.7% (1,63,417) Ground Water (GW) schemes and 35.3% (89,246) Surface Water (SW) schemes. The MI schemes have increased by 0.6% in 6th MI census as compared to the 2,51,224 schemes in 5th MI census in the State of Jharkhand.

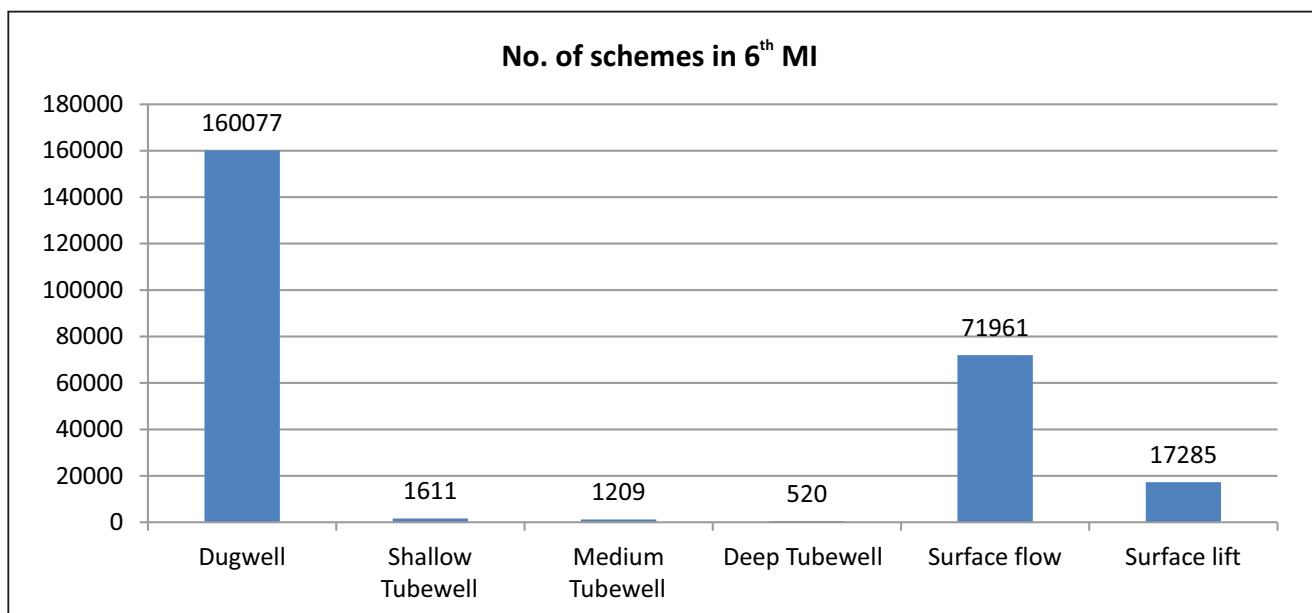


The State Government has reported a decline of 11.9% (22,160) in GW schemes and increase of 35.9% (23,599) in SW schemes during 6th MI census as compared to the 1,85,577 GW schemes and 65,647 SW schemes recorded in 5th MI census.

Share of GW schemes in the State of Jharkhand has declined from 73.9% in 5th MI Census to 64.7% in 6th MI Census whereas share of SW schemes has increased from 26.1% in 5th Minor Irrigation Census to 35.3% in 6th MI Census as shown in the pie chart given below.

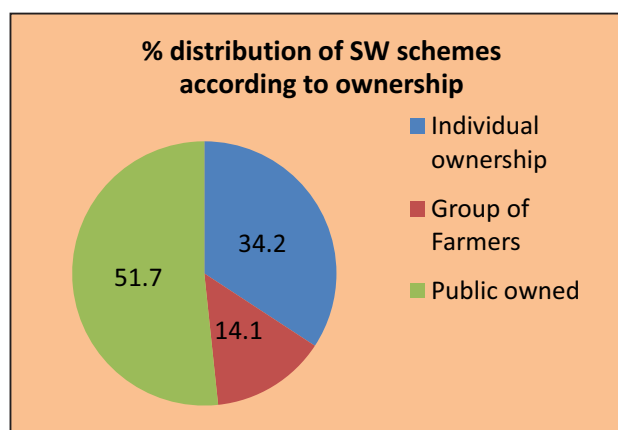
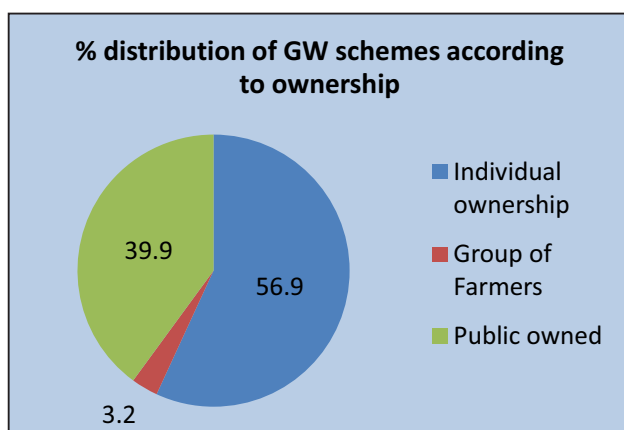


Out of the 2,52,663 MI schemes reported in Jharkhand, 63.4% (1,60,077) are dugwells followed by 28.5% (71,961) surface flow and 6.8% (17,285) surface lift schemes. Distribution of different GW and SW schemes is shown in the chart given below.

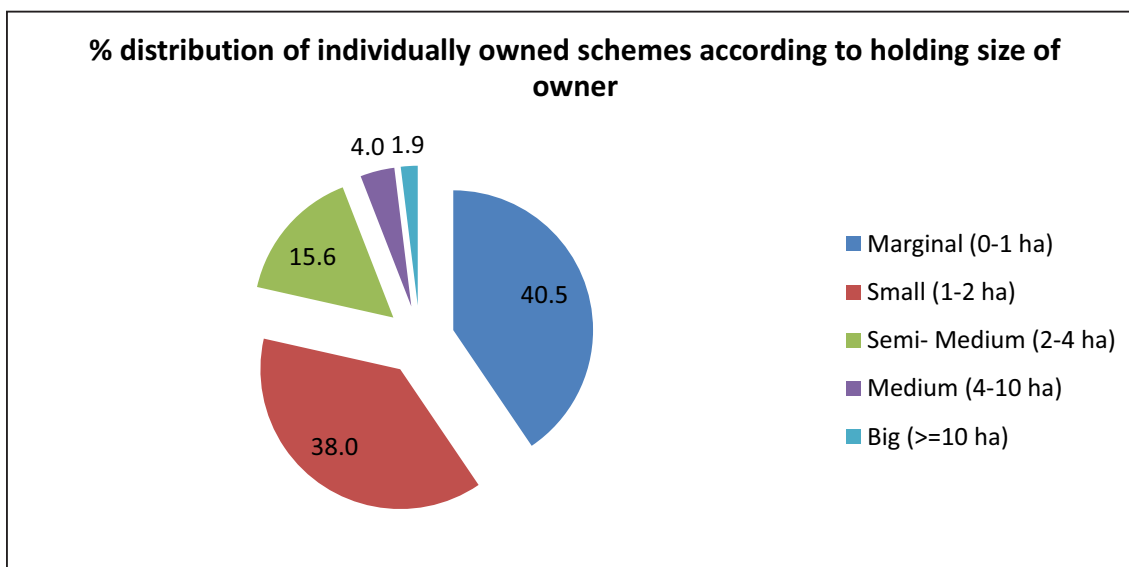


Ownership of MI schemes

Out of 2,52,663 MI schemes, majority of the schemes i.e. 48.9% (1,23,484) schemes are owned by individual farmers, 7% (17,790) schemes are owned by group of farmers and 44.1% (1,11,389) schemes are publically owned. Among 1,63,417 GW schemes, majority i.e. 56.9% (92,943) schemes are individually owned whereas among 89,246 SW schemes, majority i.e 51.7% (46,112) are public owned. Percentage distribution of MI schemes according to ownership is also shown in the figure given below.

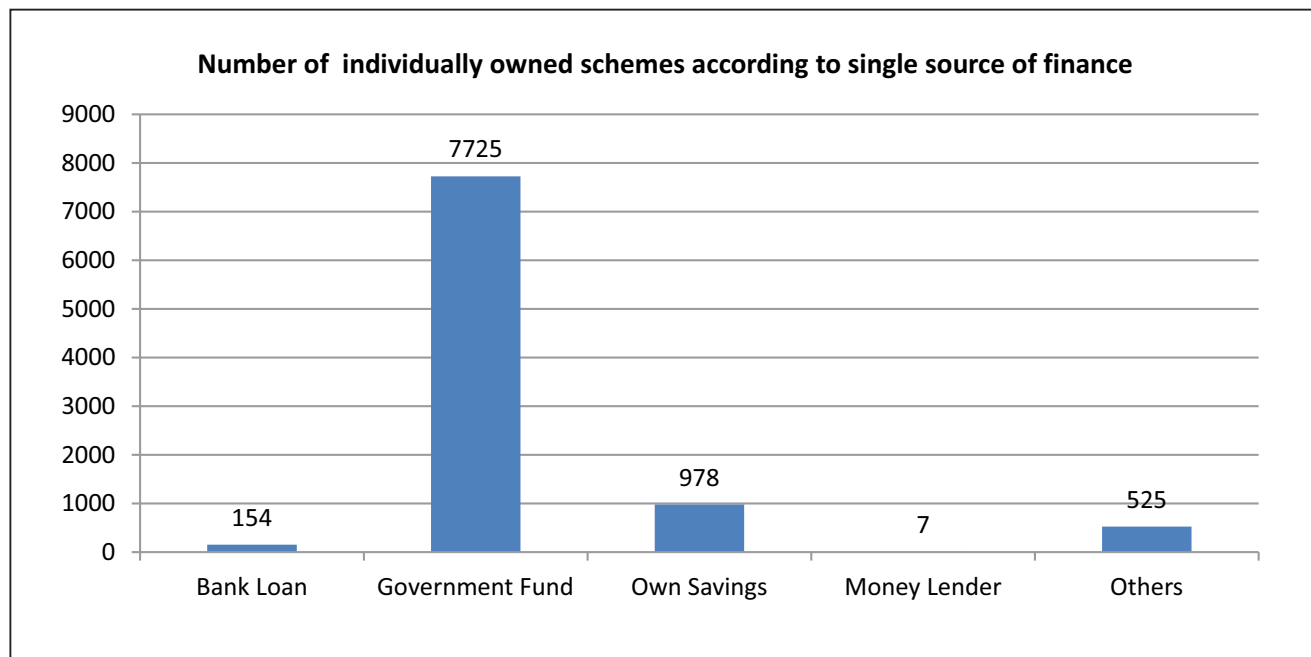


Out of the total 1,23,484 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 78.5 % (96,955) in MI schemes. Rest of the 21.5% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI Structures for irrigation purposes which will play crucial role in improving the livelihood of small and marginal farmers.



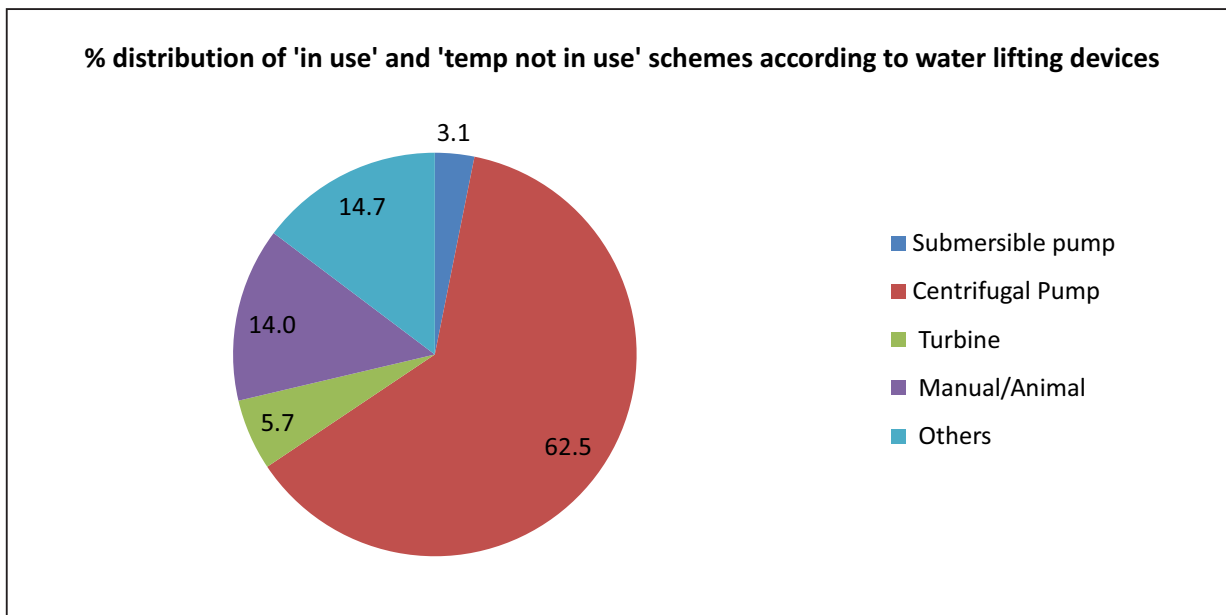
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 1,23,484 individually owned schemes, 7.6% (9,389) have single source of finance whereas 92.4% (1,14,095) have more than one source of finance. In these schemes with single source of finance (9,389), majority of schemes i.e. 82.3% (7,725) are being financed by Government Fund. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



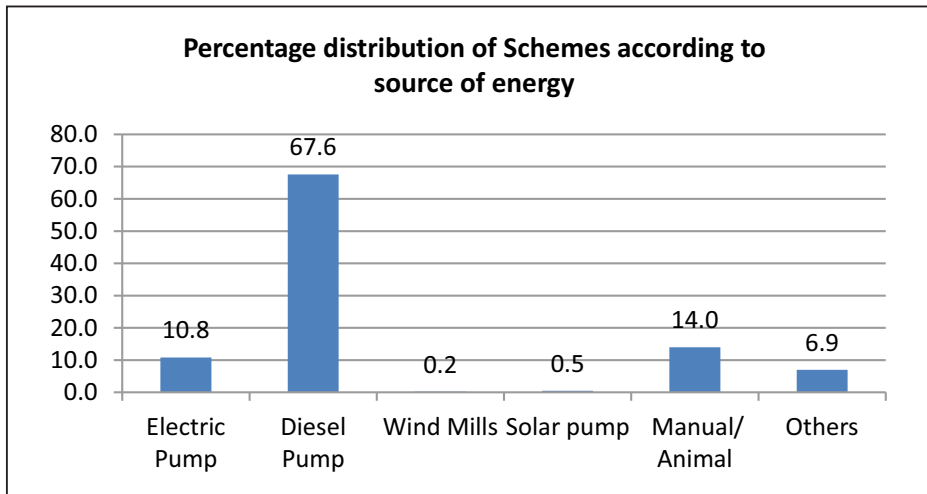
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 1,79,667, out of the total 2,52,663 MI schemes. Out of these (1,79,667) schemes, majority of schemes i.e 62.5% (1,12,208) have centrifugal pump and 3.1% (5,663) schemes have submersible pump as lifting device. 14.0 % (25,074) schemes are being operated manually or by animal for water lifting purposes, 5.7% (10,270) are operated by turbines and rest 14.7% (26,452) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



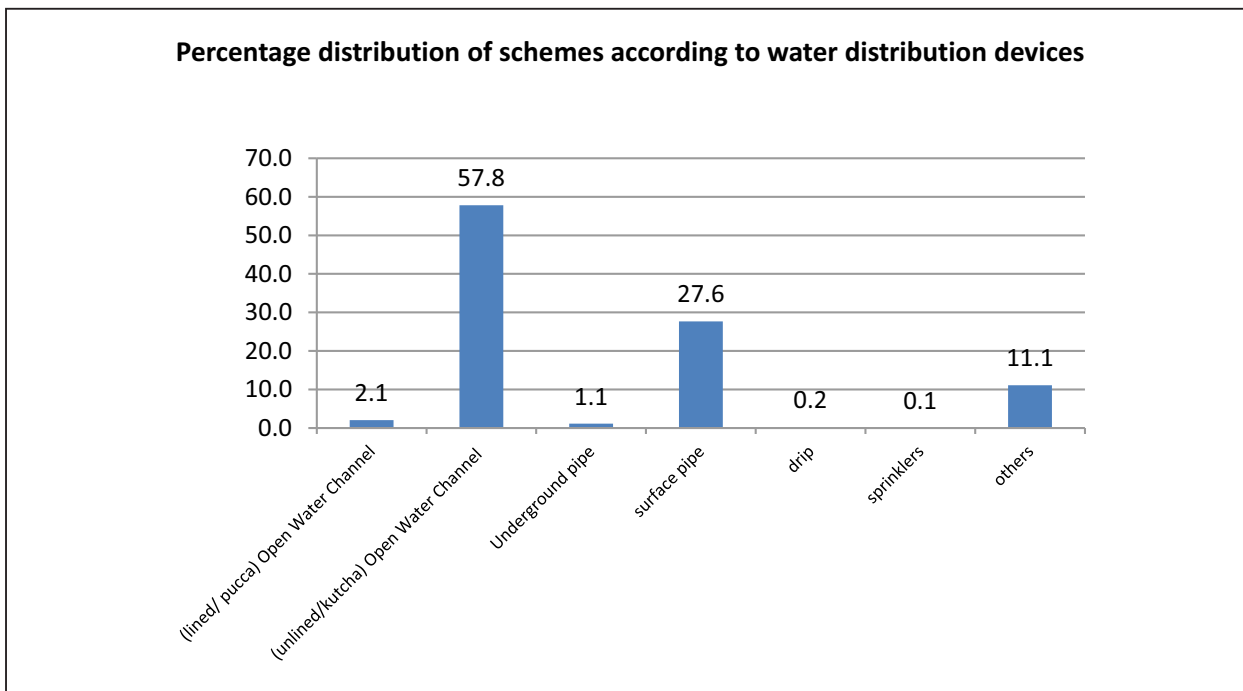
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 1,79,667. Out of these schemes, majority of schemes i.e 67.6% (1,21,390) schemes are using diesel pump as source of energy followed by manual/animal sources in 14.0% (25,074) schemes. In rest of the cases, 10.8% (19,432) schemes are using electric pump as source of energy followed by 0.5% (841) solar pump, 0.2% (420) wind mills and 6.9% (12,510) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



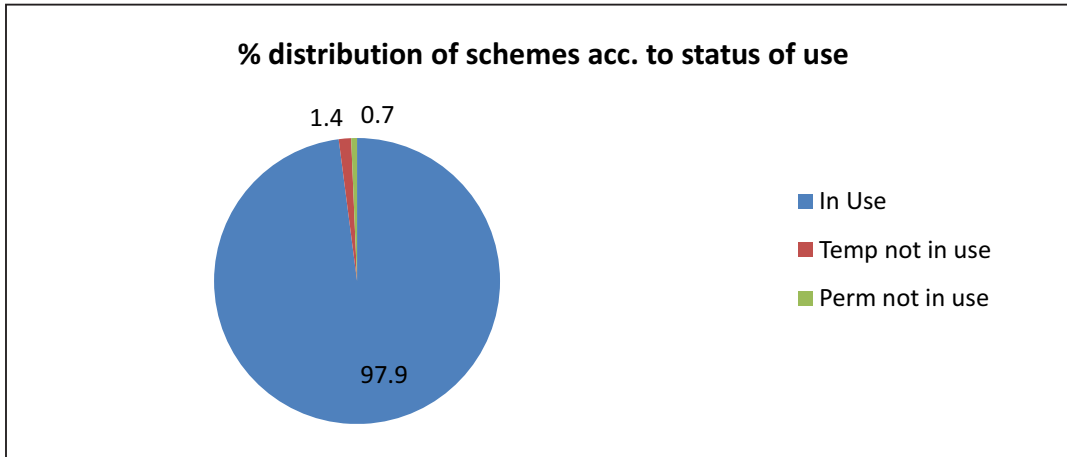
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 57.8% (1,43,021) followed by 27.6% (68,435) surface pipes and 11.1% (27,417) others. The water distribution devices used in the rest of the MI schemes are 2.1% (5,108) open water channel (lined/pucca), 1.1% underground pipes (2,830), 0.2% (398) drip and 0.1% (266) sprinklers. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

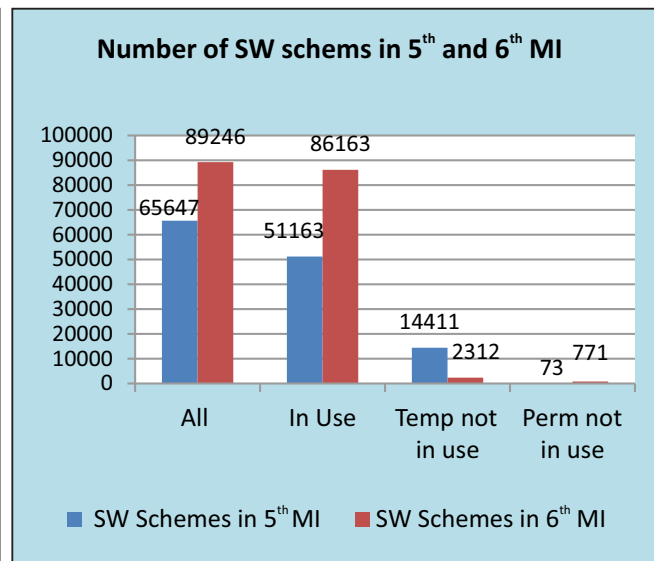
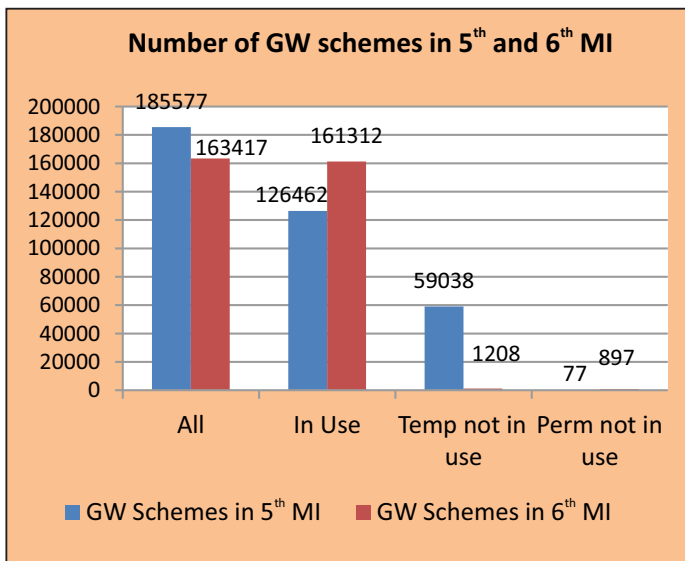


Status of MI schemes

Out of total number of 2,52,663 MI schemes, 97.9% (2,47,475) are 'in use', 1.4% (3,520) are 'temporarily not in use' and only 0.7 % (1,668) are 'permanently not in use' schemes which is depicted in the pie chart given below.

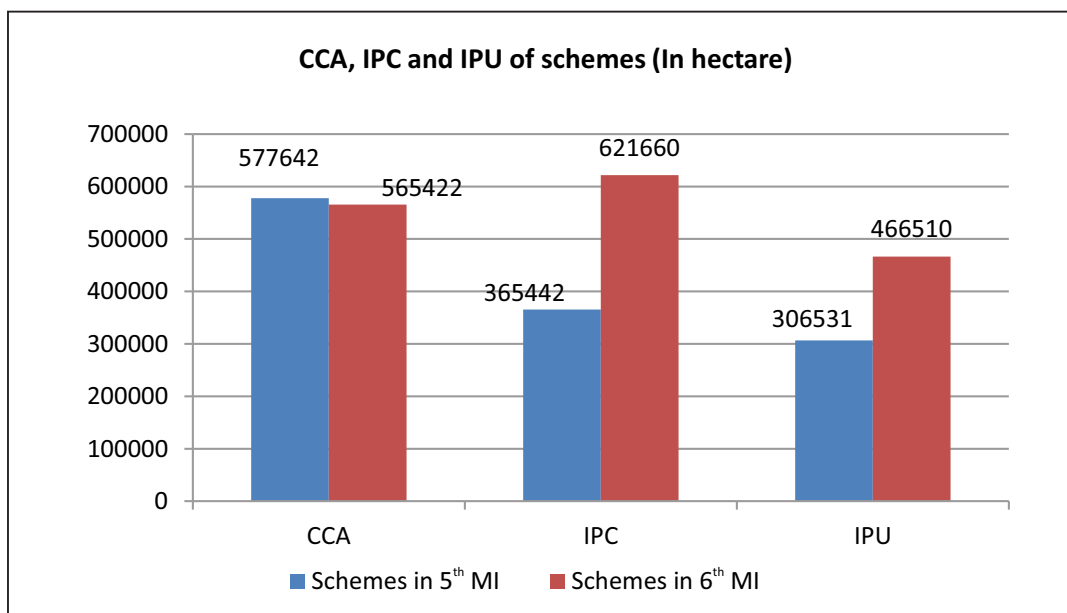


Out of 3,520 'temporarily not in use' schemes, 1,208 are GW schemes and 2,312 are SW schemes. Among 1,668 'permanently not in use' schemes, 897 are GW schemes and 771 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

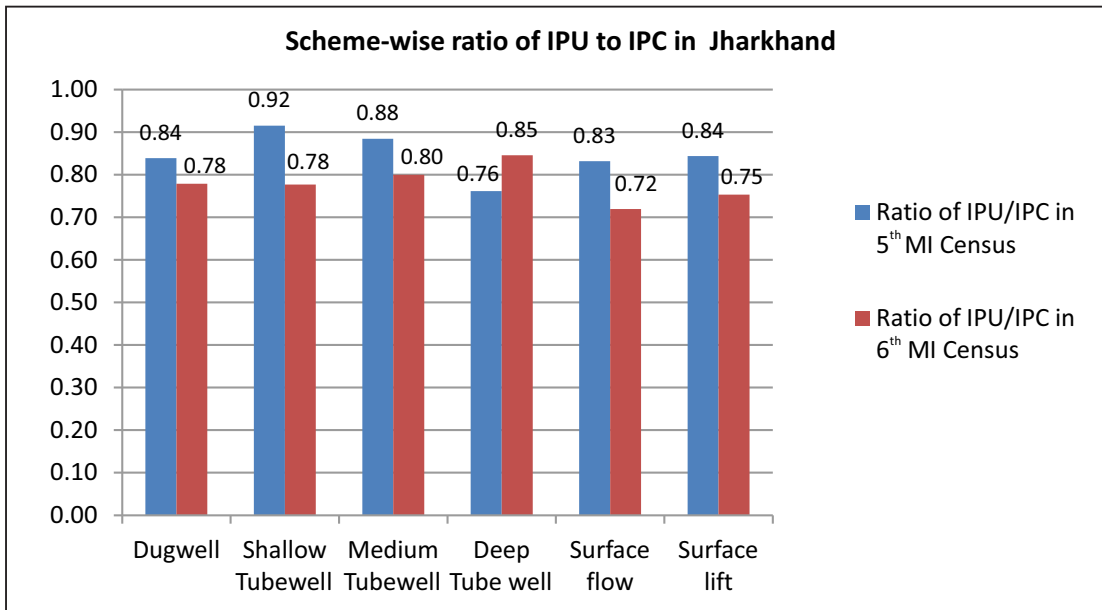
There has been increase of 70.1 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 3,65,442 hectares during 5th MI census to 6,21,660 hectares during 6th MI census. Irrigation potential utilized was 3,06,531 hectares during 5th MI Census in Jharkhand, which has also increased by 52.1% 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, 2,81,815 hectares irrigation potential is created through GW schemes and 3,39,846 hectares through SW schemes. Irrigation potential utilized is 2,19,630 and 2,46,880 for GW and SW schemes, respectively. This shows that 77.9 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 72.6 %. The scheme-wise ratio of IPU to IPC in Jharkhand is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Jharkhand			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	2,73,900	2,13,314.59	0.78
Shallow Tubewell	3,686.59	2,864.33	0.78
Medium Tubewell	2,725.43	2,180.15	0.80
Deep Tube well	1,502.86	1,270.93	0.85
Surface flow	2,67,717.83	1,92,559.09	0.72
Surface lift	72,127.72	54,320.98	0.75

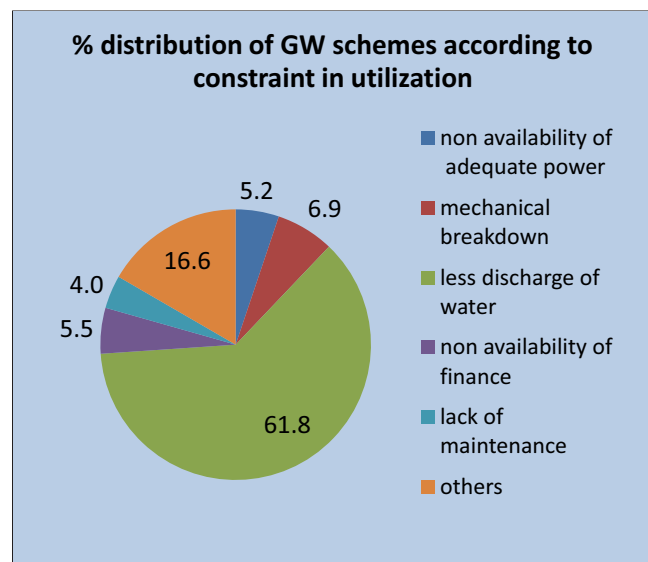
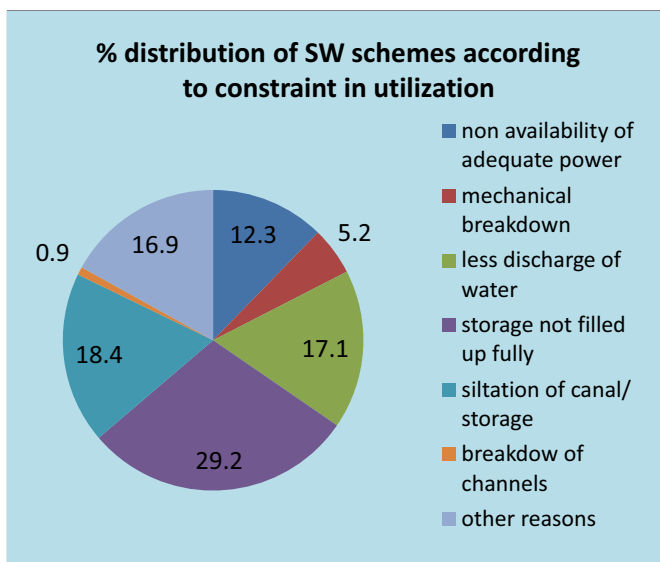
Dugwells have the highest IPC & IPU followed by surface flow schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 75% utilization of the potential created except surface flow scheme with a utilization of 72%. A comparative chart showing 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, 58,373 (23.6%) schemes out of 2,47,475 'in use' schemes in Jharkhand are under-utilised due to several reasons. Remaining 76.4% 'in use' MI schemes are functioning without any constraints.

Among 58,373 under-utilized schemes, 34,300 are GW schemes and 24,073 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' whereas SW schemes are under-utilized due to many reasons like storage not filled up fully, siltation of canal/storage, less discharge of water, non-availability of adequate power etc. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie chart given below.



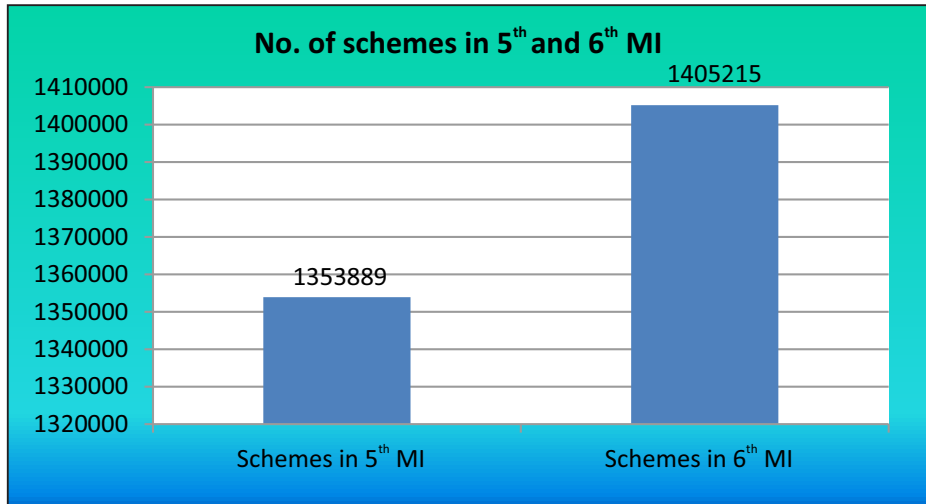
Key Parameters of 6 th MI Census-Jharkhand						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	1,60,077			63.36
	Shallow Tubewell	No.	1,611			0.64
	Medium Tubewell	No.	1,209			0.48
	Deep Tubewells	No.	520			0.21
	Ground Water schemes	No.	1,63,417			64.68
	Surface Flow	No.	71,961			28.48
	Surface Lift	No.	17,285			6.84
	Surface Water schemes	No.	89,246			35.32
	Total schemes	No.	2,52,663			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	2,53,299	3,12,123	5,65,422	
	IPC	Ha	2,81,815	3,39,846	6,21,660	
	IPU	Ha	2,19,630	2,46,880	4,66,510	
	IPC of in use schemes	Ha	2,80,116	3,31,131	6,11,247	
	IPU of in use schemes	Ha	2,18,561	2,42,515	4,61,076	
	% Ratio of IPU wrt IPC	%	77.93	72.64	75.04	
	Gap in IPC and IPU	Ha	62,185	92,966	1,55,150	
Ownership	Individual ownership	No.	92,943	30,541	1,23,484	48.87
	Group of Farmers	No.	5,197	12,593	17,790	7.04
	Public owned	No.	65,277	46,112	1,11,389	44.09
	Total	No.	1,63,417	89,246	2,52,663	100.00
Social Status of Individual Owner	SC	No.	10,242	2,668	12,910	10.45
	ST	No.	34,953	17,229	52,182	42.26
	OBC	No.	38,771	7,691	46,462	37.63
	Others	No.	8,977	2,953	11,930	9.66
	Total Individual	No.	92,943	30,541	1,23,484	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	2,806	2,302	5,108	2.06
	Open Water Channel (unlined/ kutcha)	No.	93,531	49,490	1,43,021	57.79
	Underground pipe	No.	1,981	849	2,830	1.14

Key Parameters of 6th MI Census-Jharkhand

Parameter	Unit	Value			%
Surface Pipe	No.	45,956	22,479	68,435	27.65
Drip	No.	273	125	398	0.16
Sprinklers	No.	204	62	266	0.11
Others	No.	16,561	10,856	27,417	11.08
Total	No.	1,61,312	86,163	2,47,475	100.00

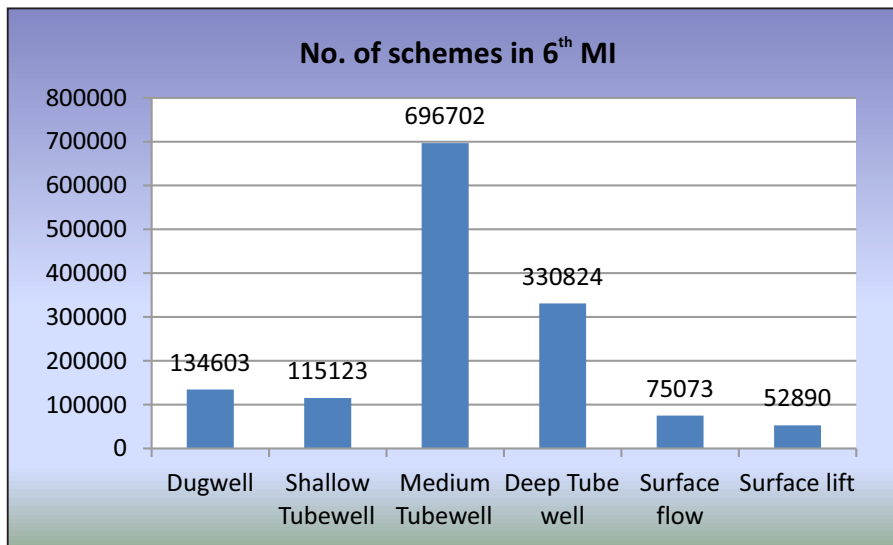
Karnataka

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Karnataka has 14,05,215 MI schemes comprising of 90.9% (12,77,252) Ground Water (GW) schemes and 9.1% (1,27,963) Surface Water (SW) schemes. There is an increase to the tune of 3.8% with 14,05,215 MI schemes in 6th MI census as compared to the 13,53,889 schemes in 5th MI census in the State of Karnataka.



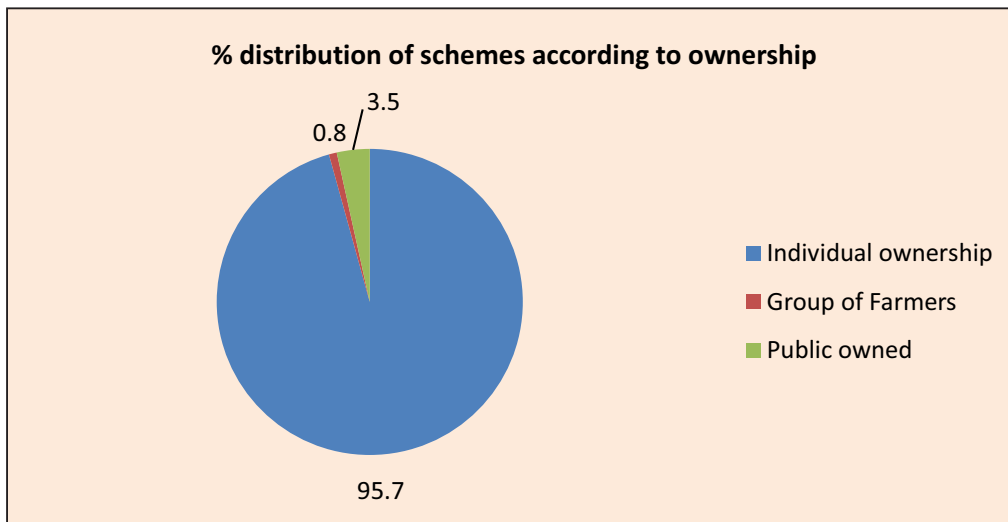
The State Government has reported an increase of 5.0% (61,252) in GW schemes and decline of 7.2 % (9,926) in SW schemes during 6th MI census as compared to the 12,16,000 GW schemes and 1,37,889 SW schemes recorded in 5th census.

Out of the 14,05,215 MI schemes reported in Karnataka, 49.6% (6,96,702) are medium tubewells followed by 23.5% (3,30,824) deep tube wells and 9.6% (1,34,603) dugwell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

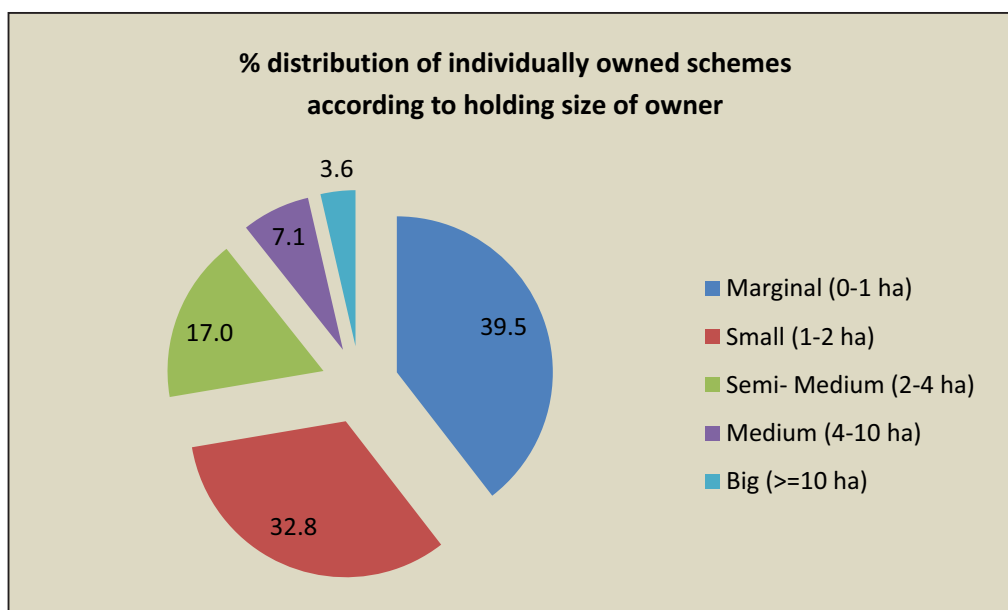


Ownership of MI schemes

Out of 14,05,215 MI schemes, majority of the schemes i.e. 95.7% (13,44,815) are under individual ownership, 3.5% (48,705) schemes are public owned and a small chunk of 0.8% (11,695) schemes are in the hands of group of farmers. Among 12,77,252 GW schemes, 98.1% (12,53,611) schemes are under individual ownership whereas among 1,27,963 SW schemes, 71.2% (91,204) are under individual ownership. The percentage distribution of MI schemes according to type of ownership is shown in the chart given below.

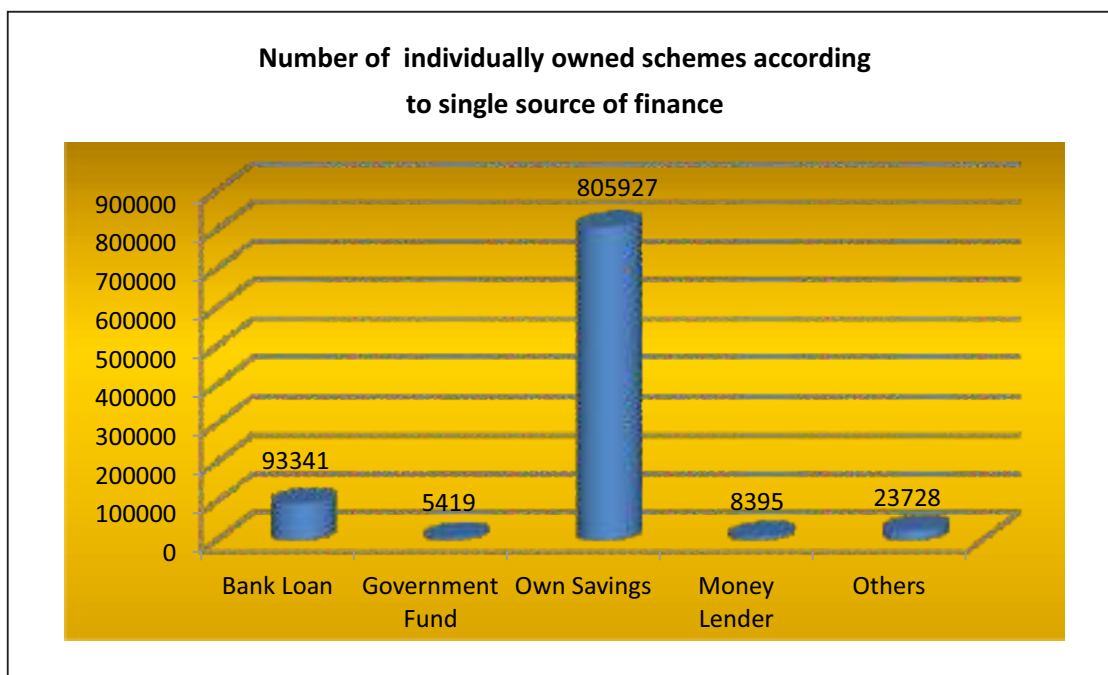


Out of 13,44,815 individually owned schemes, based on holding size of owner, 72.3% (9,72,721) of the MI schemes are owned by marginal and small farmers (having less than 2 hectare) whereas remaining 27.7% (3,72,094) schemes are owned by semi-medium, medium and big farmers (having more than 2 hectares) as depicted in the chart given below.



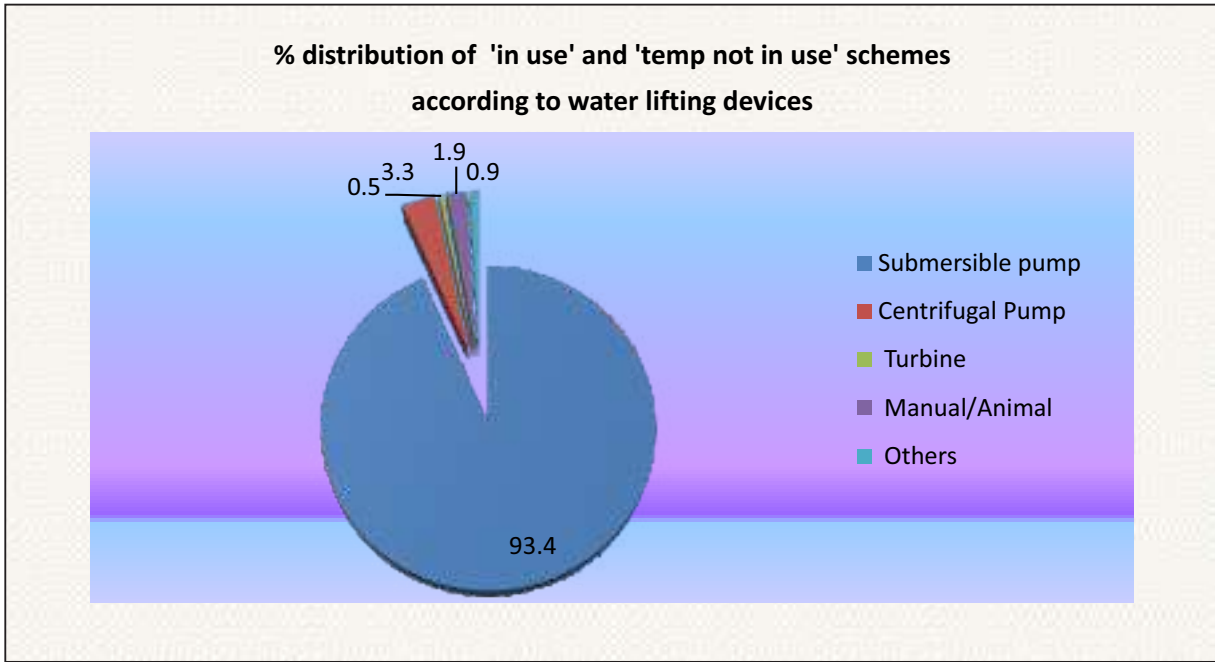
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 13,44,815 individually owned schemes, 69.7% (9,36,810) have single source of finance whereas 30.3% (4,08,005) have more than one source of finance. In these schemes with single source of finance (9,36,810) majority of schemes i.e. 86.0% (8,05,927) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 10.0% (93,341), money lenders 0.9% (8,395), Government fund 0.6% (5,419) and others 2.5% (23,728). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



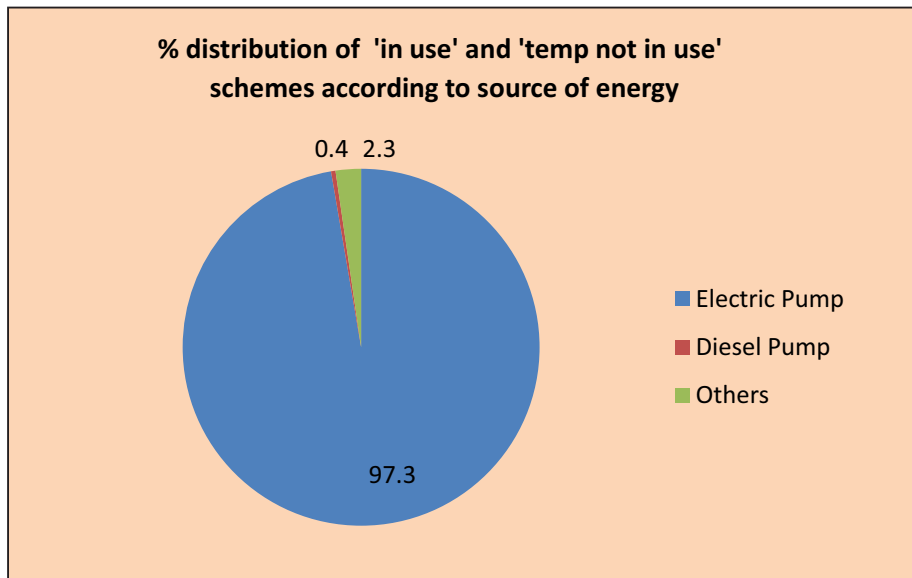
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 13,27,871 out of 14,05,215 MI schemes. Out of these (13,27,871) schemes, majority of schemes i.e. 93.4% (12,40,174) have submersible pump and 3.3% (43,835) schemes have centrifugal pump as lifting device whereas 1.9% (25,854) are operated using manual/animal lifting devices and 0.5% (6,232) schemes are operated by turbines. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



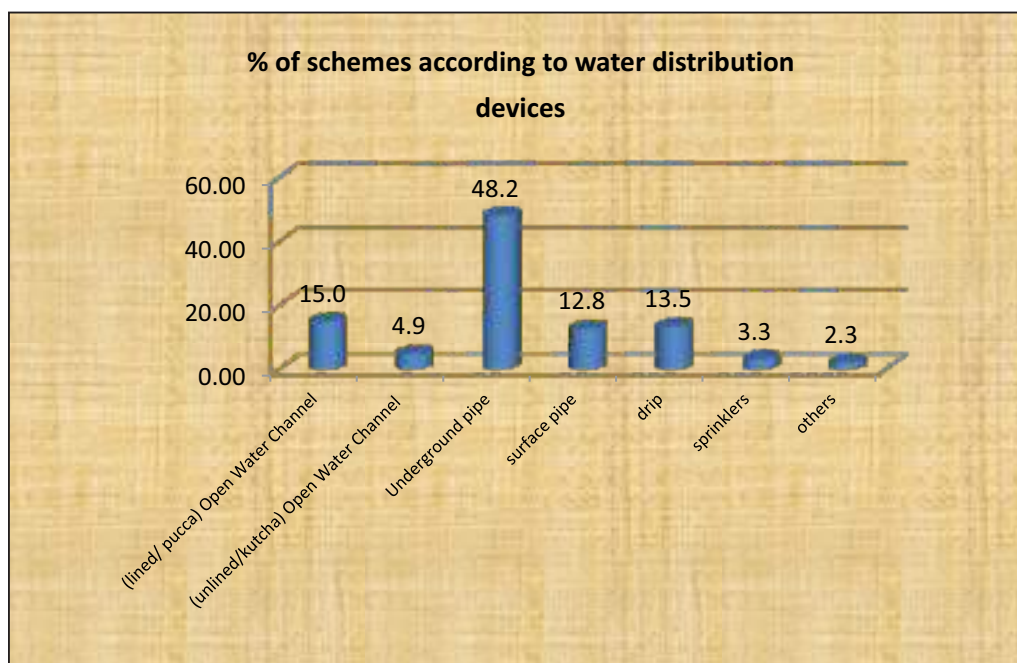
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 13,27,871. Out of these (13,27,871) schemes, majority of schemes i.e. 97.3% (12,92,117) schemes are using electricity as source of energy followed by diesel pump i.e. 0.4 % (5,874) schemes. While rest of the 2.3% (29,880) schemes are using other sources including manual/animal, solar pumps, wind mills etc. The percentage distribution of schemes according to source of energy is shown in the chart given below.



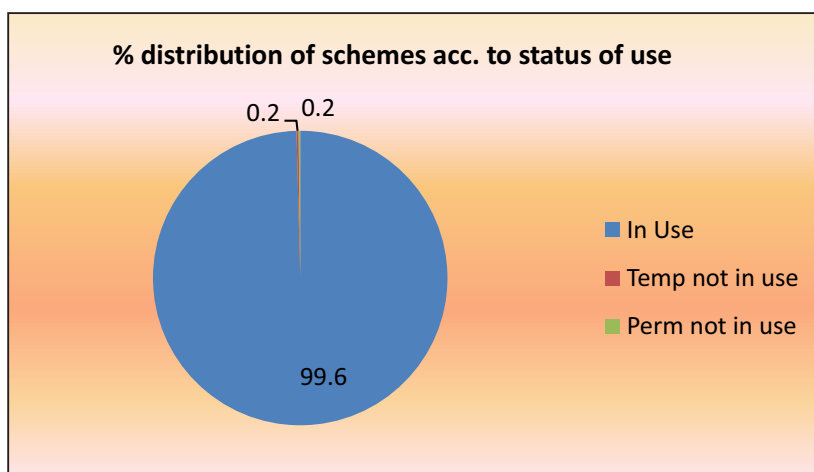
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through underground pipe is 48.2% (6,74,510) followed by 15.0% (2,10,386) open water channel (lined/pucca) and 13.5% (1,88,440) drip. The water distribution devices used in the rest of the MI schemes are 12.8% (1,79,442) surface pipe, 4.9% (69,100) open water channel (unlined/kutchra), 3.3% (45,897) sprinklers and 2.3% (31,771) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

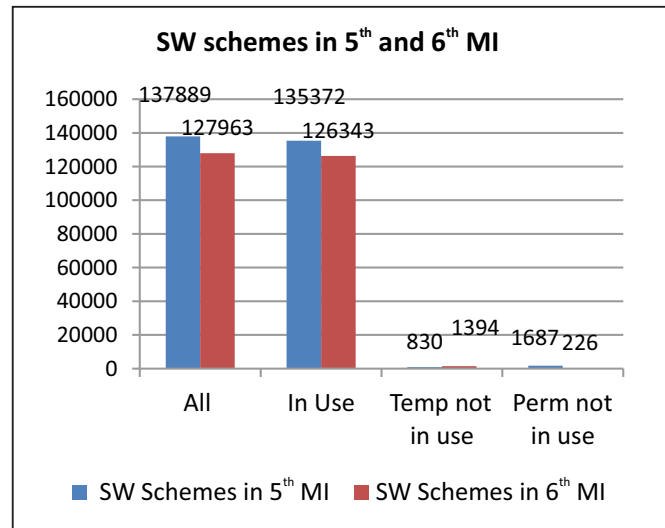
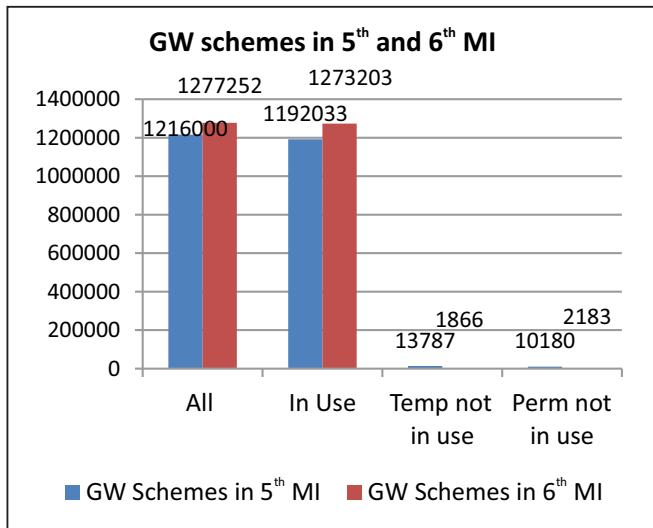


Status of MI schemes

Out of 14,05,215 MI schemes, 99.6% (13,99,546) are 'in use', 0.2% (3,260) are 'temporarily not in use' and 0.2% (2,409) are 'permanently not in use' schemes which is depicted in the pie chart given below.

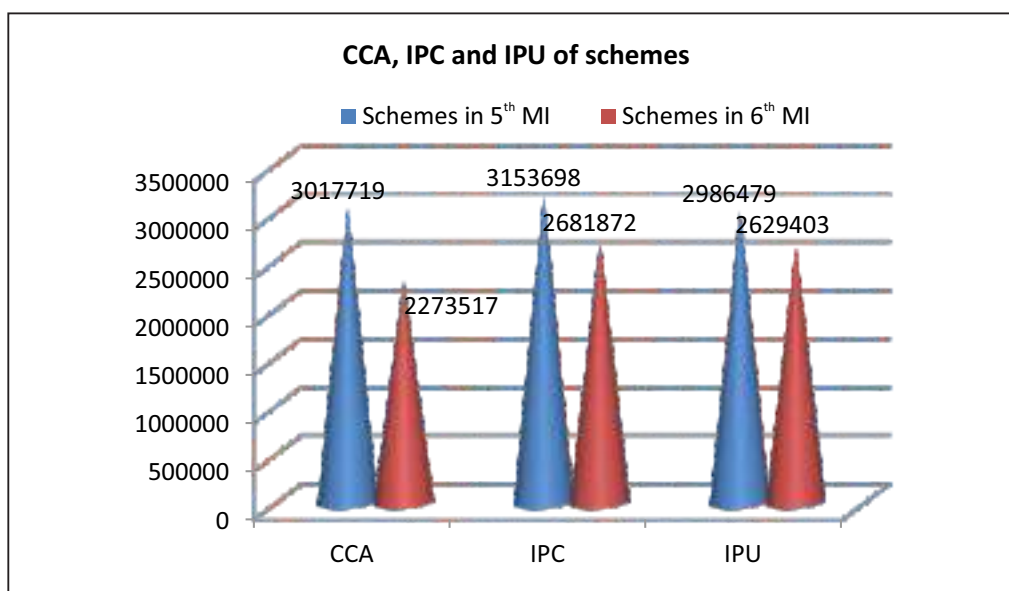


Out of 3,260 'temporarily not in use' schemes, 1,866 are GW schemes and 1,394 are SW schemes. Among 2,409 'permanently not in use' schemes, 2,183 are GW schemes and 226 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

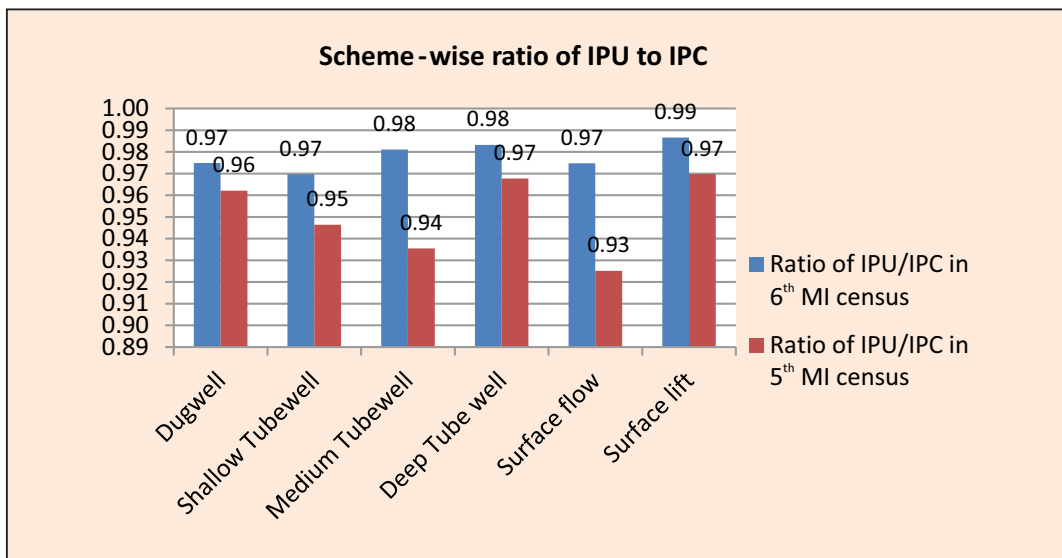
There has been a decline of 15.0% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has decreased from 31,53,698 hectares during 5th MI census to 26,81,872 hectares during 6th MI census. Irrigation potential utilized was 29,86,479 hectares during 5th MI Census in Karnataka, which has decreased by 12.0% 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, 23,90,204 hectares irrigation potential is created through GW schemes and 2,91,668 hectares through SW schemes. Irrigation potential utilized is 23,43,665 and 2,85,738 hectares for GW and SW schemes, respectively. This shows that 98.1% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 98.0%. The scheme-wise ratio of IPU to IPC in Karnataka is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Karnataka			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	1,84,707	1,80,070	0.97
Shallow Tubewell	1,76,820	1,71,467	0.97
Medium Tubewell	12,12,929	11,90,028	0.98
Deep Tubewell	8,15,749	8,02,100	0.98
Surface flow	1,71,022	1,66,703	0.97
Surface lift	1,20,646	1,19,035	0.99

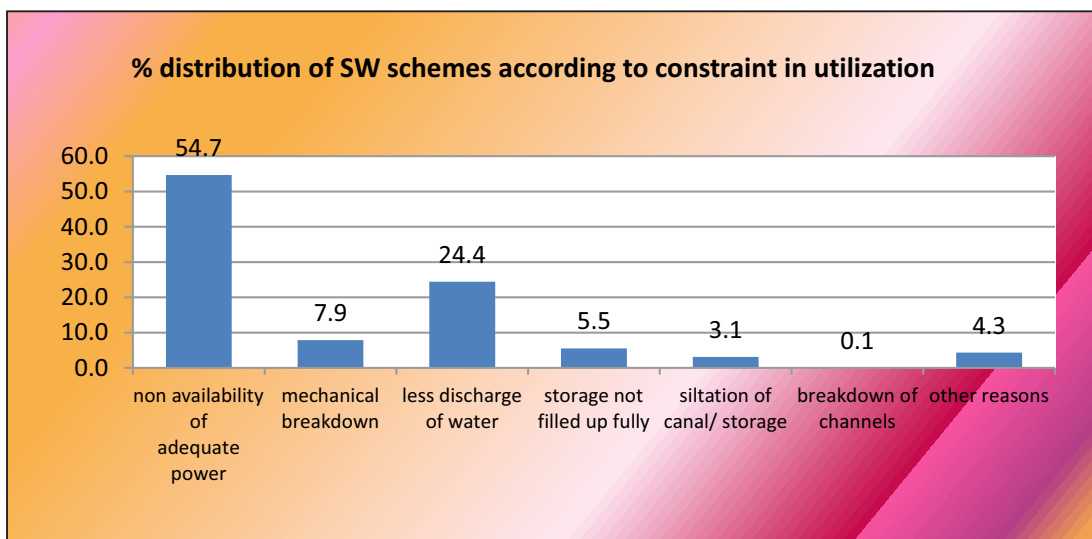
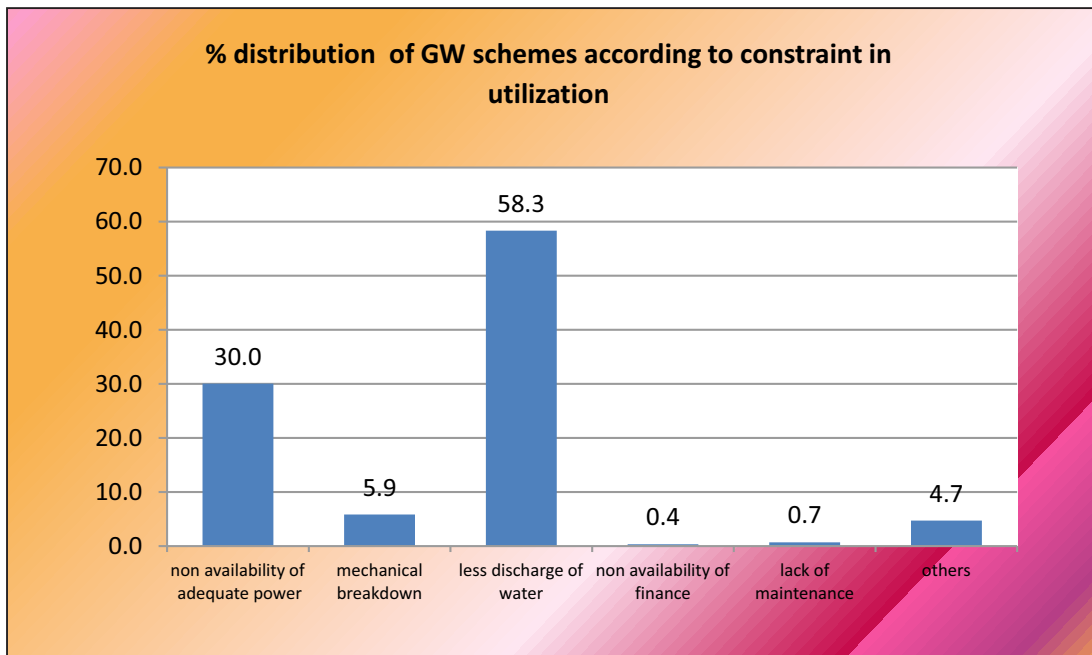
Medium tubewells have the highest IPC & IPU followed by deep tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 95% utilization of the potential created. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI 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, out of 13,99,546 'in use' schemes in Karnataka 85,892 (6.1%) schemes are under-utilised due to several reasons. Remaining 93.9% 'in use' MI schemes are functioning without any constraints.

Among 85,892 under-utilized schemes, 74,210 are GW schemes and 11,682 are SW schemes. The major factors contributing to constraints in utilization of GW as well as SW schemes are reported to be 'less discharge of water' and 'non availability of adequate power'. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.



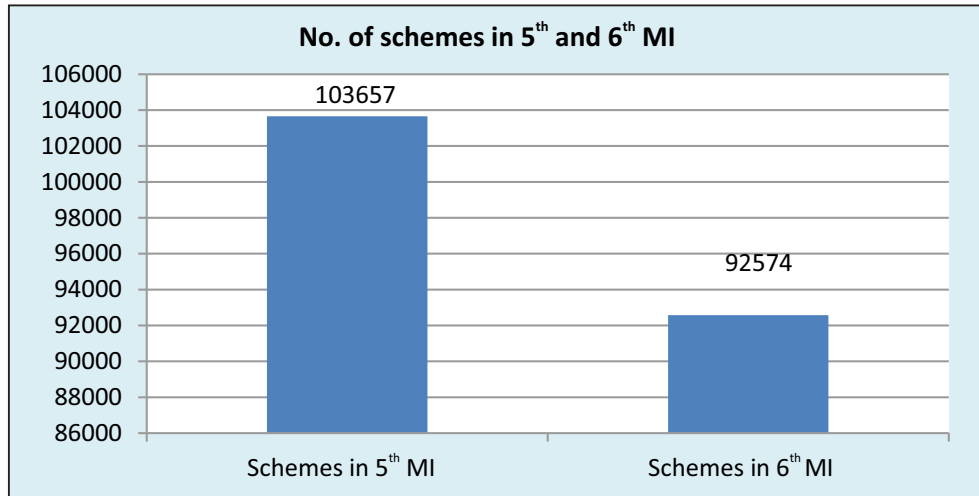
Key Parameters of 6 th MI Census-Karnataka						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	1,34,603			9.58
	Shallow Tubewell	No.	1,15,123			8.19
	Medium Tubewell	No.	6,96,702			49.58
	Deep Tubewells	No.	3,30,824			23.54
	Ground Water schemes	No.	12,77,252			90.89
	Surface Flow	No.	75,073			5.34
	Surface Lift	No.	52,890			3.76
	Surface Water schemes	No.	1,27,963			9.11
	Total schemes	No.	14,05,215			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	20,28,493	2,45,024	22,73,517	
	IPC	Ha	23,90,204	2,91,668	26,81,872	
	IPU	Ha	23,43,665	2,85,738	26,29,403	
	IPC of in use schemes	Ha	23,86,502	2,88,174	26,74,676	
	IPU of in use schemes	Ha	23,41,514	2,83,700	26,25,215	
	% Ratio of IPU wrt IPC	%	98.05	97.97	98.04	
	Gap in IPC and IPU	Ha	46,540	5,930	52,469	
Ownership	Individual ownership	No.	12,53,611	91,204	13,44,815	95.70
	Group of Farmers	No.	8,592	3,103	11,695	0.83
	Public owned	No.	15,049	33,656	48,705	3.47
	Total	No.	12,77,252	1,27,963	14,05,215	100.00
Social Status of Individual Owner	SC	No.	1,74,110	6,790	1,80,900	13.45
	ST	No.	55,212	3,175	58,387	4.34
	OBC	No.	3,80,247	27,982	4,08,229	30.36
	Others	No.	6,44,042	53,257	6,97,299	51.85
	Total Individual	No.	12,53,611	91,204	13,44,815	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	1,85,004	25,382	2,10,386	15.03
	Open Water Channel (unlined/ kutcha)	No.	58,556	10,544	69,100	4.94

Key Parameters of 6th MI Census-Karnataka

Parameter	Unit	Value			%
Underground pipe	No.	6,14,628	59,882	6,74,510	48.19
Surface Pipe	No.	1,67,939	11,503	1,79,442	12.82
Drip	No.	1,85,306	3,134	1,88,440	13.46
Sprinklers	No.	41,478	4,419	45,897	3.28
Others	No.	20,292	11,479	31,771	2.27
Total	No.	12,73,203	1,26,343	13,99,546	100.00

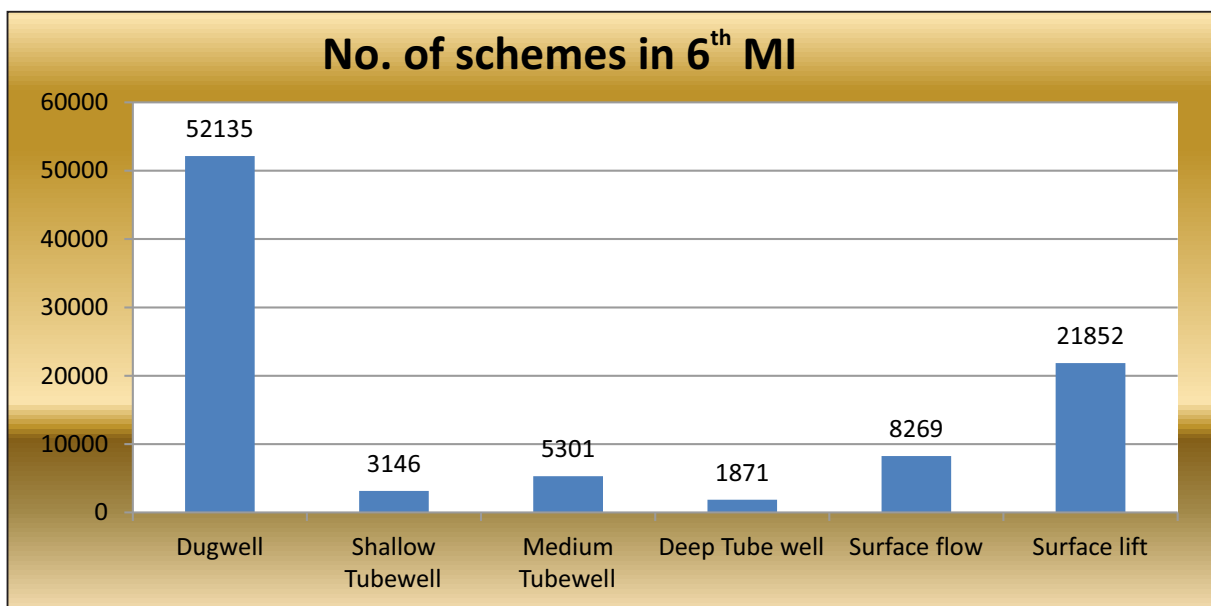
KERALA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Kerala has 92,574 MI schemes comprising of 67.5% (62,453) Ground Water (GW) schemes and 32.5% (30,121) Surface Water (SW) schemes. There has been decrease to the tune of 10.7% with 92,574 schemes in 6th MI census as compared to the 1,03,657 schemes in 5th MI census in the State of Kerala.



The State has reported a decline of 24.3% (20,015) in GW schemes and growth of 42.2% (8,932) in SW schemes during 6th MI census as compared to the 82,468 GW schemes and 21,189 SW schemes recorded in 5th census.

Out of the 92,574 MI schemes reported in the State of Kerala, 56.32% (52,135) are dugwell schemes followed by 23.6% (21,852) surface lift, 8.93% (8,269) surface flow, 5.73% (5,301) medium tubewell, 3.4% (3,146) shallow tubewell and 2.02% (1,871) deep tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

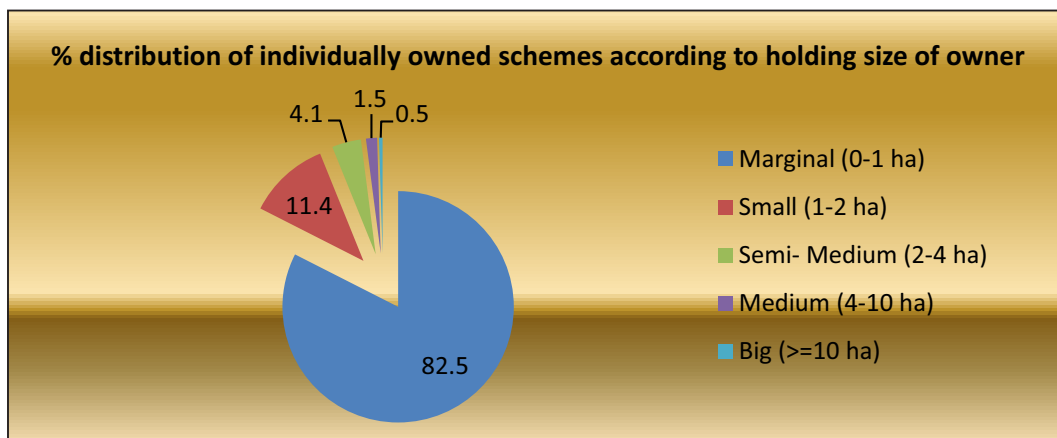


Ownership of MI schemes

Out of 92,574 MI schemes, majority of the schemes i.e. 86.4% (80,011) are under individual ownership, 8.8% (8,153) schemes are public owned and 4.8% (4,410) schemes are with group of farmers. Among 62,453 GW schemes, 95.8% (59,799) schemes are under individual ownership and among 30,121 SW schemes, 67.1% (20,212) are owned by individual farmers. Most of MI structures in Kerala are owned by individual farmers/public which is also shown in the figure given below.

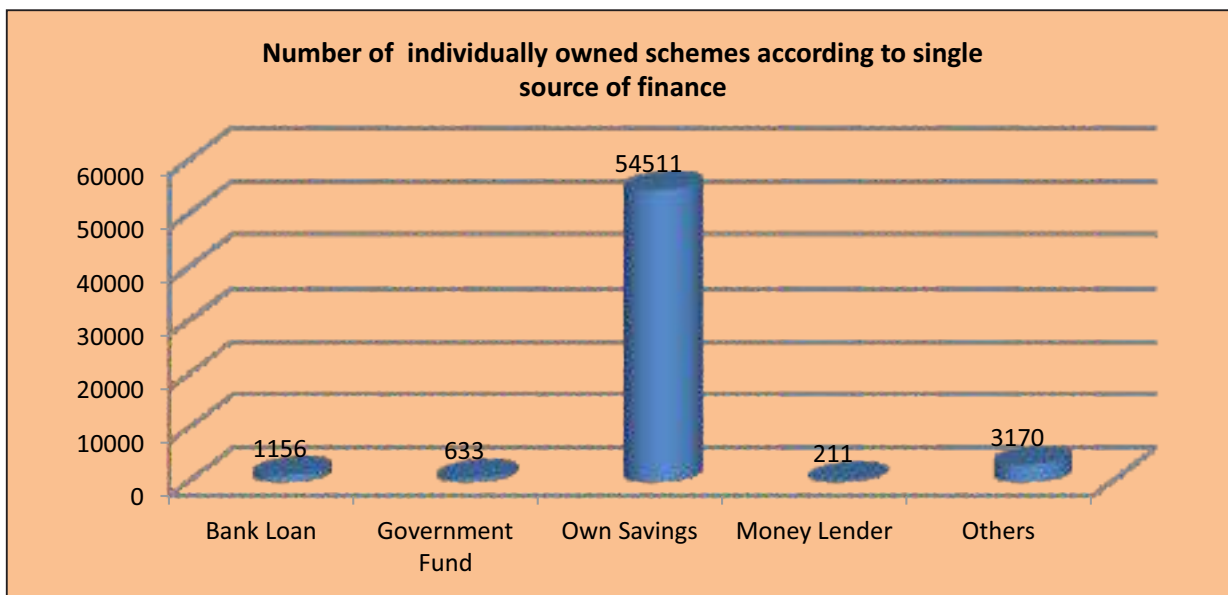


Out of 80,011 individually owned schemes, based on holding size of owner, marginal farmers own a major share of 82.5% (65,995) in MI schemes. Rest of the 17.5% schemes are owned by small farmers, semi-medium, medium and big farmers which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of marginal farmers.



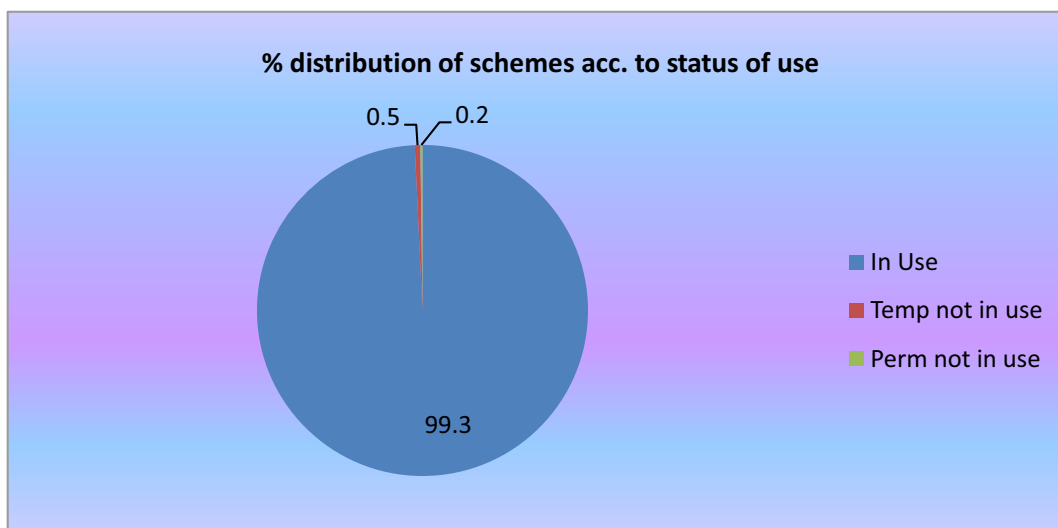
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 80,011 individually owned schemes, 74.6% (59,681) have single source of finance whereas 25.4% (20,330) have more than one source of finance. In these schemes with single source of finance (59,681), majority of schemes i.e. 91.3% (54,511) are being financed by own savings of individual farmer. Other reported sources of finance are Bank Loan 1.9% (1,156), Government fund 1.1% (633), money lender 0.4% (211) and others 5.3% (3,170). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.

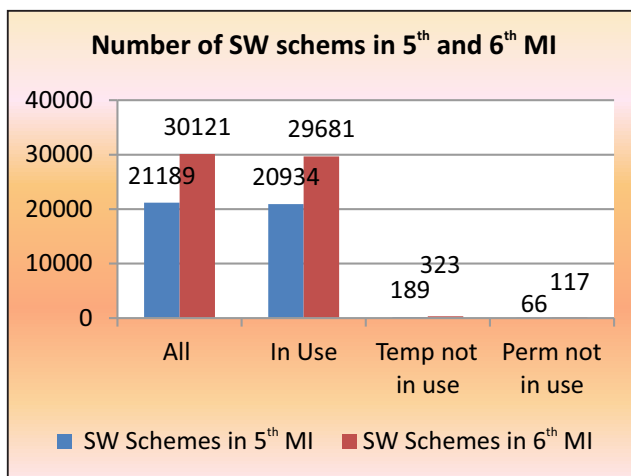
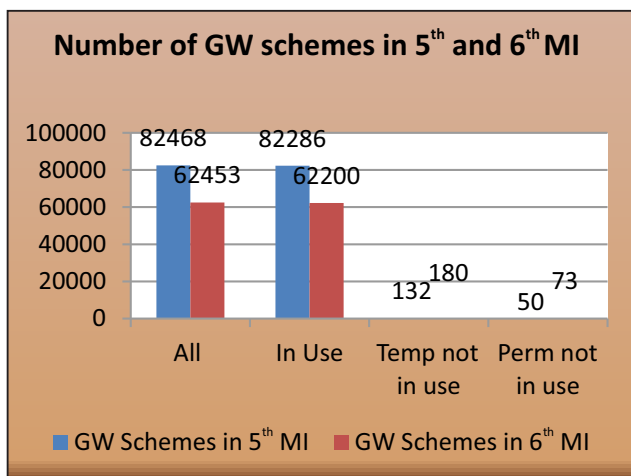


Status of MI schemes

Out of total number of 92,574 MI schemes, 99.3% (91,881) are 'in use', 0.5% (503) are 'temporarily not in use' and only 0.2% (190) are 'permanently not in use' schemes which is depicted in the pie chart given below.

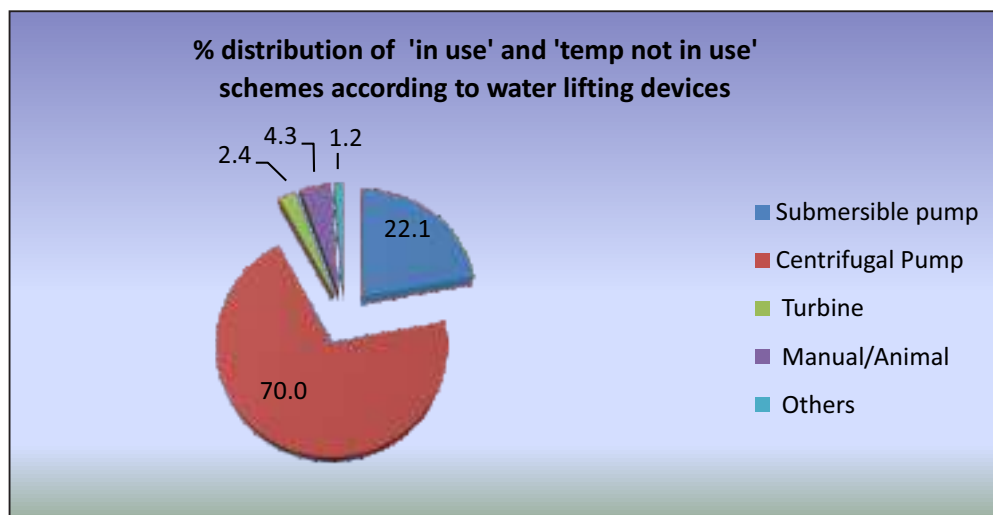


Out of 503 'temporarily not in use' schemes, 180 are GW schemes and 323 are SW schemes. Among 190 'permanently not in use' schemes, 73 are GW schemes and 117 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



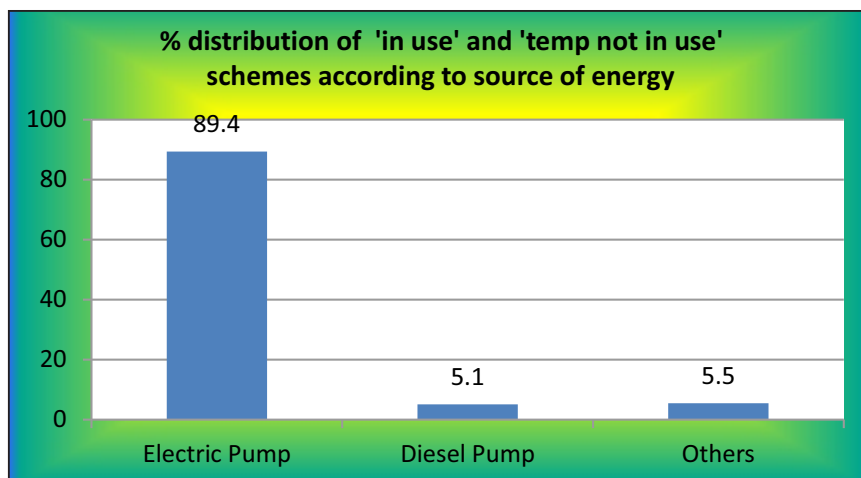
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 84,168, out of the total 92,574 MI schemes. Out of these (84,168) schemes, majority of schemes i.e 70.0% (58,921) have centrifugal pump, 22.1% (18,557) are operated with submersible pump, 4.3% (3,647) with manual or animal lifting devices, 2.4% (2,057) schemes have turbines as lifting devices and rest 1.2% (986) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



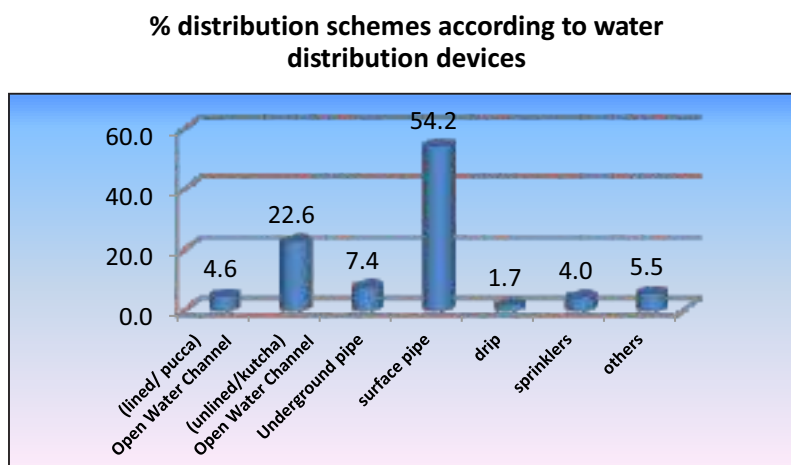
Distribution of source of energy

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 84,168. Out of these (84,168) schemes, majority of schemes i.e 89.4% (75,211) schemes are using electric pump as source of energy followed by diesel pump in 5.1% (4,263) schemes whereas remaining 5.5% (4,694) use energy generated through manual/animal sources, wind mills, solar pump and other devices. The percentage distribution of schemes according to source of energy is shown in the chart given below.



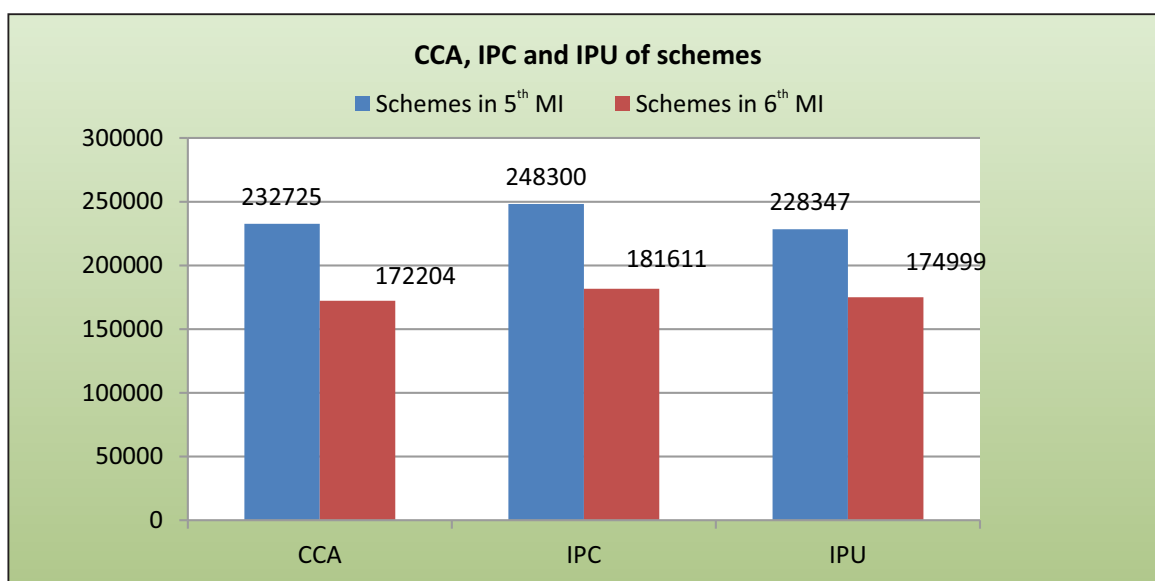
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 22.6% (20,815) followed by 7.4% (6,848) through underground pipe and 4.6% (4,241) through open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are 54.2% (49,755) surface pipes, 5.5% (5,051) others, 4.0% (3,639) sprinklers and 1.7% (1,532) drip. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



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

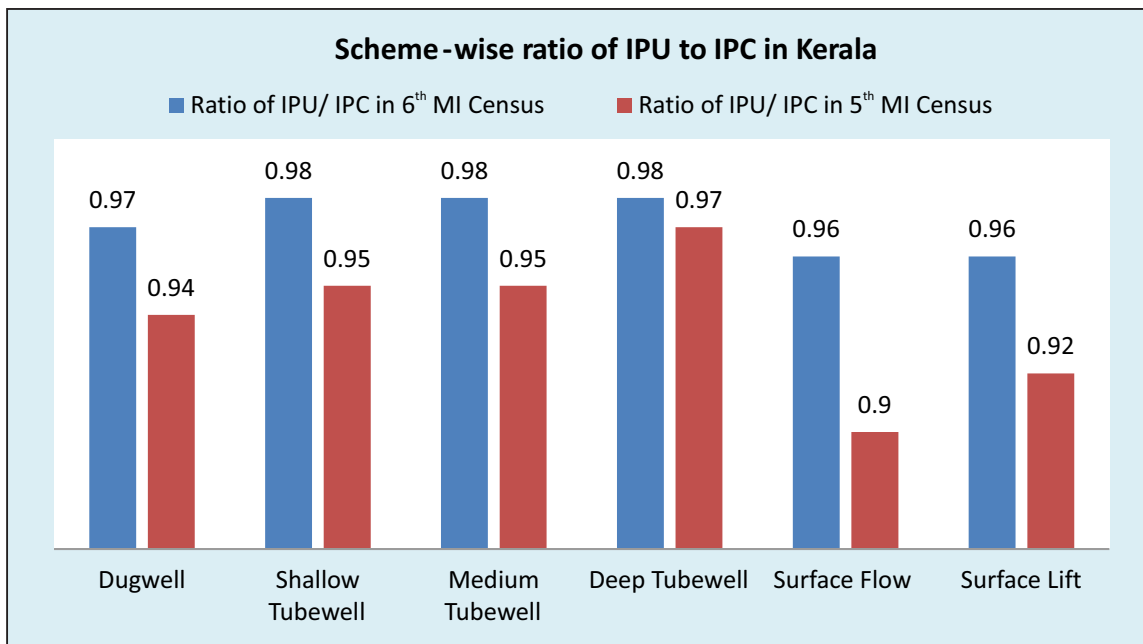
There has been a decrease of 26.9% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is decreased from 2,48,300 hectares during 5th MI census to 1,81,611 hectares during 6th MI census. Irrigation potential utilized was 2,28,347 hectares during 5th MI Census in Kerala, which has decreased by 23.4% 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, 35,346 hectares irrigation potential is created through GW schemes and 1,46,265 hectares through SW schemes. Irrigation potential utilized is 34,449 hectares and 1,40,550 hectares for GW and SW schemes respectively. This shows that 97.5 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 96.1%. The scheme-wise ratio of IPU to IPC in Kerala is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Kerala			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	27,711	26,929	0.97
Shallow Tubewell	1,313	1,294	0.98
Medium Tubewell	4,143	4,086	0.98
Deep Tubewell	2,179	2,141	0.98
Surface flow	79,499	76,379	0.96
Surface lift	66,766	64,171	0.96

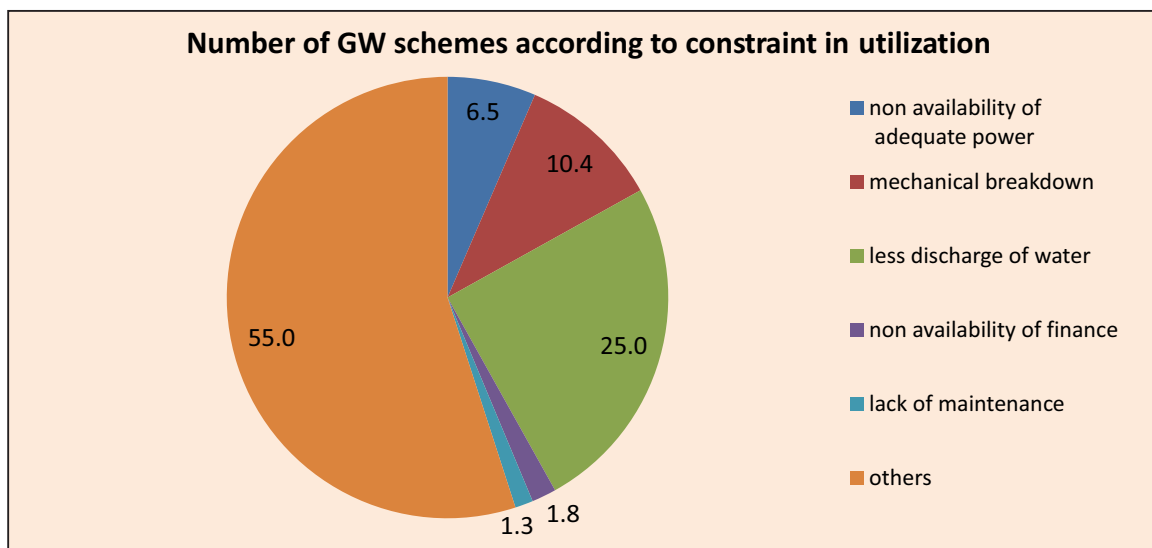
Surface flow have the highest IPC & IPU followed by surface lift schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 95% utilization of the potential created. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.



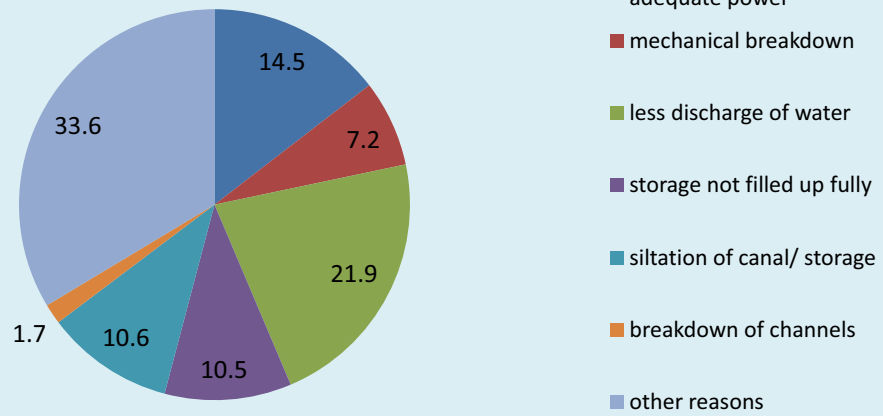
Underutilization of In Use schemes

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, 1,672 (1.8%) schemes out of 91,881 'in use' schemes in Kerala are under-utilized due to several reasons. Remaining 98.2% 'in use' MI schemes are functioning without any constraints.

Among 1,672 under-utilized schemes, 833 are GW schemes and 839 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



Number of SW schemes according to constraint in utilization



Key Parameters of 6th MI Census-Kerala

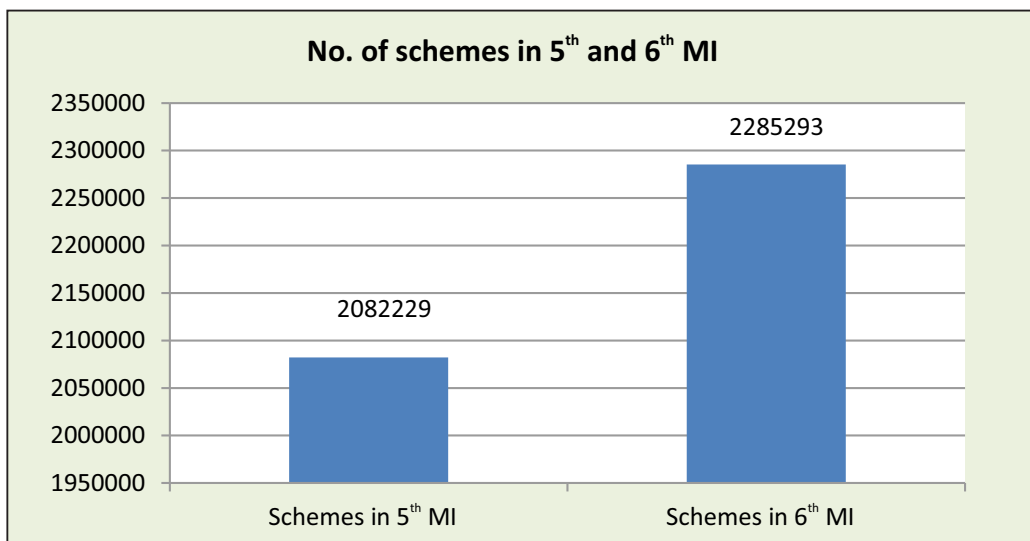
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	52,135			56.32
	Shallow Tubewell	No.	3,146			3.40
	Medium Tubewell	No.	5,301			5.73
	Deep Tubewells	No.	1,871			2.02
	Ground Water Schemes	No.	62,453			67.46
	Surface Flow	No.	8,269			8.93
	Surface Lift	No.	21,852			23.60
	Surface Water Schemes	No.	30,121			32.54
	Total Schemes	No.	92,574			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	33,883	1,38,320	1,72,203	
	IPC	Ha	35,346	1,46,265	1,81,611	
	IPU	Ha	34,449	1,40,550	1,74,999	
	IPC of in use schemes	Ha	35,189	1,44,584	1,79,773	
	IPU of in use schemes	Ha	34,321	1,39,241	1,73,562	
	% Ratio of IPU wrt IPC	%	97.46	96.09	96.36	
	Gap in IPC and IPU	Ha	897	5,715	6,612	

Key Parameters of 6th MI Census-Kerala

Parameter		Unit	Value			%
Ownership	Individual ownership	No.	59,799	20,212	80,011	86.43
	Group of Farmers	No.	928	3,482	4,410	4.76
	Public owned	No.	1,726	6,427	8,153	8.81
	Total	No.	62,453	30,121	92,574	100.00
Social Status of Individual Owner	SC	No.	1,258	446	1,704	2.13
	ST	No.	352	212	564	0.70
	OBC	No.	26,347	7,262	33,609	42.01
	Others	No.	31,842	12,292	44,134	55.16
	Total Individual	No.	59,799	20,212	80,011	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	2,146	2,095	4,241	4.62
	Open Water Channel (unlined/kutchra)	No.	12,222	8,593	20,815	22.65
	Underground pipe	No.	5,613	1,235	6,848	7.45
	Surface Pipe	No.	36,553	13,202	49,755	54.15
	Drip	No.	1,271	261	1,532	1.67
	Sprinklers	No.	2,091	1,548	3,639	3.96
	Others	No.	2,304	2,747	5,051	5.50
	Total	No.	62,200	29,681	91,881	100.00

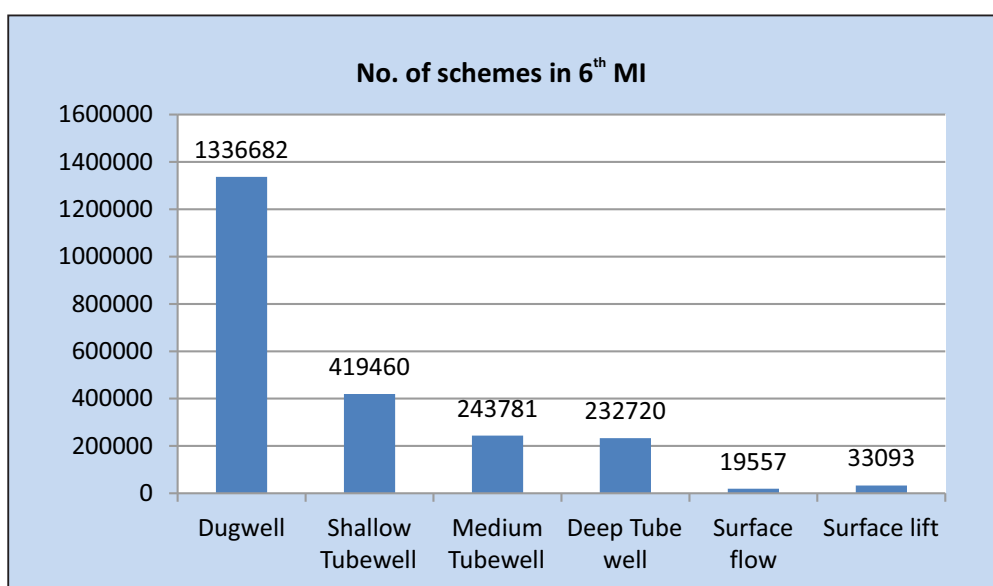
MADHYA PRADESH

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Madhya Pradesh has 22,85,293 MI schemes comprising of 97.7% (22,32,643) Ground Water (GW) schemes and 2.3% (52,650) Surface Water (SW) schemes. There is an increase to the tune of 9.8% in 6th MI census as compared to the 20,82,229 schemes in 5th MI census in the State of Madhya Pradesh.



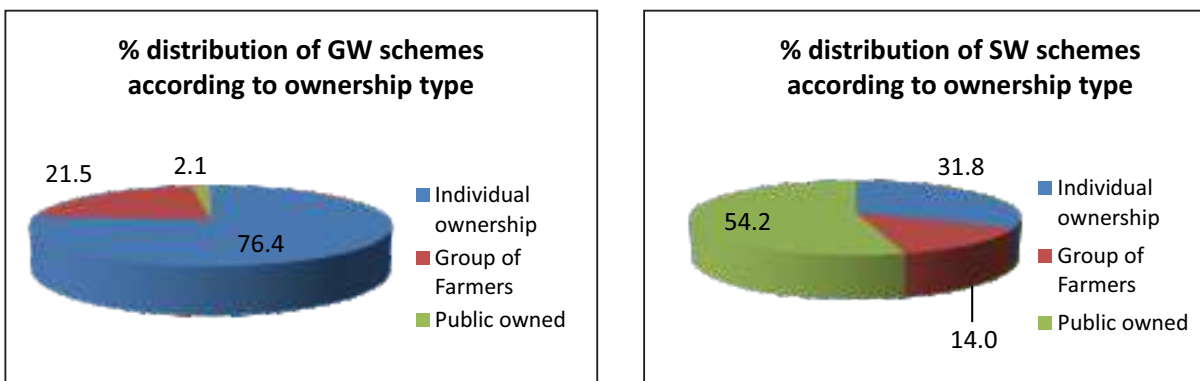
The State Government has reported increase of 13.7% (2,69,605) in GW schemes and decrease of 55.8% (66,541) in SW schemes during 6th MI census as compared to the 19,63,038 GW schemes and 1,19,191 SW schemes recorded in 5th census.

Out of the 22,85,293 MI schemes reported in Madhya Pradesh, 58.5% (13,36,682) are dugwells followed by 18.4% (4,19,460) shallow tubewell and 10.7% (2,43,781) medium tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

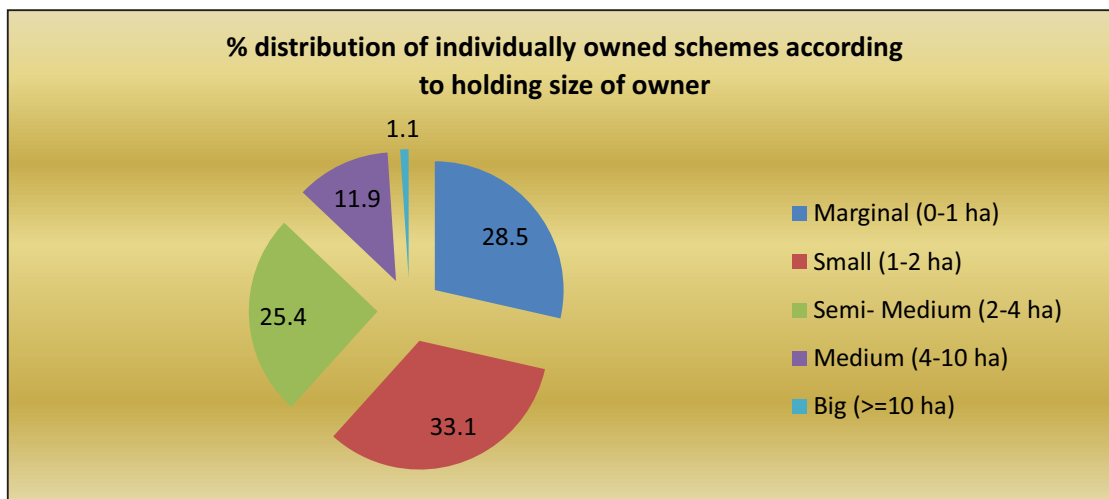


Ownership of MI schemes

Out of 22,85,293 MI schemes, majority of the schemes i.e. 75.3% (17,21,962) are under individual ownership, 21.4% (4,88,099) schemes are owned by group of farmers and a small chunk of 3.3% (75,232) schemes are public owned. Among 22,32,643 GW schemes, 76.4% (17,05,206) schemes are individually owned whereas among 52,650 SW schemes, 31.8% (16,756) are owned by individual farmers as shown in the figures given below.



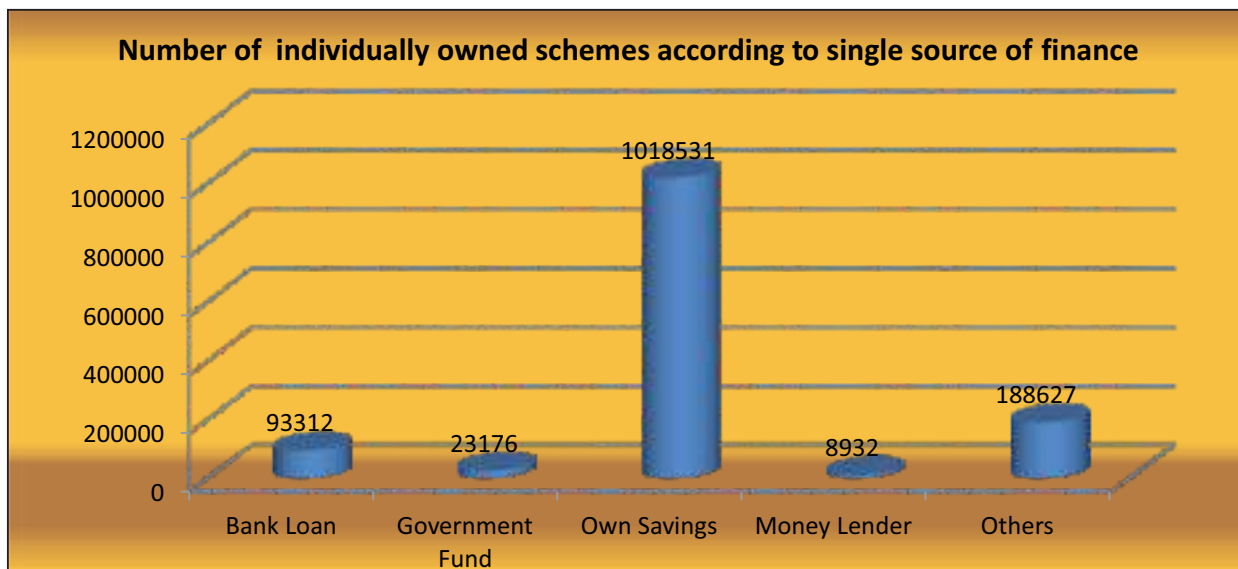
Out of 17,21,962 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 61.6 % (10,62,024) in MI schemes. Rest of the 38.4% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below.



Financing of MI schemes

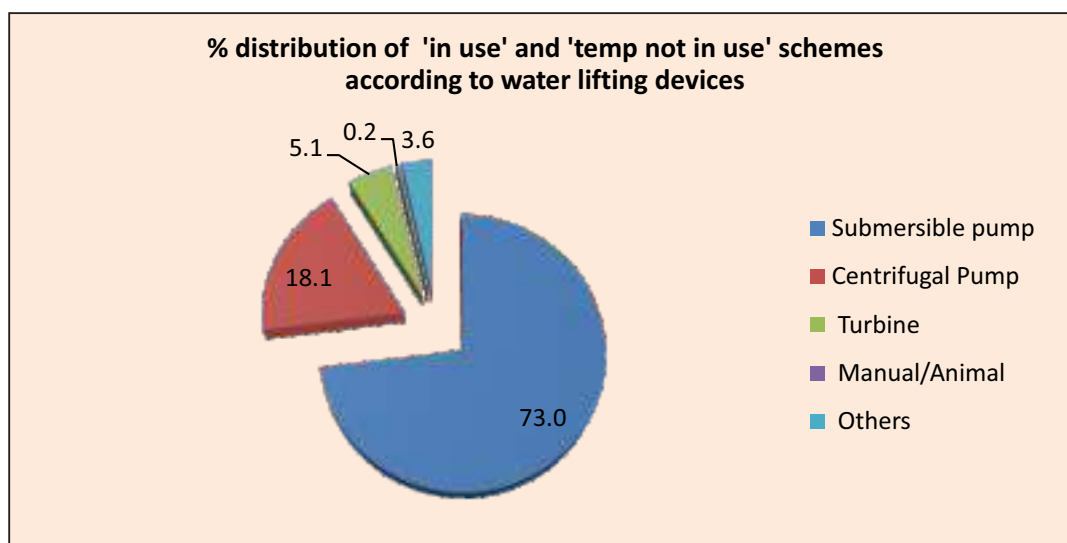
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 17,21,962 individually owned schemes, 77.4% (13,32,578) have single source of finance whereas 22.6% (3,89,384) have more than one source of finance. In these schemes with single source of finance (13,32,578), majority of schemes i.e. 76.4% (10,18,531) are being financed by own savings of individual

farmer. Other reported sources of finance are bank loan 7% (93,312), Government fund 1.7% (23,176), money lenders 0.7% (8,932) and other sources 14.2% (1,88,627). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



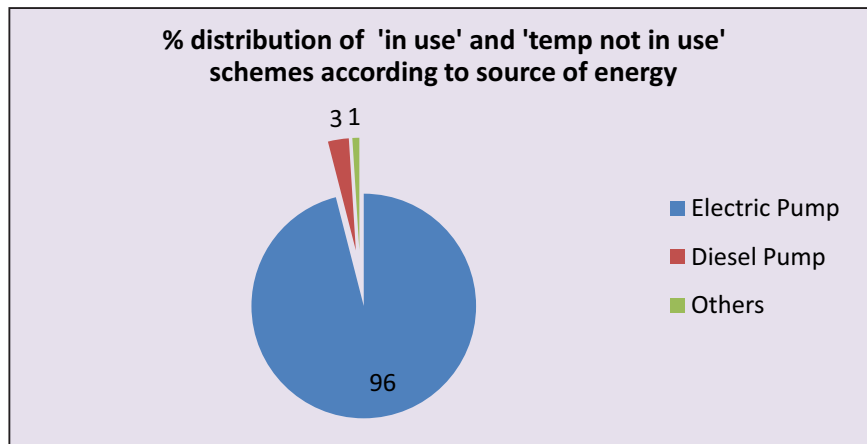
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 22,51,922, out of 22,85,293 MI schemes. Out of these (22,51,922) schemes, majority of schemes i.e 73.0% (16,44,149) have submersible pump and 18.1% (4,08,158) schemes have centrifugal pump as lifting device, 5.1% (1,15,506) schemes are operated by turbines, 0.2% (5,057) are being operated manually or by animal for water lifting purposes and rest 3.6% (79,052) 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

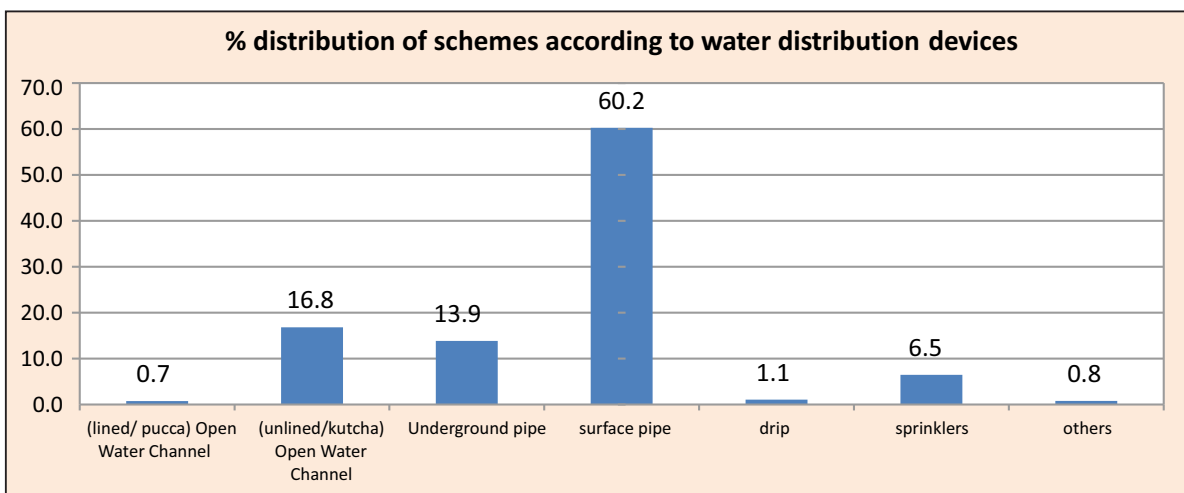
The information on 'source of energy' was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 22,51,922. Out of these schemes, majority of schemes i.e 96.0% (21,62,292) schemes are using electric pump as source of energy followed by diesel pump 3.0% (68,514) schemes. In rest of the cases, solar pumps, windmills, manual/animal and other sources are used as sources of energy. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



Note: Category 'Others' include solar pumps, windmills, manual/animal and other sources of energy

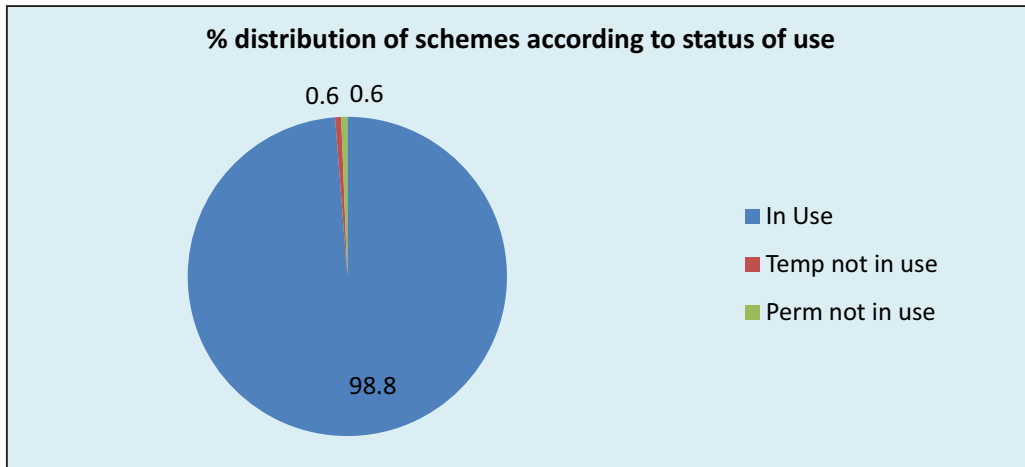
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipe is 60.2% (13,59,904) followed by open water channel (unlined/kutchha) 16.8% (3,79,904), underground pipe 13.9% (3,12,657) and 6.5% (1,46,250) sprinkles. The water distribution devices used in the rest of the MI schemes are 1.1% (24,307) drip, 0.7% (16,736) open water channel (lined/pucca) and 0.8% (17,582) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

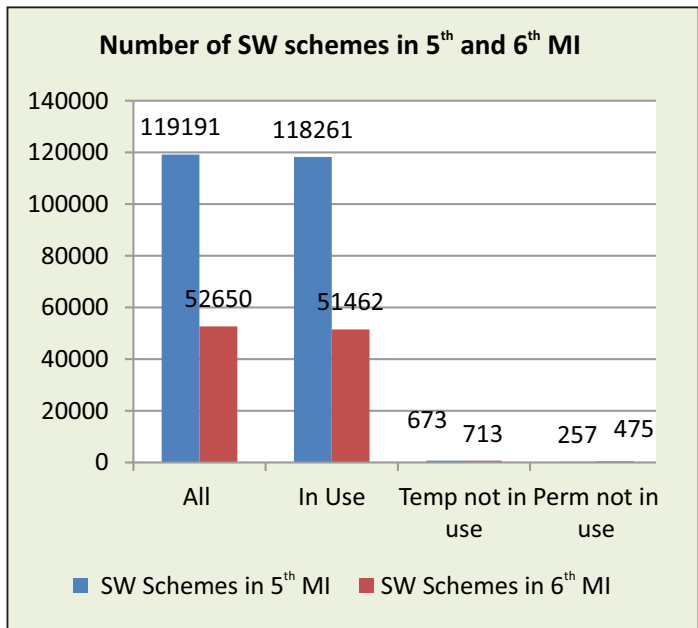
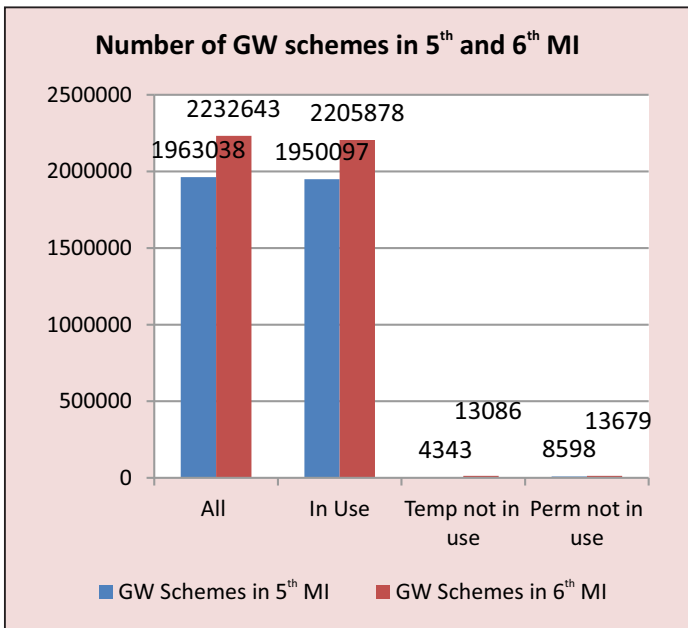


Status of MI schemes

Out of all MI schemes, 98.8%(22,57,340) are 'in use', 0.6% (13,799) are 'temporarily not in use' and 0.6 % (14,154) are 'permanently not in use' schemes which is depicted in the pie chart given below.



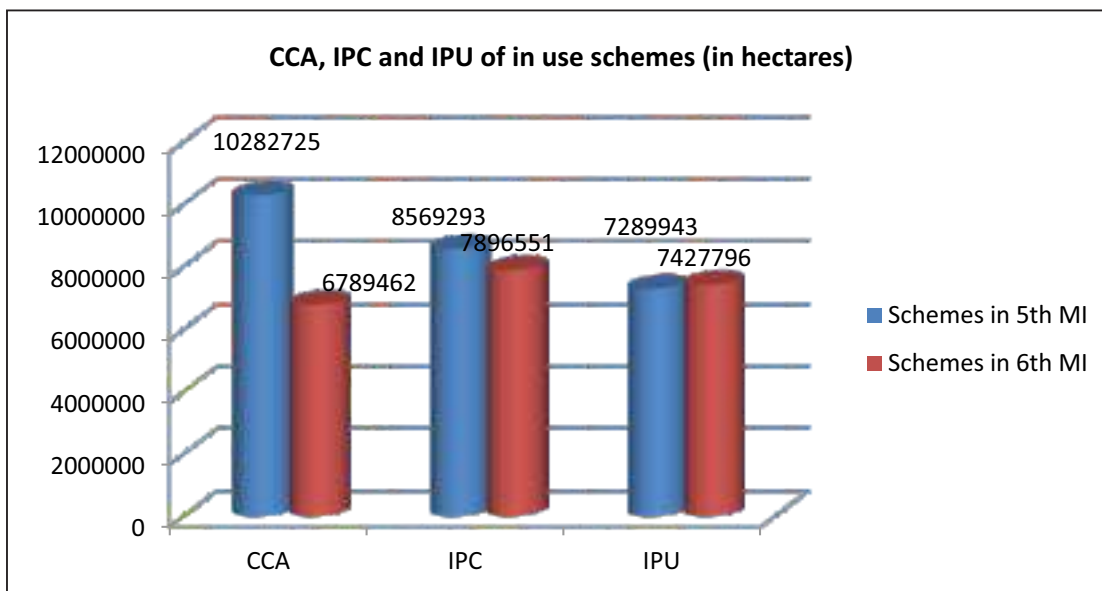
Out of 13,799 'temporarily not in use' schemes, 13,086 are GW schemes and 713 are SW schemes. Among 14154 'permanently not in use' schemes, 13679 are GW schemes and 475 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been decline of 7.9% 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 has declined from 85,69,293 hectares during 5th MI census to 78,96,551 hectares during 6th MI census. Irrigation potential utilized was 72,89,943 hectares during 5th MI Census in Madhya Pradesh, which has increased by

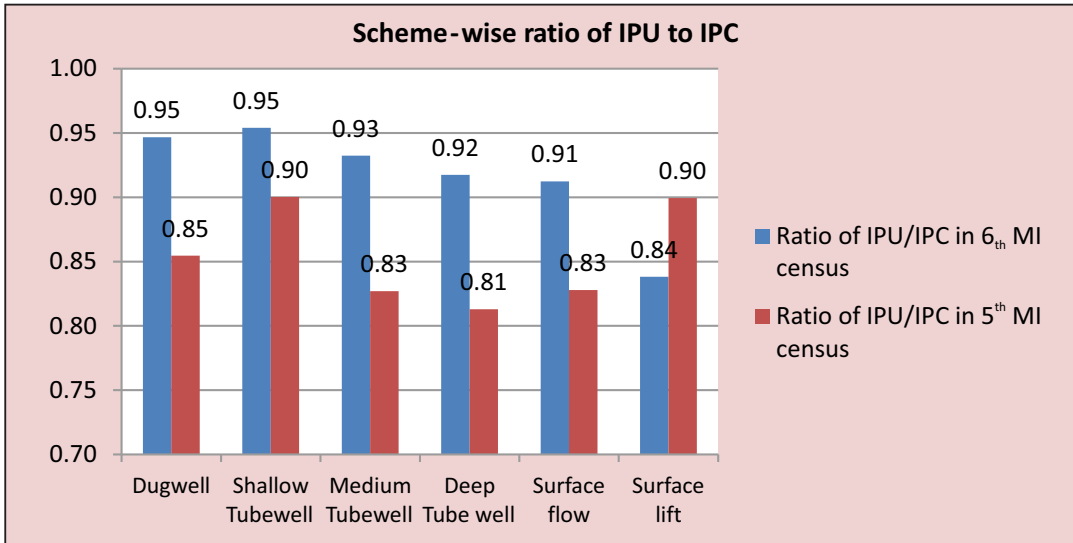
1.9% during 6th MI Census. A comparative chart showing Culturable Command Area (CCA), IPC and IPU of schemes during 5th and 6th MI census is shown in the chart given below.



As per 6th MI Census, 76,41,031 hectares irrigation potential is created through GW schemes and 2,55,520 hectares through SW schemes. Irrigation potential utilized is 72,02,257 and 2,25,540 for GW and SW schemes respectively. This shows that 94% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 88 %. The scheme-wise ratio of IPU to IPC in Madhya Pradesh is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Madhya Pradesh			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	38,04,532	36,01,908	0.95
Shallow Tubewell	17,78,696	16,96,973	0.95
Medium Tubewell	10,28,338	9,58,886	0.93
Deep Tubewell	10,29,465	9,44,491	0.92
Surface flow	1,53,215	1,39,794	0.91
Surface lift	1,02,304	85,746	0.84

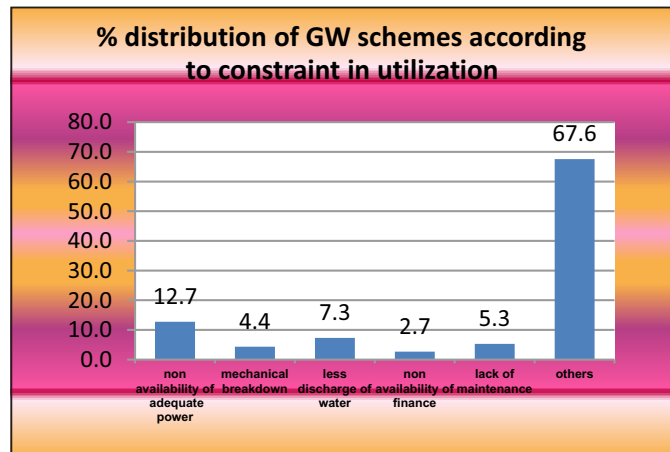
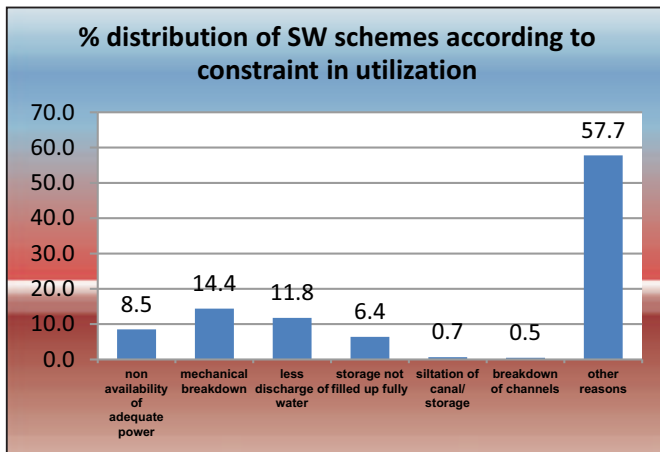
Dugwells have the highest IPC & IPU followed by shallow tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes have more than 90% utilization of the potential created except surface lift schemes with 84% utilization. A comparative chart showing scheme-wise 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, out of 22,57,340 'in use' schemes in Madhya Pradesh, 94,181 (4.2%) schemes are under-utilised due to several reasons. Remaining 95.8% 'in use' MI schemes are functioning without any constraints.

Among 94,181 under-utilized schemes, 93,570 are GW schemes and 611 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.

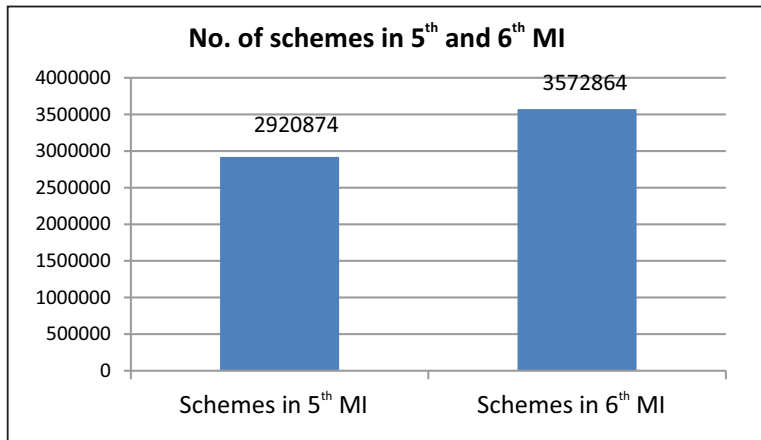


Key Parameters of 6 th MI Census-Madhya Pradesh						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	13,36,682			58.49
	Shallow Tubewell	No.	4,19,460			18.35
	Medium Tubewell	No.	2,43,781			10.67
	Deep Tubewells	No.	2,32,720			10.18
	Ground Water Schemes	No.	22,32,643			97.70
	Surface Flow	No.	19,557			0.86
	Surface Lift	No.	33,093			1.45
	Surface Water Schemes	No.	52,650			2.30
	Total Schemes	No.	22,85,293			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	65,17,954	2,38,120	67,56,074	
	IPC	Ha	76,41,031	2,55,520	78,96,551	
	IPU	Ha	72,02,257	2,25,540	74,27,797	
	IPC of in use schemes	Ha	76,02,921	2,54,102	78,57,023	
	IPU of in use schemes	Ha	71,82,690	2,24,607	74,07,297	
	% Ratio of IPU wrt IPC	%	94.26	88.27	94.06	
	Gap in IPC and IPU	Ha	4,38,774	29,980	4,68,754	
Ownership	Individual ownership	No.	17,05,206	16,756	17,21,962	75.35
	Group of Farmers	No.	4,80,725	7,374	4,88,099	21.36
	Public owned	No.	46,712	28,520	75,232	3.29
	Total	No.	22,32,643	52,650	22,85,293	100.00
Social Status of Individual Owner	SC	No.	1,26,908	999	1,27,907	7.43
	ST	No.	2,39,665	3,832	2,43,497	14.14
	OBC	No.	10,81,631	9,518	10,91,149	63.37
	Others	No.	2,57,002	2,407	25,9,409	15.06

Key Parameters of 6 th MI Census-Madhya Pradesh						
Parameter		Unit	Value			%
	Total Individual	No.	17,05,206	16,756	17,21,962	100.00
Devices	Open Water Channel (Lined/Pucca)	No.	15,652	1,084	16,736	0.74
	Open Water Channel (unlined/kutchra)	No.	3,73,376	6,528	3,79,904	16.82
Water Distribution	Underground pipe	No.	3,04,985	7,672	3,12,657	13.84
	Surface Pipe	No.	13,28,575	32,329	13,60,904	60.26
	Drip	No.	24,110	197	24,307	1.08
	Sprinklers	No.	1,43,215	3,035	1,46,250	6.48
	Others	No.	15,965	1,617	17,582	0.78
	Total	No.	22,05,878	52,462	22,58,340	100.00

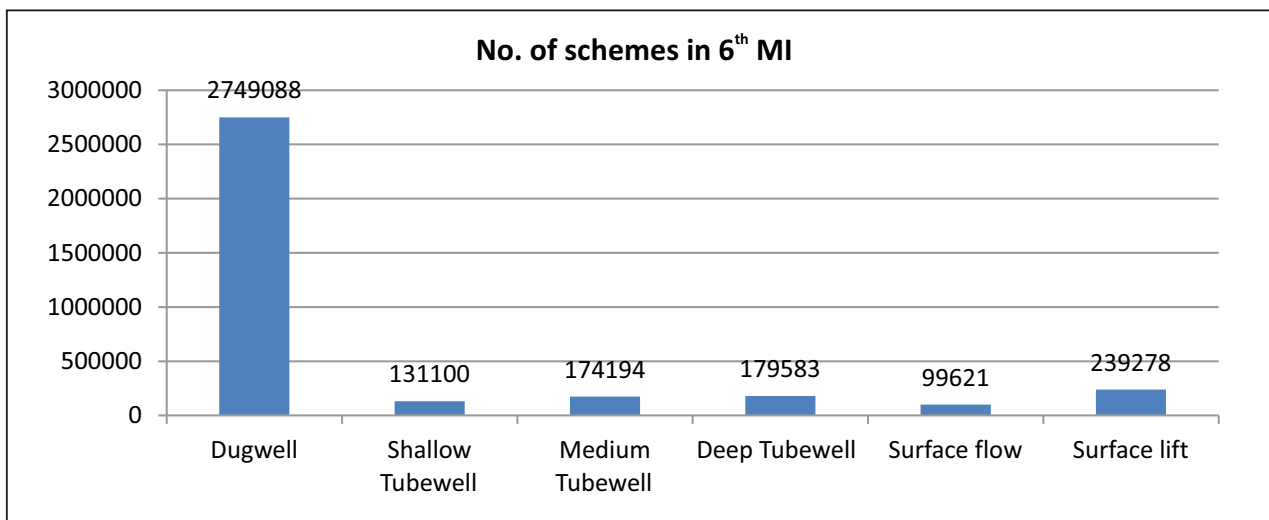
MAHARASHTRA

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.

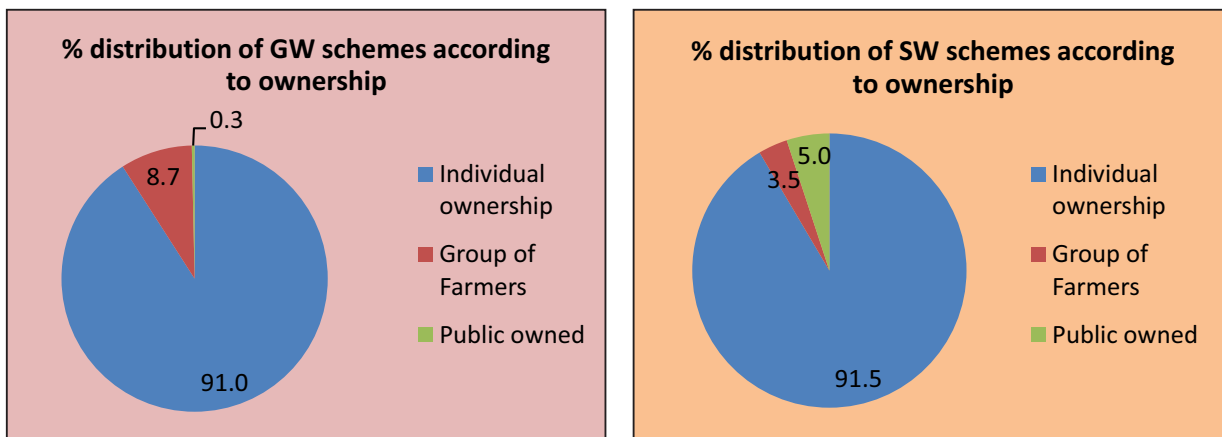
Out of the 35,72,864 MI schemes reported in Maharashtra, 76.9% (27,49,088) are dugwells followed by 6.7% (2,39,278) surface lift and 5.02% (1,79,583) deep tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.



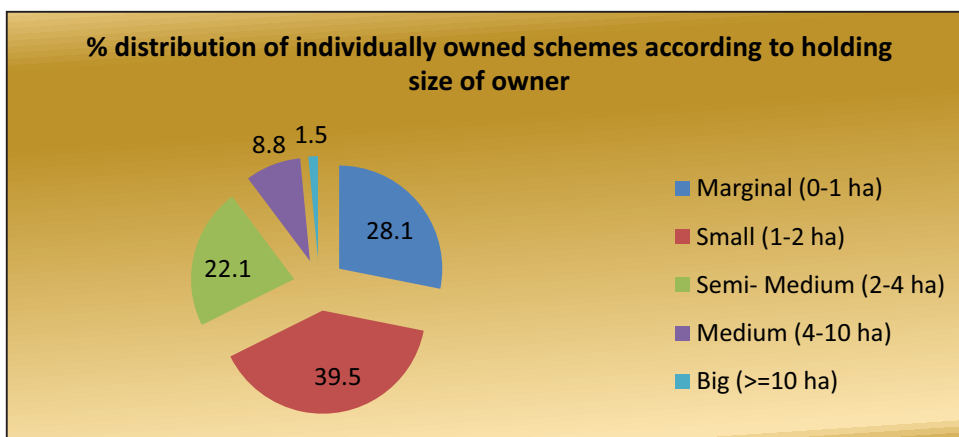
Ownership of MI schemes

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.

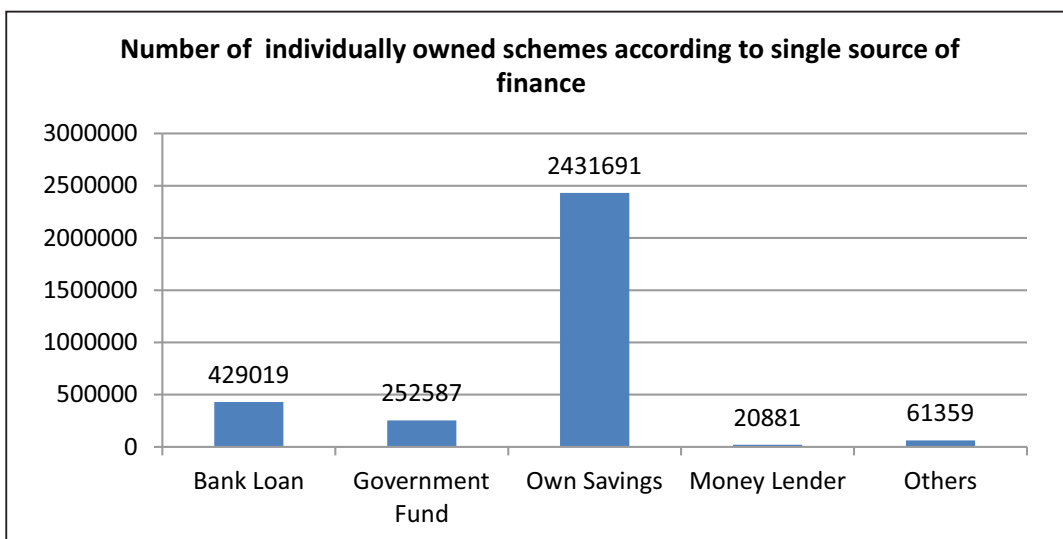


Out of the 32,50,590 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 67.6% (21,99,201) in MI schemes. Rest of the 32.4% schemes are owned by semi-medium farmers to big farmers with holding size more than 2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



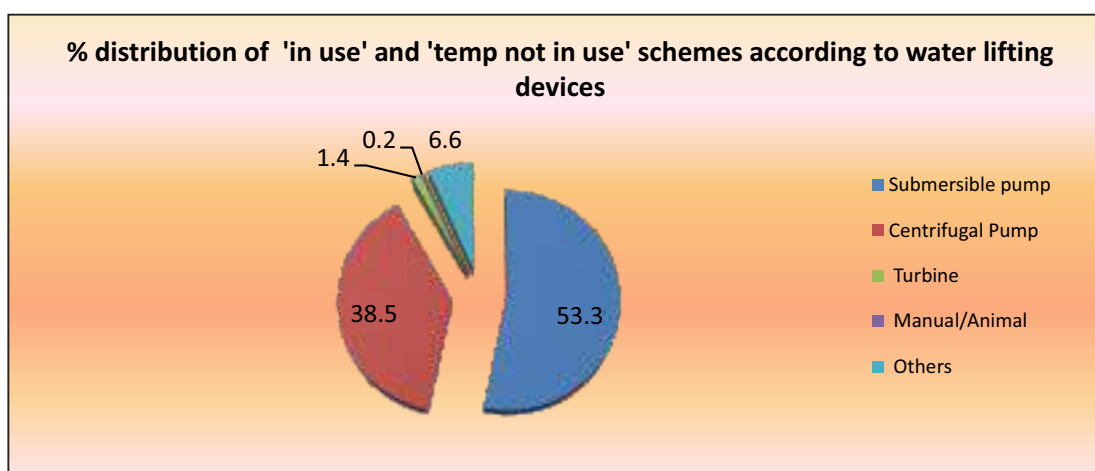
Financing of MI schemes

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

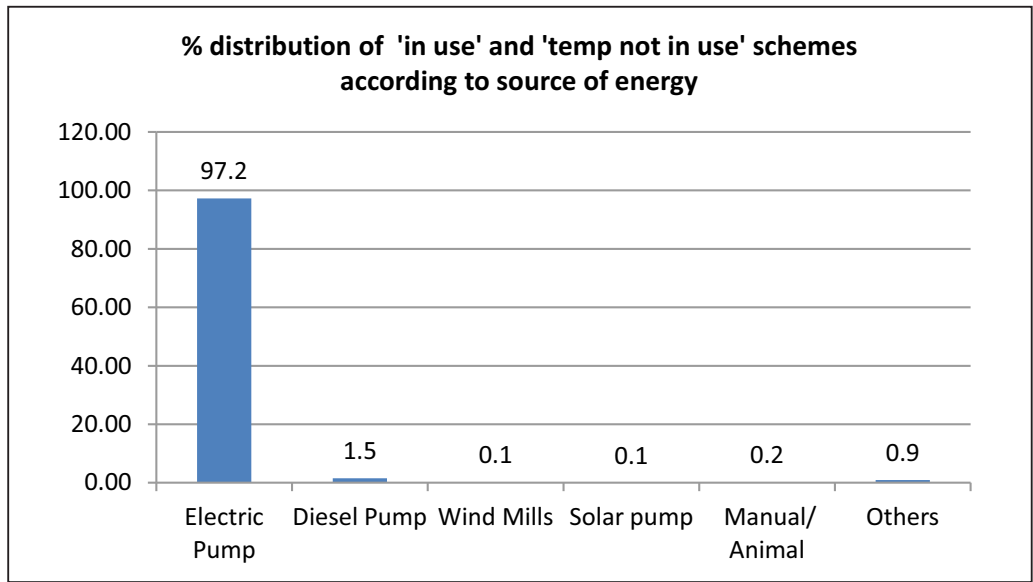
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which falls under the category of ground water and surface lift schemes. The number of such schemes is 34,69,410, out of 35,72,864 MI schemes. Out of these (34,69,410) schemes, majority 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

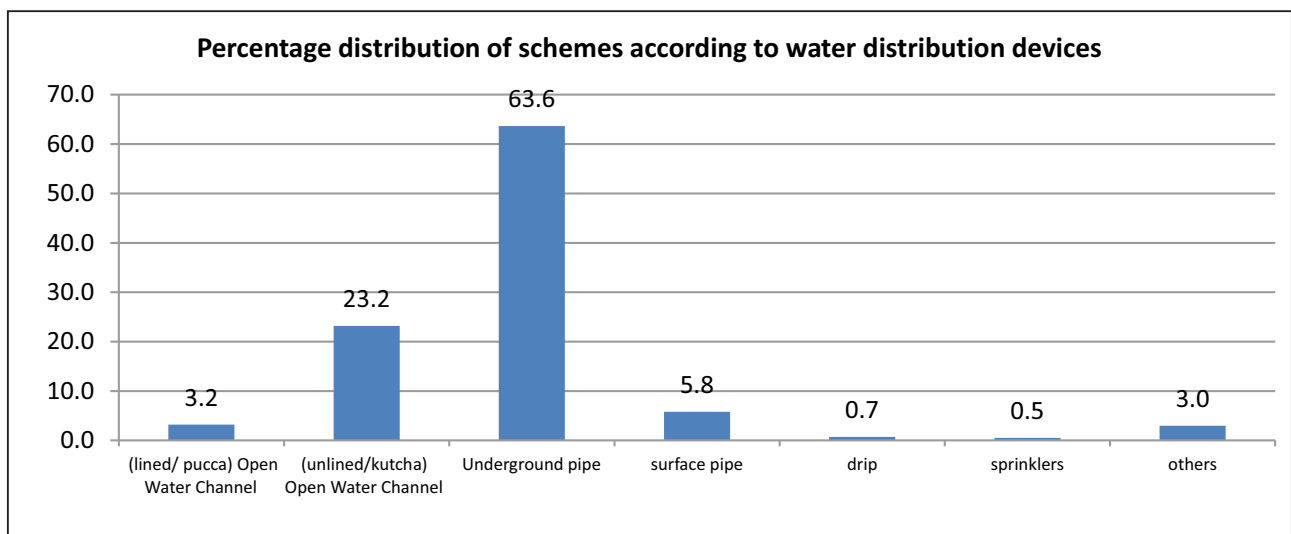
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which falls under the category of ground water and surface lift schemes. The number of such schemes is 34,69,410. Out of these schemes, 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.



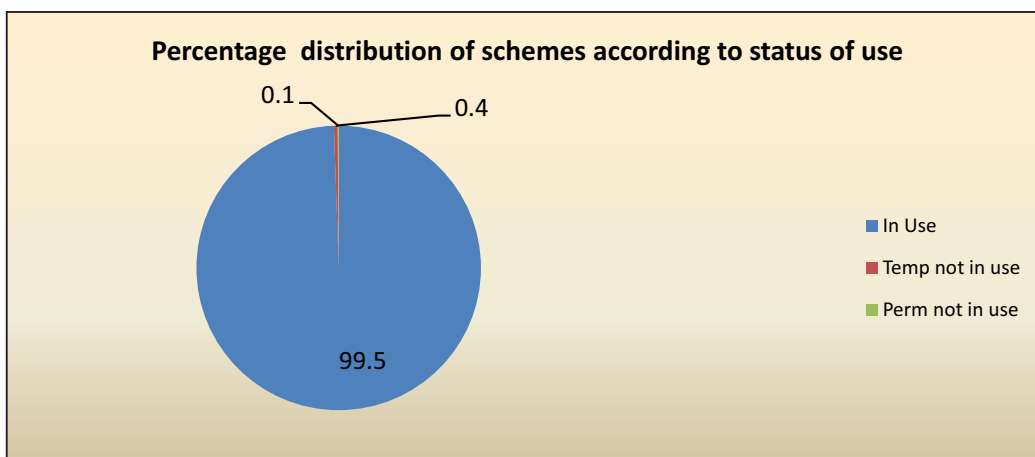
Water distribution device

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.

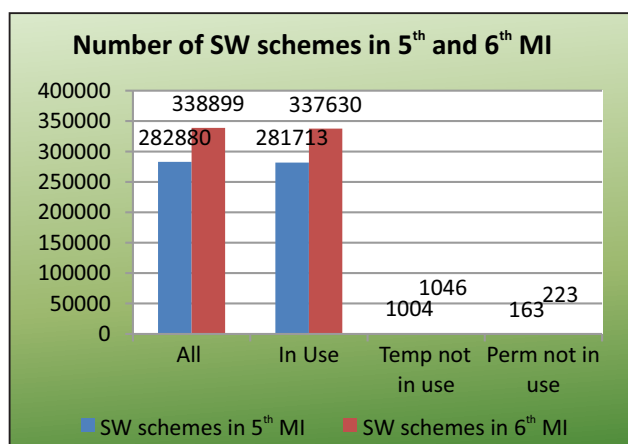
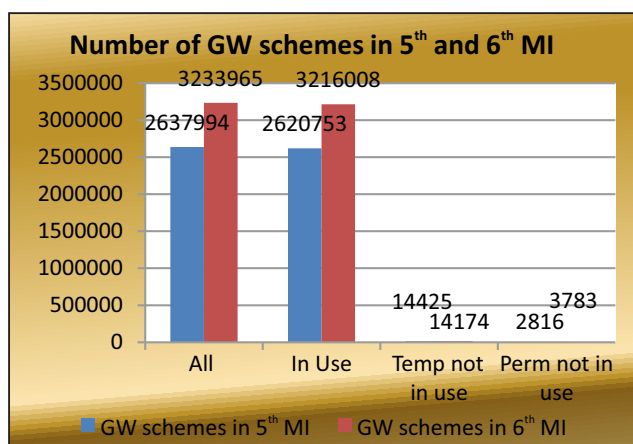


Status of MI schemes

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.

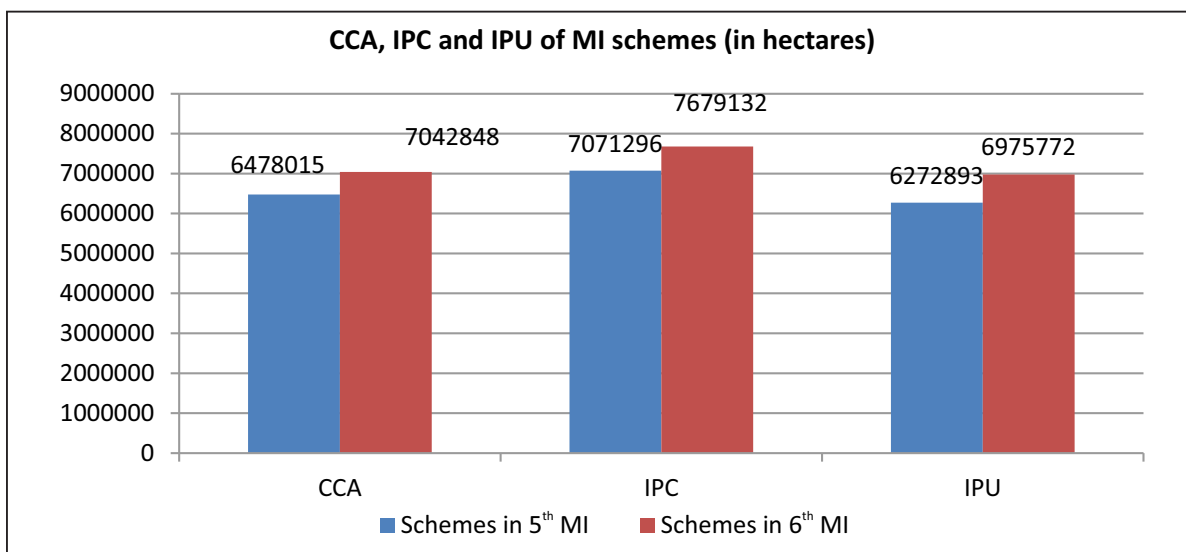


Out of 15,220 'temporarily not in use' schemes, 14,174 are GW schemes and 1,046 are SW schemes. Among 4,006 'permanently not in use' schemes, 3,783 are GW schemes and 223 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

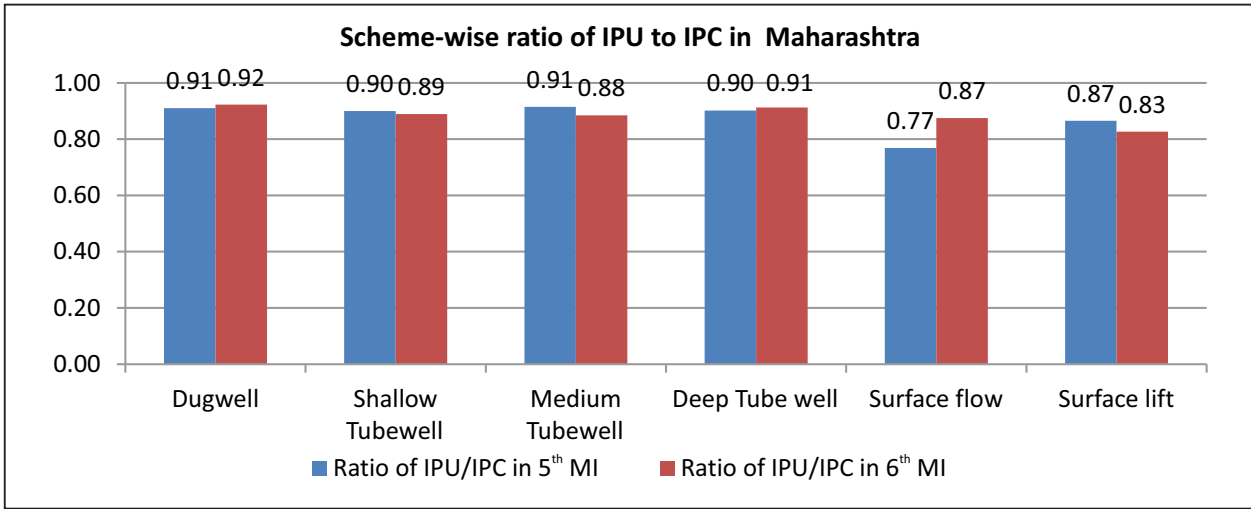
There has been marginal increase of 8.6 % in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 70,71,296 hectares during 5th MI census to 76,79,132 hectares during 6th 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

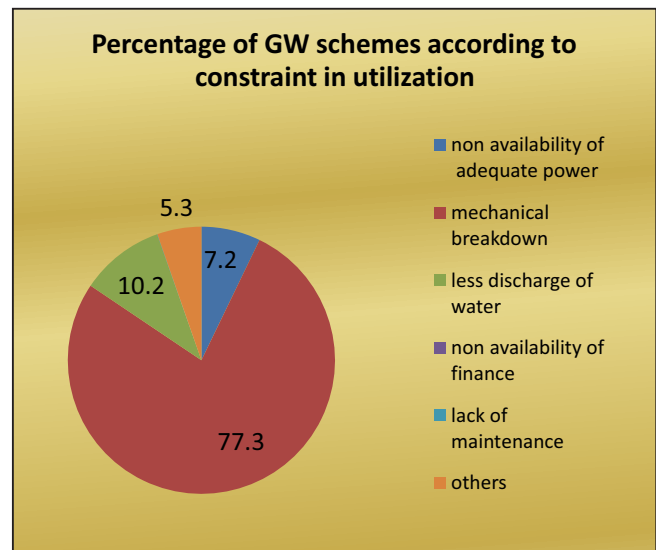
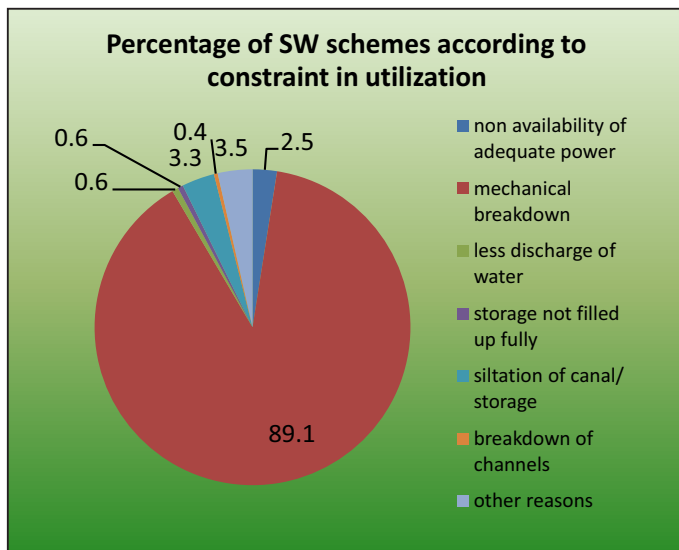
Dugwells have the highest IPC & IPU followed by surface lift and surface flow schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 85% utilization of the potential created except surface lift scheme with a utilization of 83%. A comparative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



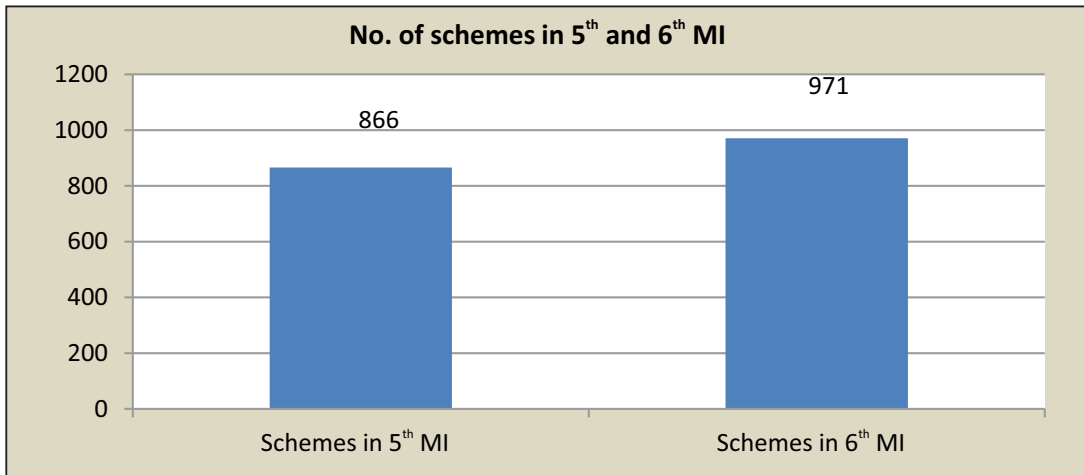
Key Parameters of 6 th MI Census-Maharashtra						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	27,49,088			76.94
	Shallow Tubewell	No.	1,31,100			3.67
	Medium Tubewell	No.	1,74,194			4.88
	Deep Tubewells	No.	1,79,583			5.03
	Ground Water Schemes	No.	32,33,965			90.51
	Surface Flow	No.	99,621			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

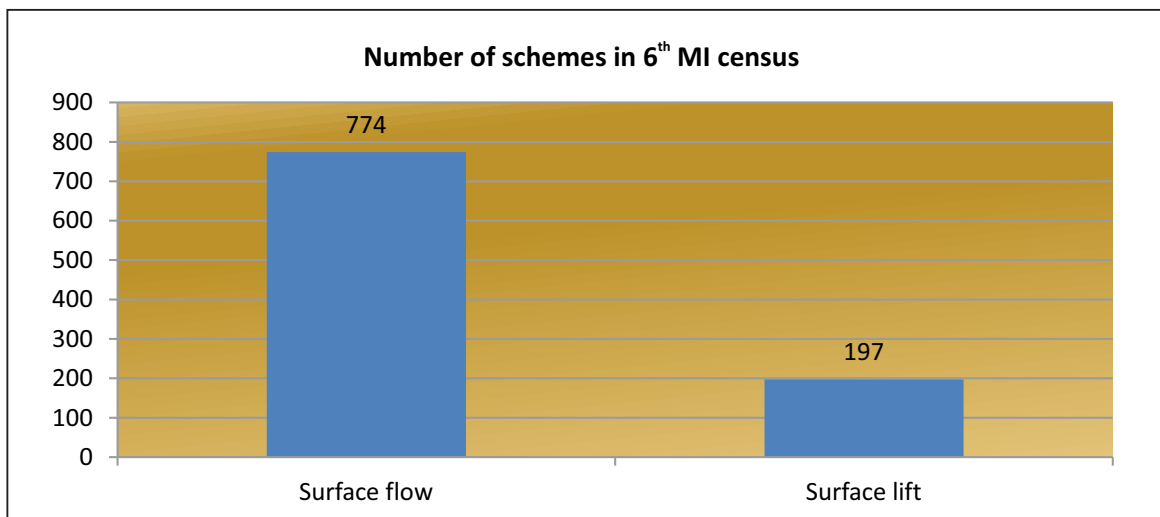
Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutchra)	No.	7,58,080	65,942	8,24,022	23.19
	Underground pipe	No.	20,43,499	2,17,900	22,61,399	63.64
	Surface Pipe	No.	1,87,207	18,524	2,05,731	5.79
	Drip	No.	24,866	664	25,530	0.72
	Sprinklers	No.	16,217	1,725	17,942	0.50
	Others	No.	96,095	9,292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

MANIPUR

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Manipur has 971 MI schemes. All (971) schemes are Surface Water (SW) schemes. There is an increase to the tune of 12.1% with 971 schemes in 6th MI census as compared to the 866 schemes in 5th MI census in the State of Manipur.



Out of the 971 MI schemes reported in Manipur, 79.7% (774) are surface flow schemes and 20.3% (197) are surface lift schemes. Surface water schemes are shown in the chart given below.



Ownership of MI schemes

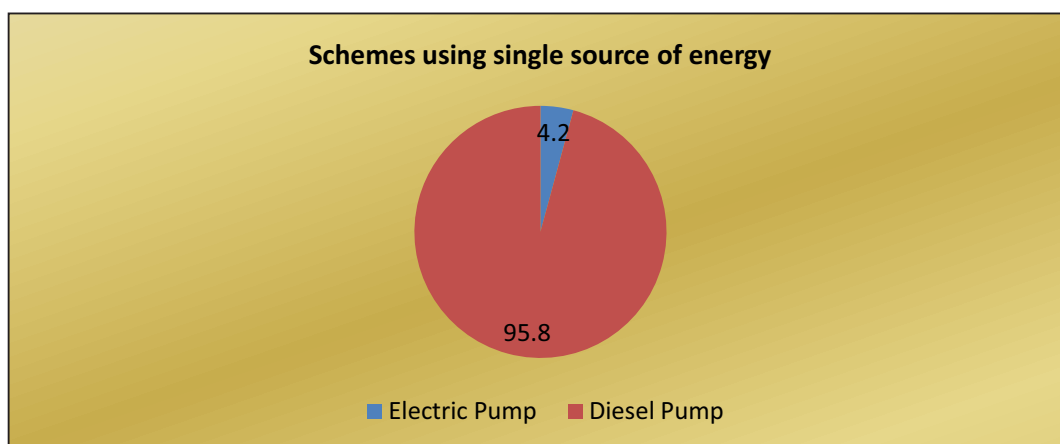
Out of 971 MI schemes, majority of the schemes i.e. 99.9% (970) schemes are public owned, only one (1) schemes is owned by group of farmers.

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 166, out of 971 MI schemes. All (166) schemes have centrifugal pump as lifting device.

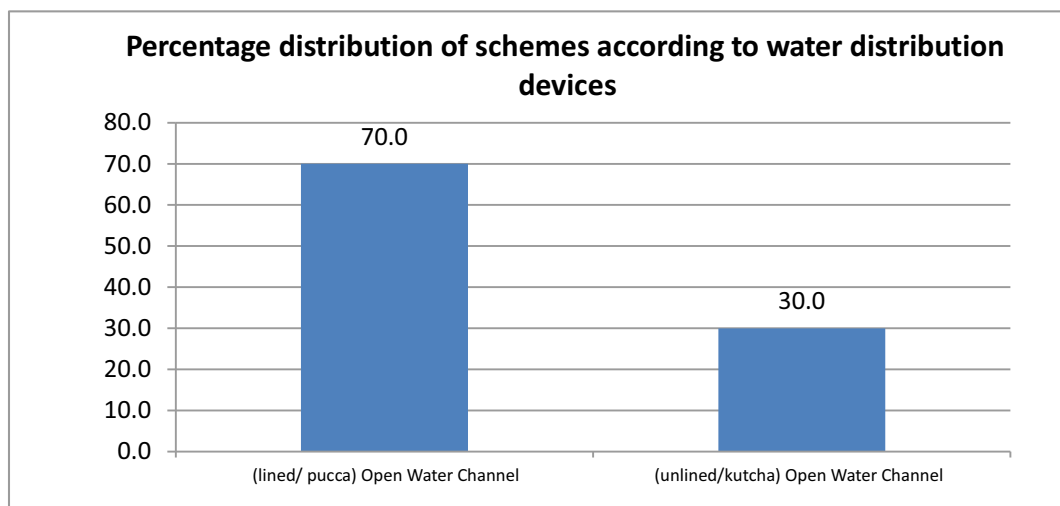
Distribution of source of energy

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' scheme which comes under the category of surface lift schemes. The number of such schemes is 166. Out of these (166) schemes, majority of schemes i.e 95.8% (159) schemes are using diesel pumps as source of energy and remaining 4.2% (7) are using electricity as source of energy. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



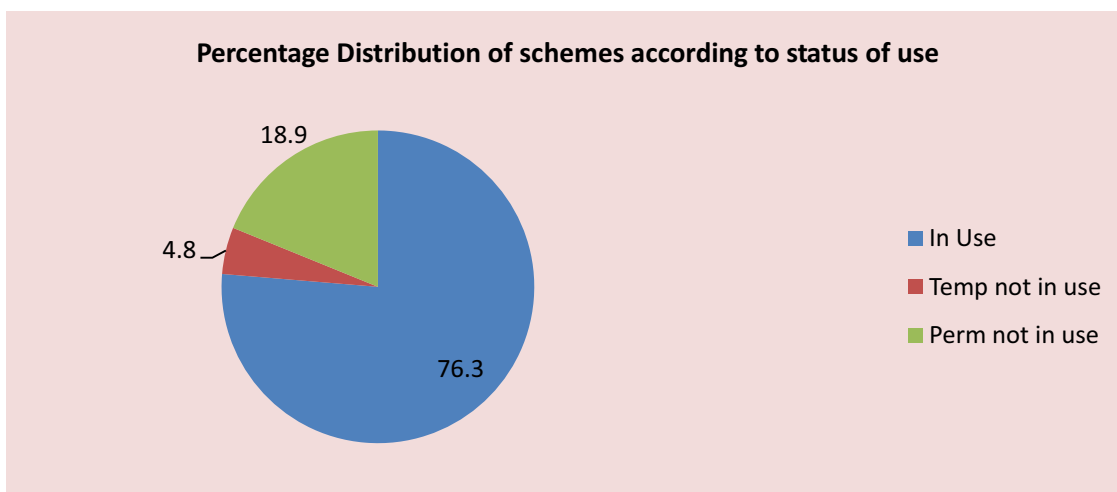
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (lined/pucca) is 70% (519). The water distribution device used in the remaining 30% (222) of the MI schemes is open water channel (unlined/Kutchra). The percentage share of schemes according to water distribution devices is depicted in the figure given below. Source of energy is shown in the pie chart given below.

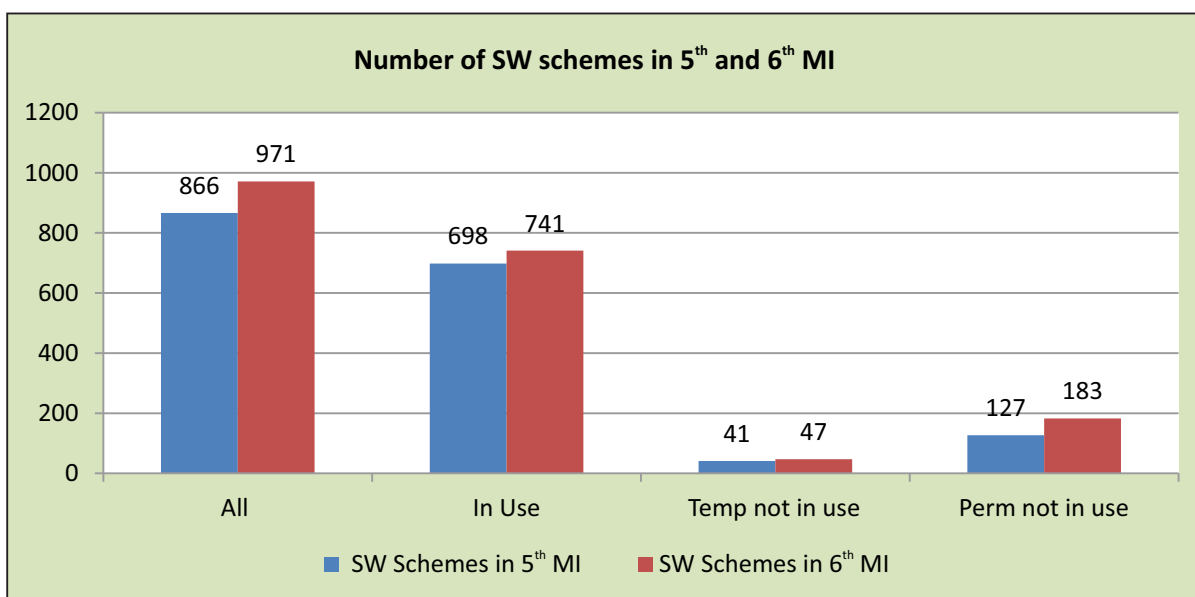


Status of MI schemes

Out of 971 MI schemes, 76.3% (741) are 'in use', 4.8% (47) are 'temporary not in use' and 18.9% (183) are 'permanently not in use' schemes which is depicted in the pie chart given below.

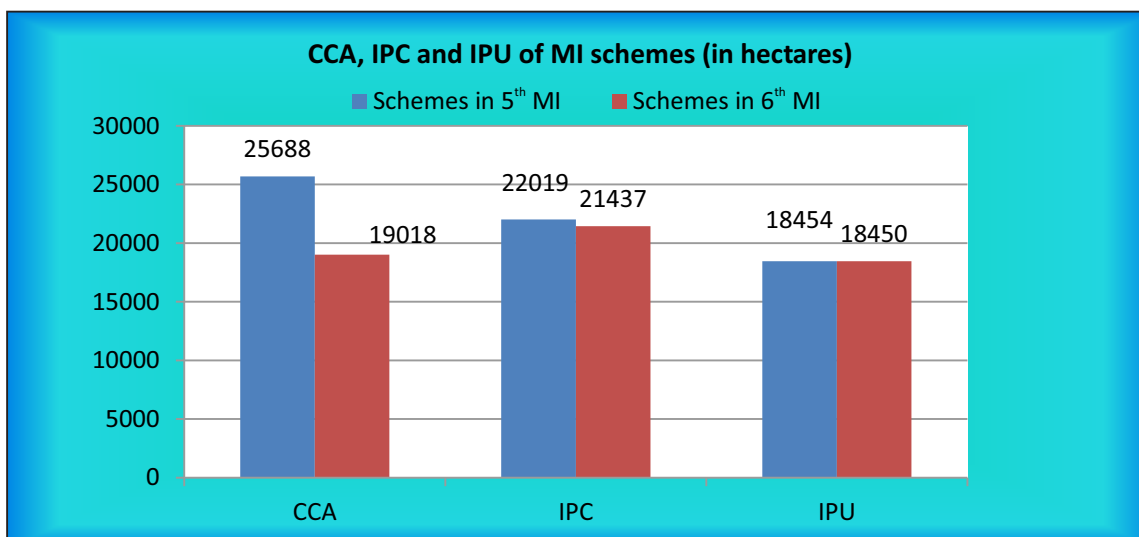


Out of 47 'temporarily not in use' schemes, 26 are surface flow schemes and 21 are surface lift schemes. Among 183 'permanently not in use' schemes, 152 are surface flow schemes and 31 are surface lift schemes. Status of SW schemes during 5th and 6th MI census is shown in the graph given below:



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

There has been a decline of 2.6% 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 has decreased from 2,2019 hectares during 5th MI census to 21,437 hectares during 6th MI census. Irrigation potential utilized was 18,454 hectares during 5th MI Census in Manipur, which has declined by 0.02% 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.



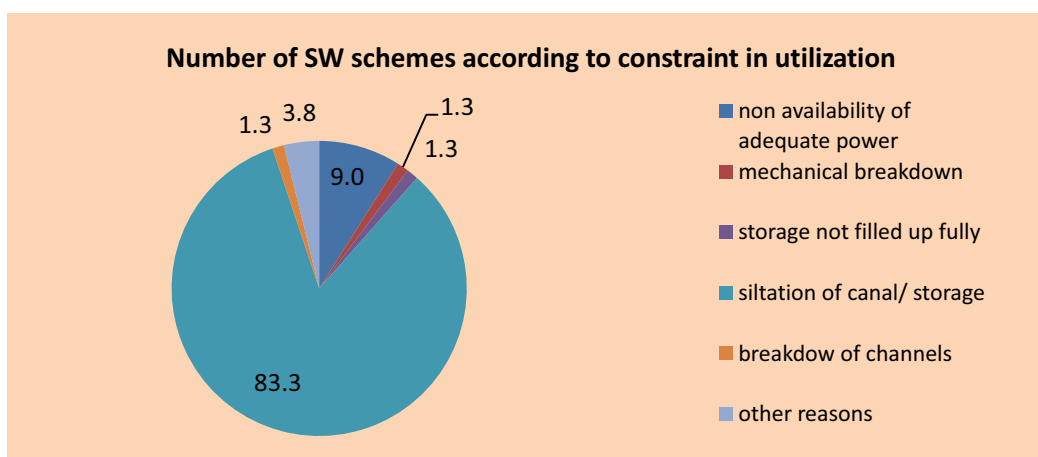
The scheme-wise ratio of IPU to IPC in Manipur is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Manipur			
	IPC	IPU	Ratio of IPU/IPC
Surface flow	17,404	14,836	0.85
Surface lift	4,033	3,614	0.90

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, 78 (10.5%) schemes out of 741 'in use' schemes in Manipur are underutilized due to several reasons. Remaining 89.5% 'in use' MI schemes are functioning without any constraints.

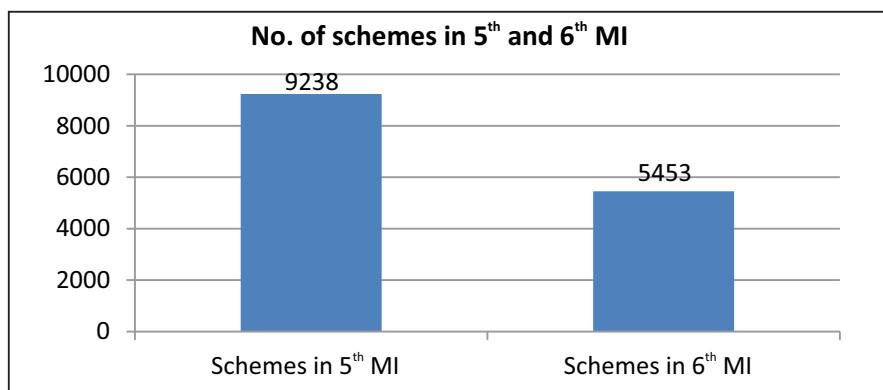
The SW schemes are underutilized due to siltation of canal/ storage, non-availability of adequate power, break-down of channels, storage not filled up fully, mechanical breakdown and other reasons. The percentage distribution of reasons of under-utilization of SW schemes is shown in Pie chart given below:



Key Parameters of 6 th MI Census-Manipur				
Parameter		Unit		%
	Surface Flow	No.	774	79.71
	Surface Lift	No.	197	20.29
	Total Schemes	No.	971	
CCA, IPC and IPU	CCA	Ha	19,018	
	IPC	Ha	21,437	
	IPU	Ha	18,450	
	IPC of in use schemes	Ha	21,410	
	IPU of in use schemes	Ha	18,425	
	% Ratio of IPU wrt IPC	%	86.07	
	Gap in IPC and IPU	Ha	2,987	
Ownership	Individual ownership	No.	0	0.00
	Group of Farmers	No.	1	0.10
	Public owned	No.	970	99.90
	Total	No.	971	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	519	70.04
	Open Water Channel (unlined/ kutcha)	No.	222	29.96
	Total	No.	741	100.00

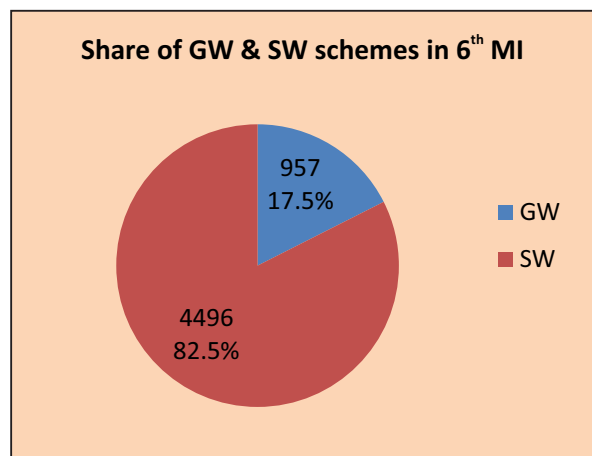
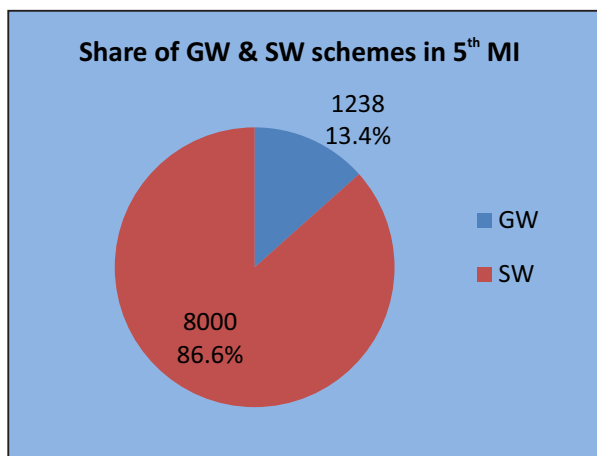
MEGHALAYA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Meghalaya has 5,453 MI schemes comprising of 17.5 % (957) Ground Water (GW) schemes and 82.5% (4,496) Surface Water (SW) schemes. There is a decline to the tune of 41.0% in 6th MI census as compared to the 9,238 schemes in 5th MI census in the State of Meghalaya.

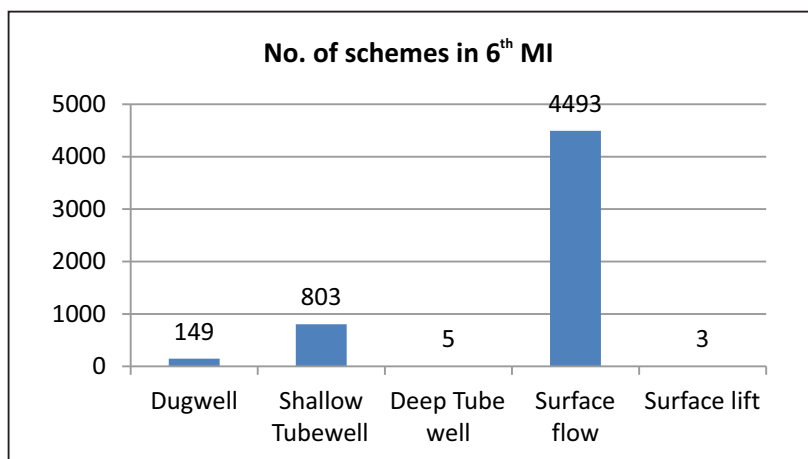


The State Government has reported a decline of 22.7% (281) in GW schemes and 43.8% (3,504) in SW schemes during 6th MI census as compared to the 1,238 GW schemes and 8,000 SW schemes recorded in 5th census.

Share of GW schemes in the State of Meghalaya has increased from 13.4% in 5th MI Census to 17.5 % in 6th MI Census whereas share of SW schemes declined from 86.6% in 5th Minor Irrigation Census to 82.5% in 6th MI census as shown in the pie chart given below.

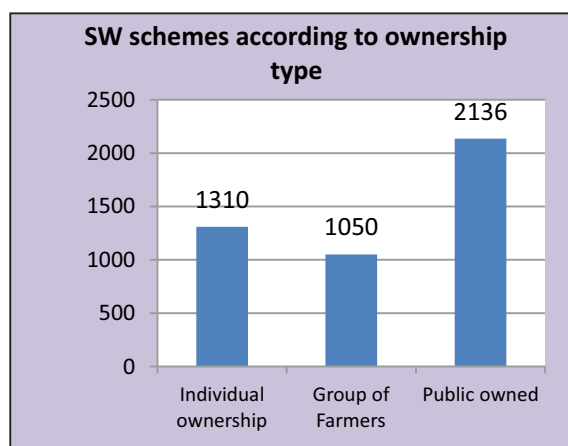
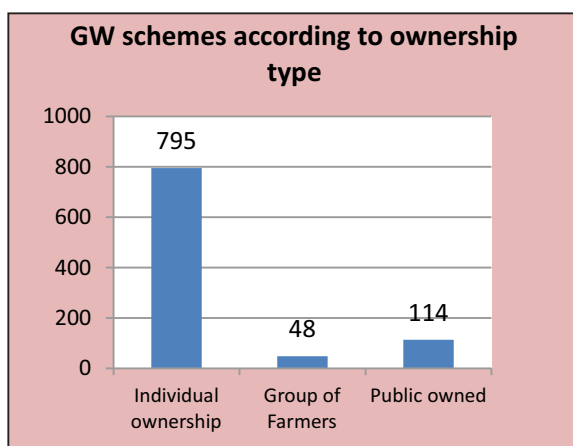


Out of the 5,453 MI schemes reported in Meghalaya, 82.4% (4,493) are surface flow schemes followed by 14.7% (803) shallow tubewells and 2.7% (149) dugwells. Distribution of different GW and SW schemes is shown in the chart given below.

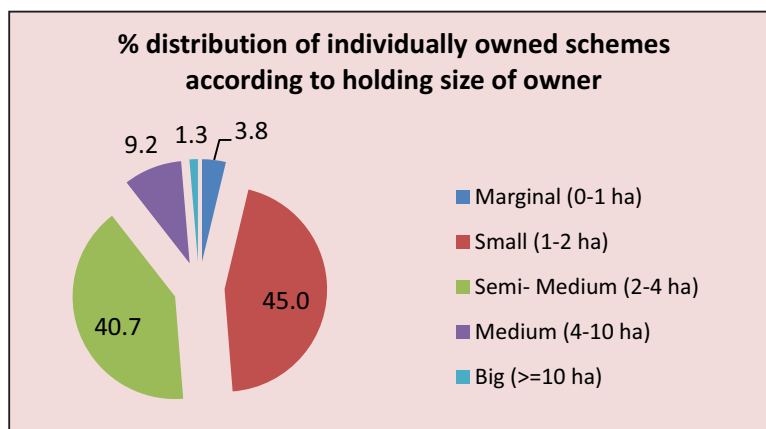


Ownership of MI schemes

Out of 5,453 MI schemes, majority of the schemes i.e. 41.3% (2,250) schemes are public owned, 38.6% (2,105) schemes are owned by individual farmers and 20.1% (1,098) are owned by group of farmers. Among 957 GW schemes, 83.1% (795) schemes are individually owned and among 4,496 SW schemes, 29.1% (1,310) are owned by individual farmers. Distribution of MI schemes according to ownership is also shown in the figure given below.

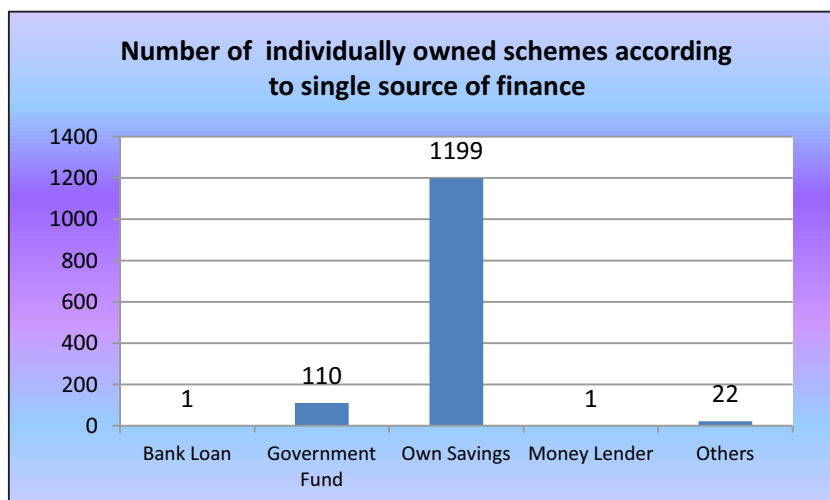


Out of 2,105 individually owned schemes, based on holding size of owner, marginal to semi-medium farmers (having less than 4 hectares) own a major share of 89.5% (1,883) in MI schemes. Rest of the 10.5% schemes are owned by medium and big farmers with holding size more than 4 hectares which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles in improving the livelihood of small, marginal and semi-medium farmers.



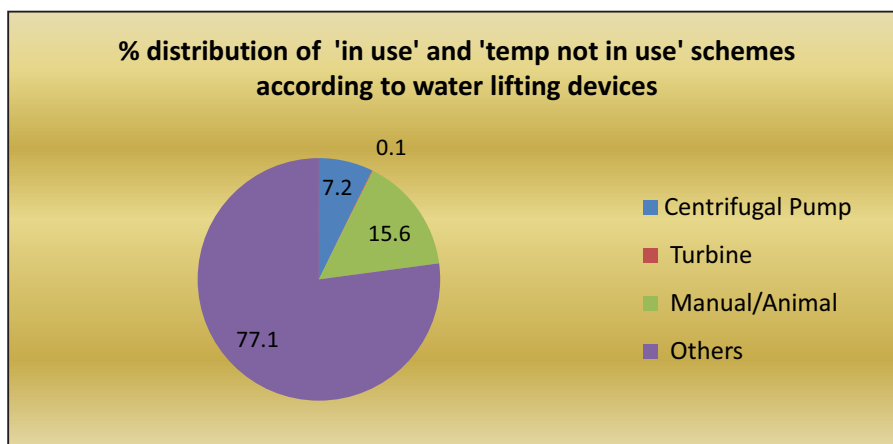
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 2,105 individually owned schemes, 63.3% (1,333) have single source of finance whereas 36.7% (772) have more than one source of finance. In these schemes with single source of finance (1,333), most of schemes i.e. 89.9% (1,199) are being financed by own savings of individual farmer followed by Government fund 8.3% (110). The reported sources of finance for the remaining 1.8% (24) schemes are bank loan, money lenders and others. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



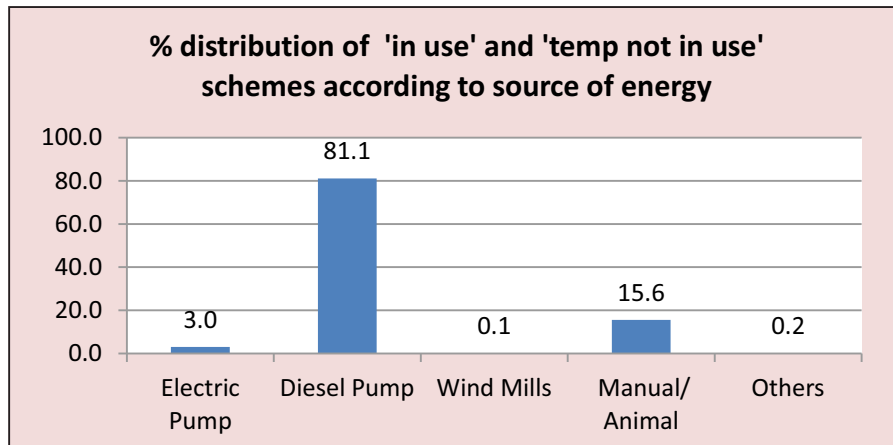
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 957, out of 5,453 MI schemes. Out of these (957) schemes, 7.2% (69) have centrifugal pump and 0.1% (1) scheme has turbine as lifting device, 15.6% (149) schemes are being operated manually or by animal for water lifting purposes and rest 77.1% (738) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



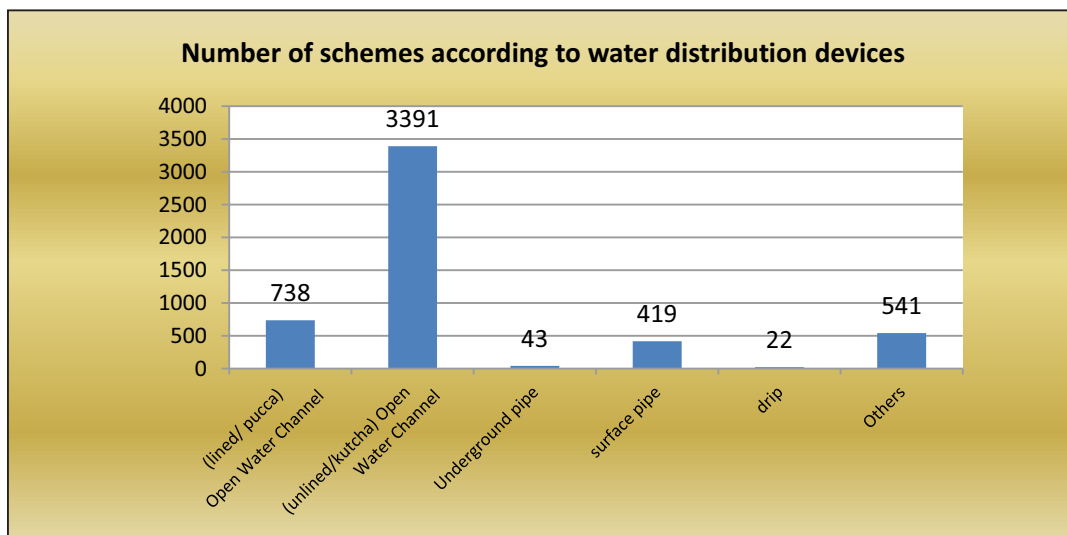
Distribution of source of energy

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 957. Out of these schemes, majority of schemes i.e 81.1% (776) schemes are using diesel pumps as source of energy followed by manual/animal sources in 15.6% (149) schemes. In rest of the cases, 3.0% (29) schemes are using electric pump as source of energy followed by 0.1% (1) windmills and 0.2% (2) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



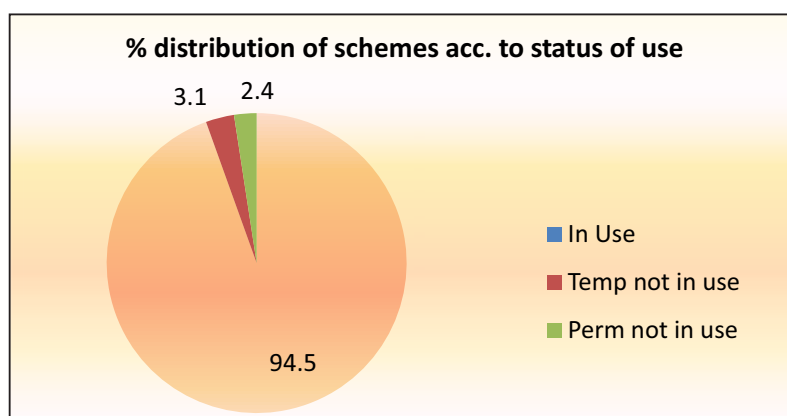
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 65.8% (3,391) followed by 14.3% (738) open water channel (lined/pucca) and 8.1% (419) surface pipes. The water distribution devices used in the rest of the MI schemes are 0.8% (43) underground pipe, 0.5% (22) drip and 10.5% (541) others. The number of schemes according to water distribution devices is depicted in the figure given below.

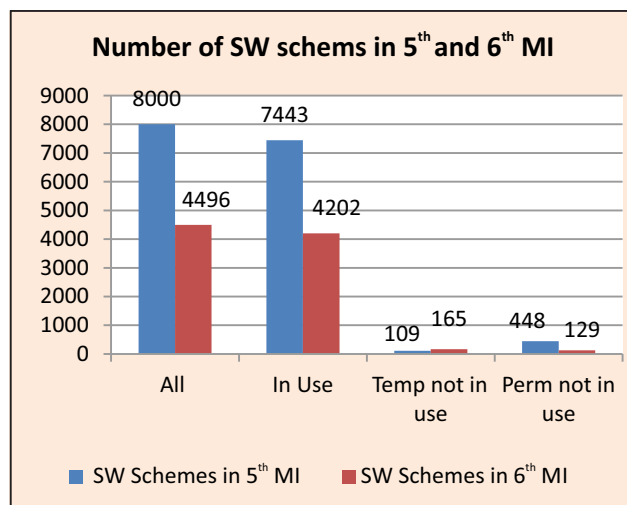
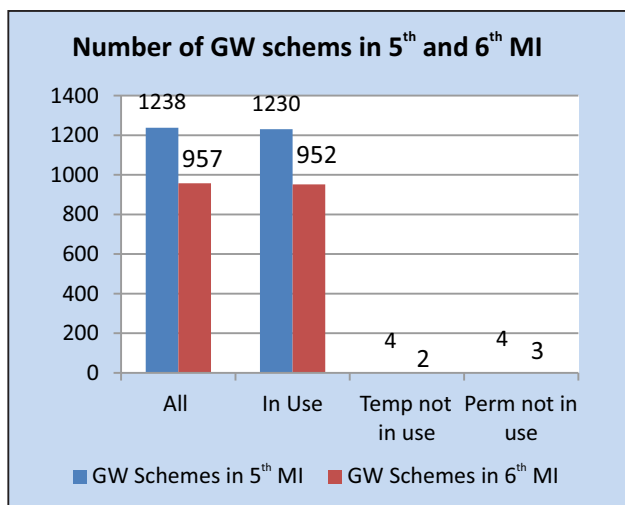


Status of MI schemes

Out of 5,453 MI schemes, 94.5% (5,154) are 'in use', 3.1% (167) are 'temporarily not in use' and only 2.4% (132) are 'permanently not in use' schemes which is depicted in the chart given below.

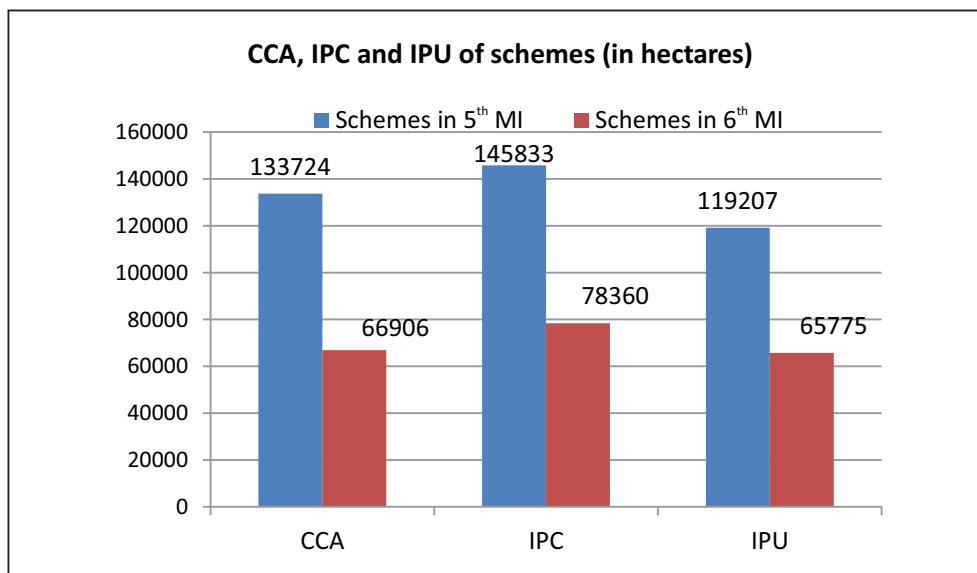


Out of 167 'temporarily not in use' schemes, 2 are GW schemes and 165 are SW schemes. Among 132 'permanently not in use' schemes, 3 are GW schemes and 129 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been decrease of 46.3% 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 has decreased from 1,45,833 hectares during 5th MI census to 78,360 hectares during 6th MI census. Irrigation potential utilized was 1,19,207 hectares during 5th MI Census in Meghalaya, which has declined by 44.8% 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, 2,322 hectares irrigation potential is created through GW schemes and 76,038 hectares through SW schemes. Irrigation potential utilized is 2,033 and 63,742 hectares for GW and SW schemes respectively. This shows that 87.6% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 83.8%. The scheme-wise ratio of IPU to IPC in Meghalaya is presented in the table given below.

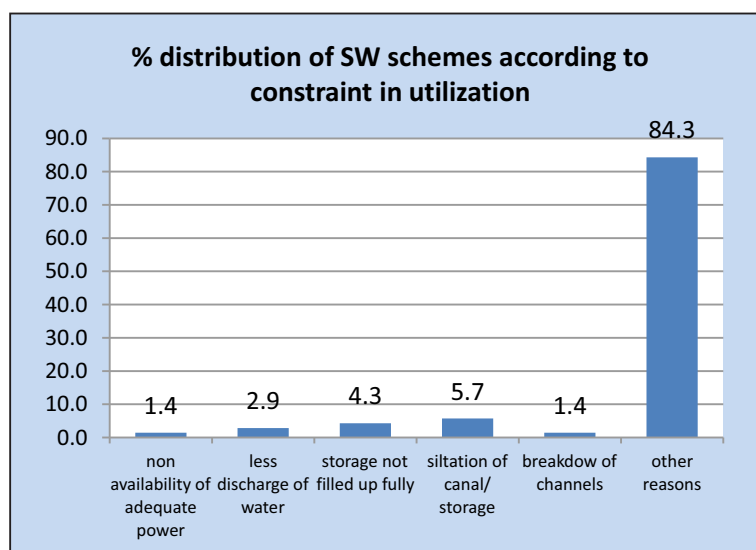
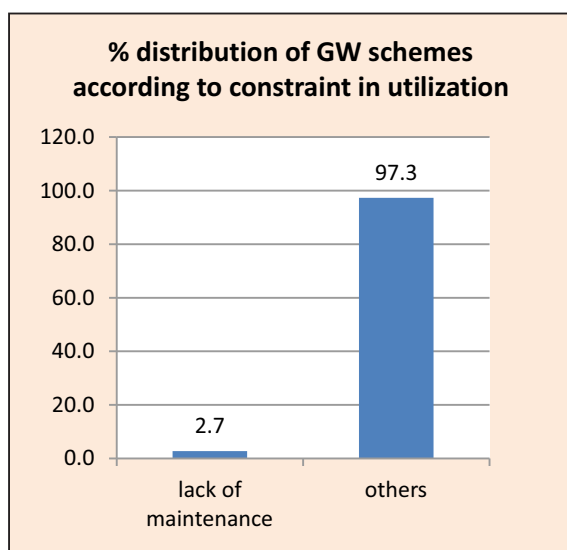
Scheme-wise ratio of IPU to IPC in Meghalaya			
	IPC	IPU	Ratio of IPU/IPC
Shallow Tubewell	2,255	2,033	0.90
Deep Tubewell	67	0	0.00
Surface flow	75,890	63,598	0.84
Surface lift	148	144	0.97

Surface flow schemes have the highest IPC & IPU followed by shallow tubewells and surface lift schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, surface lift schemes show the highest utilization of the potential created with 97%.

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, 3.4% (177) schemes out of 5,154 'in use' schemes in Meghalaya are under-utilized due to several reasons. Remaining 96.6% 'in use' MI schemes are functioning without any constraints.

Among 177 under-utilized schemes, 37 are GW schemes and 140 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.



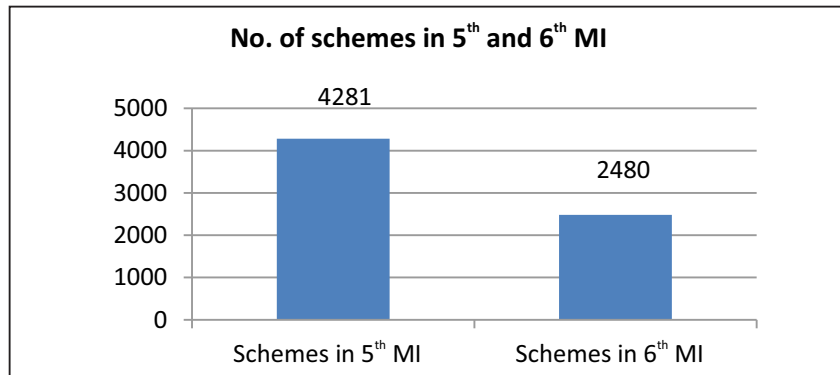
Key Parameters of 6 th MI Census-Meghalaya						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	149			2.73
	Shallow Tubewell	No.	803			14.73
	Medium Tubewell	No.	0			0.00
	Deep Tubewells	No.	5			0.09
	Ground Water Schemes	No.	957			17.55
	Surface Flow	No.	4,493			82.40
	Surface Lift	No.	3			0.06
	Surface Water Schemes	No.	4,496			82.45
	Total Schemes	No.	5,453			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	1,399	65,506	66,905	
	IPC	Ha	2,322	76,038	78,360	
	IPU	Ha	2,034	63,742	65,775	
	IPC of in use schemes	Ha	2,255	70,030	72,285	
	IPU of in use schemes	Ha	2,034	62,872	64,906	
	% Ratio of IPU wrt IPC	%	87.60	83.83	83.94	
	Gap in IPC and IPU	Ha	288	12,296	12,585	
Ownership	Individual ownership	No.	795	1,310	2,105	38.60
	Group of Farmers	No.	48	1,050	1,098	20.14
	Public owned	No.	114	2,136	2,250	41.26
	Total	No.	957	4,496	5,453	100.00
Social Status of Individual Owner	SC	No.	8	3	11	0.52
	ST	No.	20	1,306	1,326	62.99
	OBC	No.	13	1	14	0.67
	Others	No.	754	0	754	35.82
	Total Individual	No.	795	1,310	2,105	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	10	728	738	14.32

Key Parameters of 6th MI Census-Meghalaya

Parameter		Unit	Value			%
Open Water Channel (unlined/ kutchra)	No.	788	2,603	3,391	65.79	
Underground pipe	No.	1	42	43	0.83	
Surface Pipe	No.	2	417	419	8.13	
Drip	No.	0	22	22	0.43	
Sprinklers	No.	0	0	0	0.00	
Others	No.	151	390	541	10.50	
Total	No.	952	4,202	5,154	100.00	

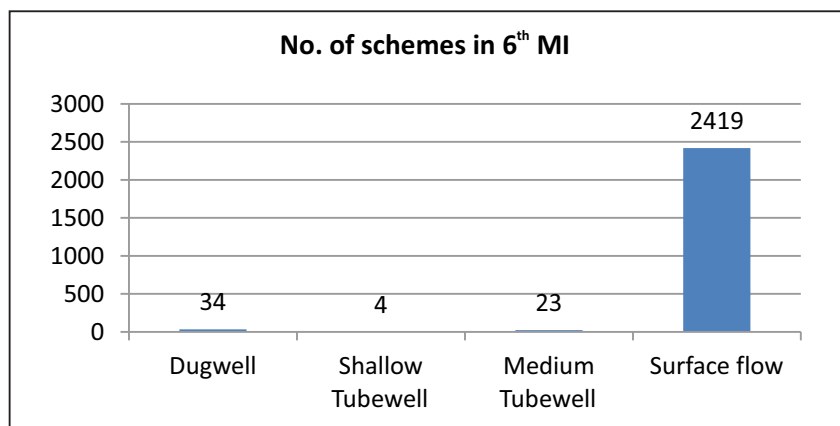
Mizoram

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Mizoram has 2,480 MI schemes comprising of 2.5% (61) Ground Water (GW) schemes and 97.5% (2,419) Surface Water (SW) schemes. There is a decline to the tune of 42.1% in 6th MI census as compared to the 4,281 schemes in 5th MI census in the State of Mizoram.



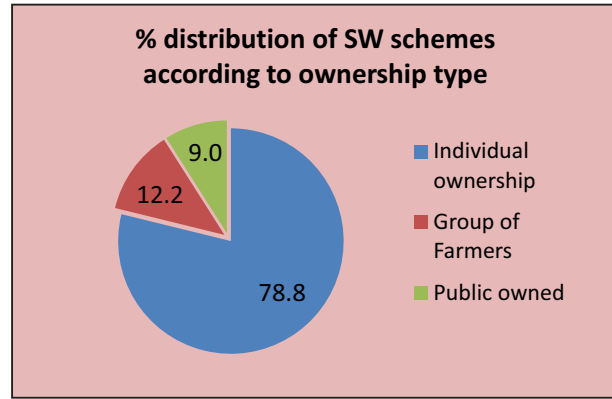
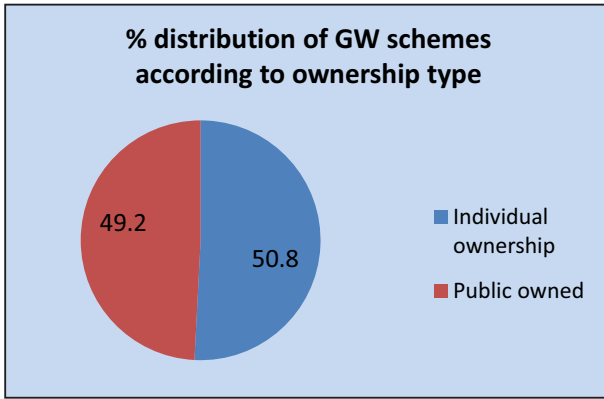
The State Government has reported a decline of 43.5 % (1,862) in SW schemes during 6th MI census as compared to 4,281 SW schemes recorded in 5th census. State has also reported 61 GW schemes in 6th MI as against nil GW schemes in 5th MI.

Out of the 2,480 MI schemes reported in Mizoram, 97.5% (2,419) are surface flow followed by 1.4% (34) dugwells. Distribution of different GW and SW schemes is shown in the chart given below.

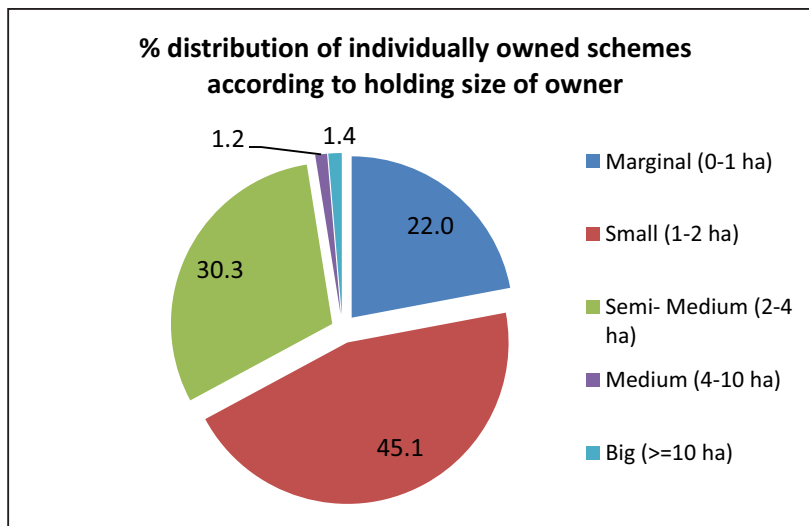


Ownership of MI schemes

Out of 2,480 MI schemes, majority of the schemes i.e. 78.1% (1,938) are individually owned, 11.9% (294) schemes are owned by group of farmers and 10.0% (248) schemes are public owned. Among 61 GW schemes, 50.8% (31) schemes are individually owned and among 2,419 SW schemes, 78.8% (1,907) are owned by individual farmers. Most of MI structures in Mizoram are owned by individual farmers or group of farmers as brought out in the figure given below. Individual farmers/group of farmers are getting maximum benefit from minor irrigation schemes.

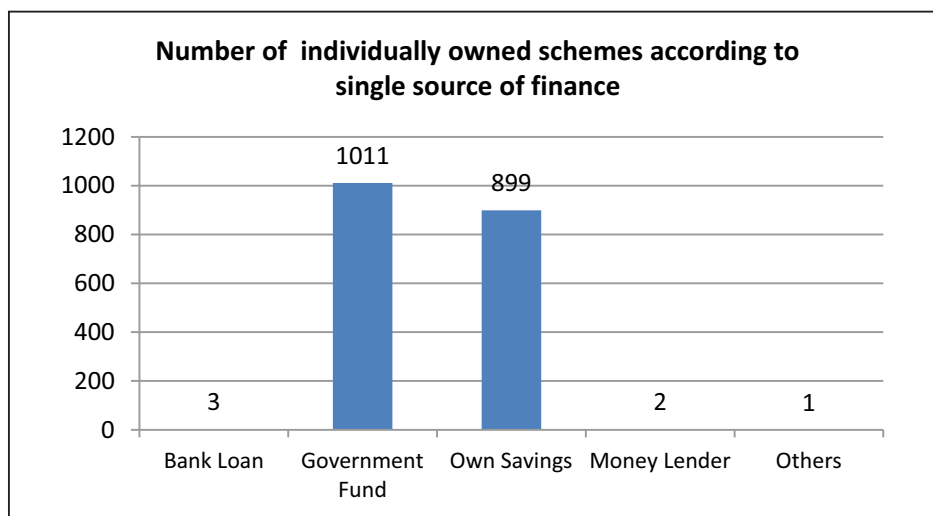


Out of the total 1,938 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 67.1% (1,301) in MI schemes. Rest of the 32.9% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



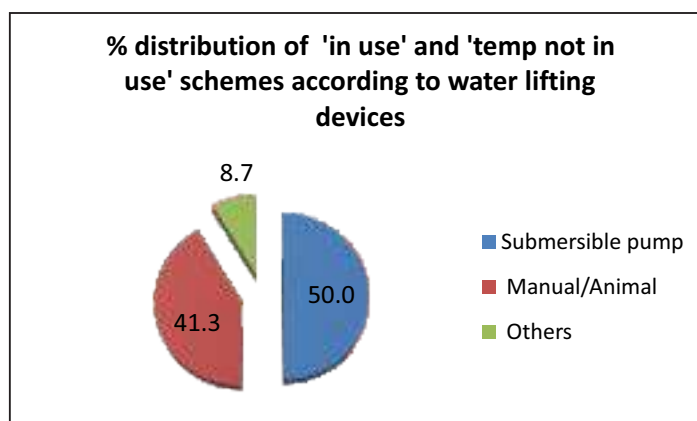
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 1,938 individually owned schemes, 98.9% (1,916) have single source of finance whereas 1.1% (22) have more than one source of finance. In these schemes with single source of finance (1,916), majority of schemes i.e. 52.8% (1,011) are being financed by Government funds whereas own savings is reported as the source of finance for 46.8% (899) schemes. Bank loans, money lenders and other source of finance are reported for remaining 0.3% (6) schemes. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



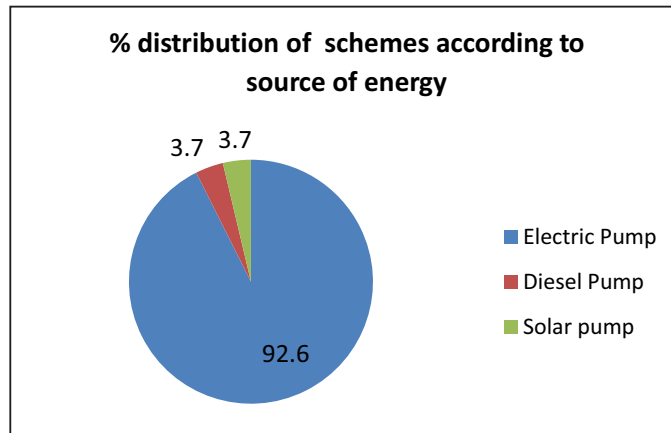
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 46, out of the total 2,480 MI schemes. Out of these (46) schemes, 50.0% (23) of schemes have submersible pump, 41.3% (19) schemes are being operated manually or by animal for water lifting purposes and 8.7% (4) schemes use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



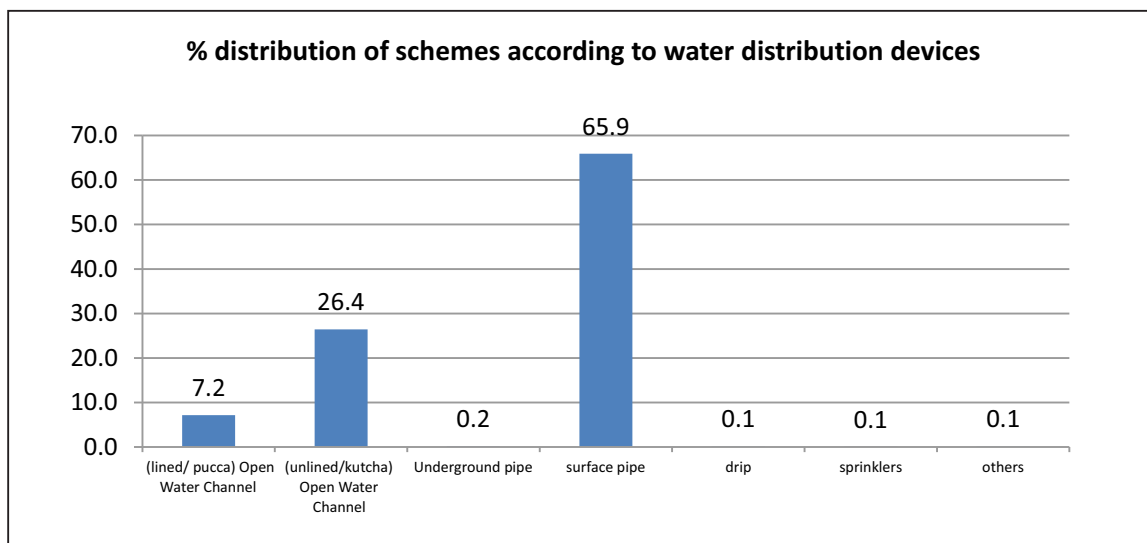
Distribution of source of energy

The information on 'source of energy' was collected for the schemes where lifting device is other than manual/ through animals. The number of such schemes is 27. Out of these (27) schemes, majority of schemes i.e 92.6% (25) schemes are using electricity as source of energy. Diesel pump is used in 3.7% (1) schemes and 3.7% (1) scheme is using solar pumps as sources of energy. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



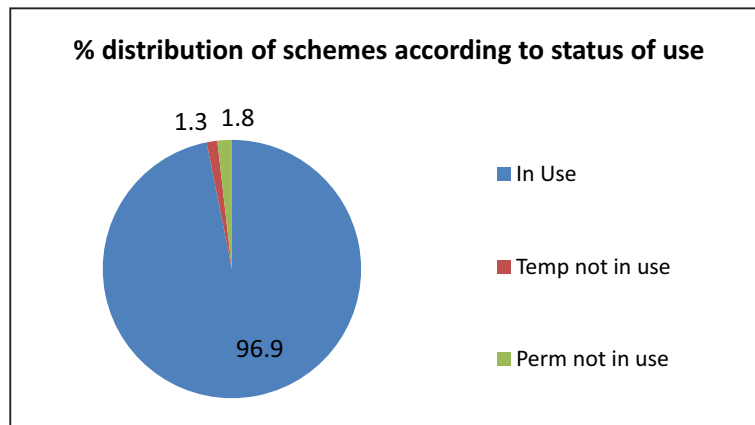
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipes is 65.9% (1,583) followed by 26.4% (635) open water channel (unlined/kutchra) and 7.2% (172) open water channel (lined/pucca). The water distribution devices used in the rest of the 0.5% (12) MI schemes are underground pipe, drip, sprinklers and other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

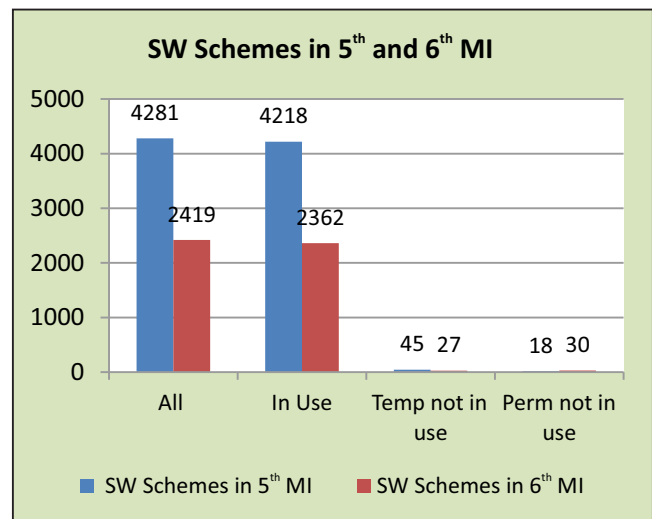
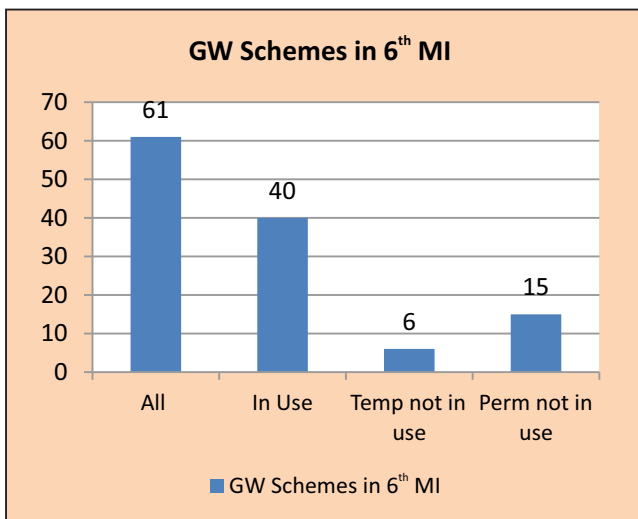


Status of MI schemes

Out of total number of 2,480 MI schemes, 96.9% (2,402) are 'in use', 1.3% (33) are 'temporarily not in use' and 1.8% (45) are 'permanently not in use' schemes which is depicted in the pie chart given below.

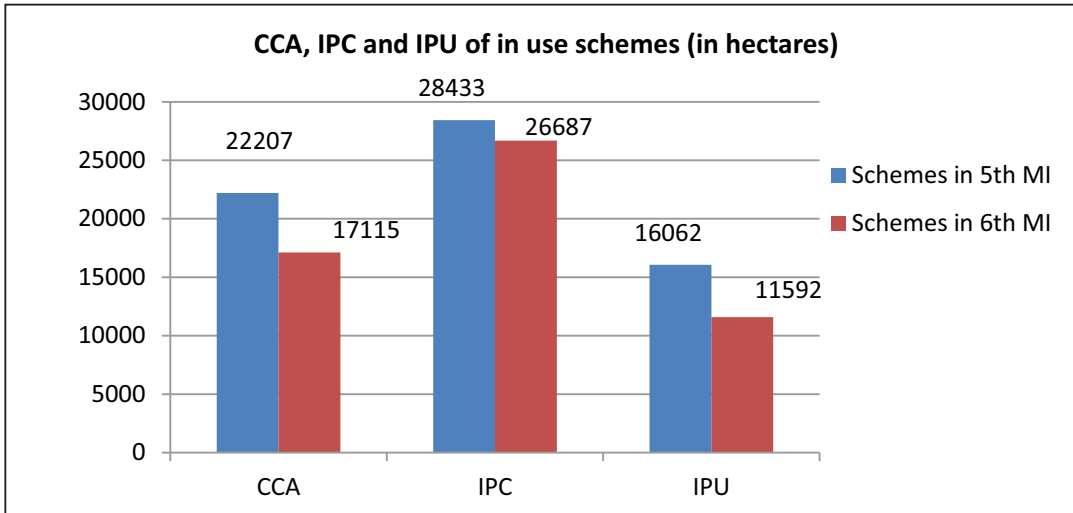


Out of 33 'temporarily not in use' schemes, 27 are SW schemes and 6 are GW schemes. Among 45 'permanently not in use' schemes, 30 are SW schemes and 15 are GW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

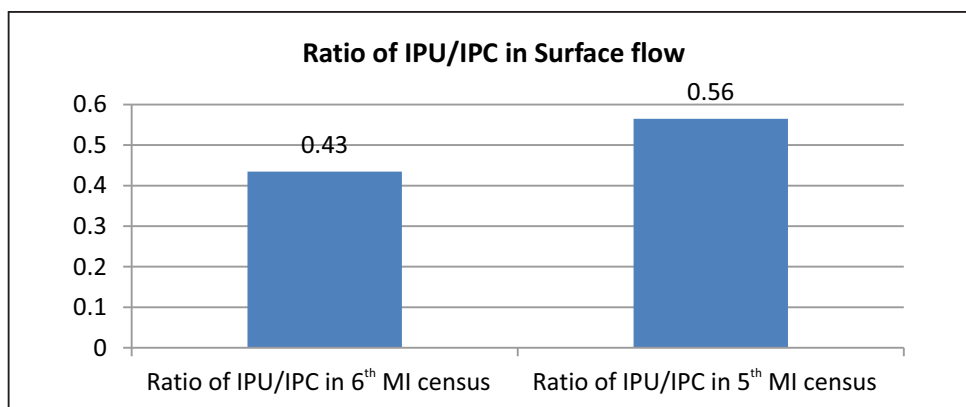
There has been decrease of 6.1% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has decreased from 28,433 hectares during 5th MI census to 26,687 hectares during 6th MI census. Irrigation potential utilized was 16,062 hectares during 5th MI Census in Mizoram, which has declined by 27.8% 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, 20 hectares irrigation potential is created through GW schemes and 26,667 hectares through SW schemes. Irrigation potential utilized is 0.8 hectares and 11,591 hectares for GW and SW schemes respectively. This shows that 3.9% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 43.5 %. The scheme-wise ratio of IPU to IPC in Mizoram is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Mizoram			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	19	0	0
Medium Tubewell	1.3	0.8	0.61
Surface flow	26,667	11,591	0.43

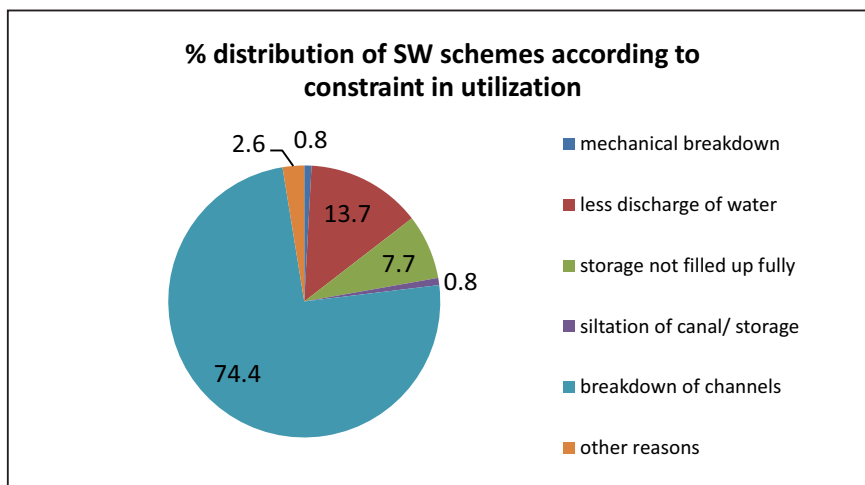
Surface flow schemes have the highest IPC & IPU. A comparative chart showing ratio of IPU/IPC of surface flow schemes in the 6th and 5th MI census is given below.



Under utilization of In Use schemes

It is observed in the previous rounds of MI censuses that many 'in use' schemes were underutilized due to various constraints. As per the 6th MI Census, 117 (4.9%) schemes out of 2,402 'in use' schemes in Mizoram are under-utilised due to several reasons. Remaining 95.1% 'in use' MI schemes are functioning without any constraints.

All the under-utilized schemes are SW schemes. The major factor contributing to constraints in utilization of these schemes is reported to be break-down of channels. The percentage distribution of reasons of under-utilization of SW schemes is shown in chart given below.



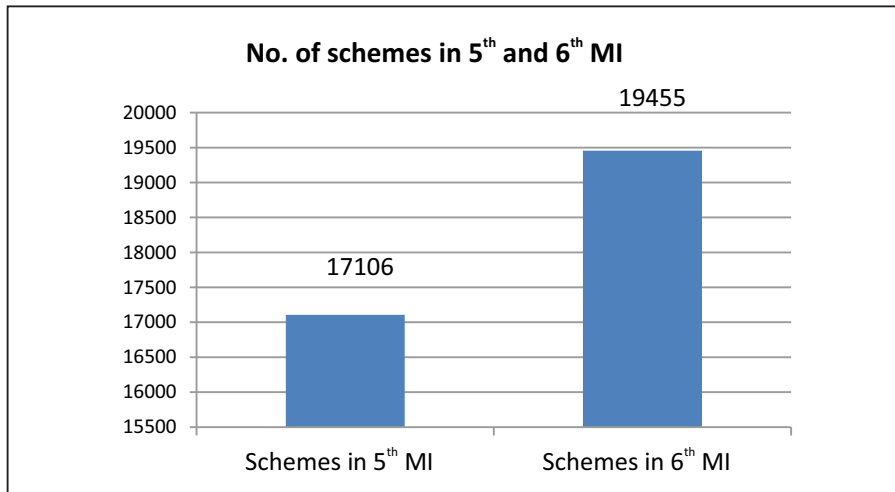
Key Parameters of 6 th MI Census-Mizoram						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	34			1.37
	Shallow Tubewell	No.	4			0.16
	Medium Tubewell	No.	23			0.93
	Deep Tubewells	No.	0			0.00
	Ground Water Schemes	No.	61			2.46
	Surface Flow	No.	2,419			97.54
	Surface Lift	No.	0			0.00
	Surface Water Schemes	No.	2,419			97.54
	Total Schemes	No.	2,480			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	20	17,096	17,116	
	IPC	Ha	20	26,667	26,687	
	IPU	Ha	1	11,591	11,592	
	IPC of in use schemes	Ha	19	22,579	22,598	
	IPU of in use schemes	Ha	1	11,035	11,036	
	% Ratio of IPU wrt IPC	%	5.00	43.47	43.44	
	Gap in IPC and IPU	Ha	19	15,076	15,095	
Ownership	Individual ownership	No.	31	1,907	1,938	78.15
	Group of Farmers	No.	0	294	294	11.85
	Public owned	No.	30	218	248	10.00
	Total	No.	61	2,419	2,480	100.00
Social Status of Individual Owner	SC	No.	1	42	43	2.22
	ST	No.	30	1,864	1,894	97.73
	OBC	No.	0	1	1	0.05
	Others	No.	0	0	0	0.00
	Total Individual	No.	31	1,907	1,938	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	0	172	172	7.16

Key Parameters of 6th MI Census-Mizoram

Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutchra)	No.	26	609	635	26.44
	Underground pipe	No.	2	2	4	0.17
	Surface Pipe	No.	10	1,573	1,583	65.90
	Drip	No.	0	3	3	0.12
	Sprinklers	No.	0	2	2	0.08
	Others	No.	2	1	3	0.12
	Total	No.	40	2,362	2,402	100.00

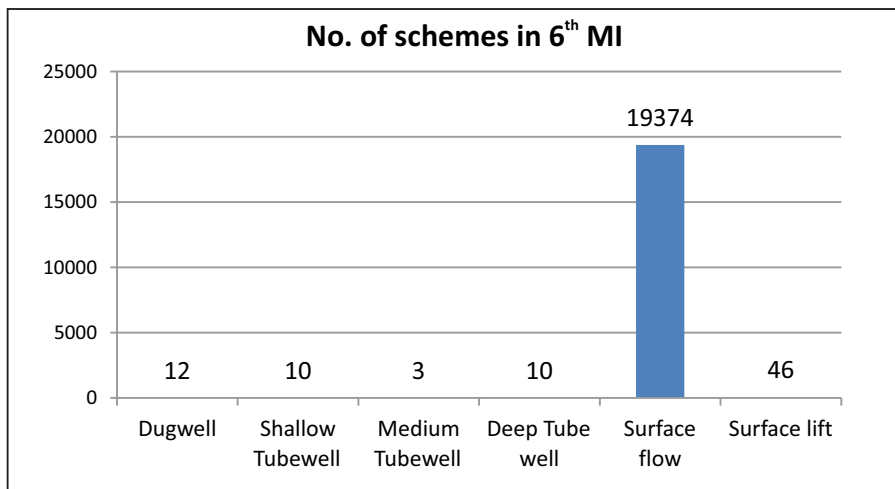
NAGALAND

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Nagaland has 19,455 MI schemes comprising of 0.2% (35) Ground Water (GW) schemes and 99.8% (19,420) Surface Water (SW) schemes. There has been an increase to the tune of 13.7% in 6th MI census as compared to the 17,106 schemes in 5th MI census in the State of Nagaland.



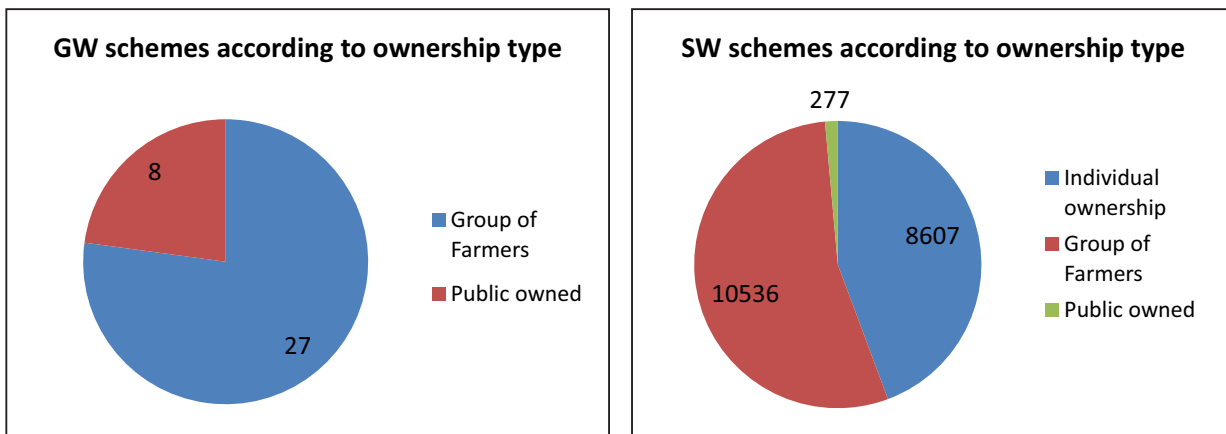
The State Government has reported a decline of 12.5% (5) in GW schemes and an increase of 13.8% (2,354) in SW schemes during 6th MI census as compared to the 40 GW schemes and 17,066 SW schemes recorded in 5th census.

Out of the 19,455 MI schemes reported in Nagaland, majority, i.e. 99.6% (19,374) are surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.

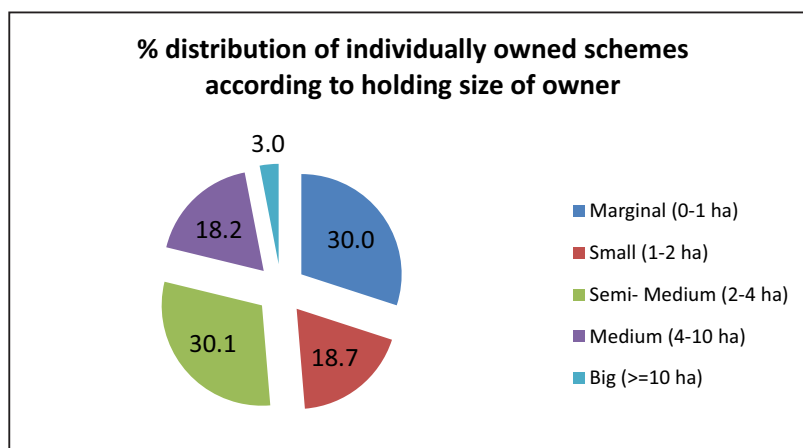


Ownership of MI schemes

Out of 19,455 MI schemes, majority of the schemes i.e. 54.3% (10,563) are owned by group of farmers, 44.2% (8,607) schemes are owned by individual farmers and a small chunk of 1.5% (285) schemes are public owned. Among 35 GW schemes, 77.1% (27) schemes are owned by group of farmers whereas among 19,420 SW schemes, 54.2% (10,536) are owned by group of farmers. This shows that individual farmers/group of farmers are getting maximum benefit from minor irrigation schemes.



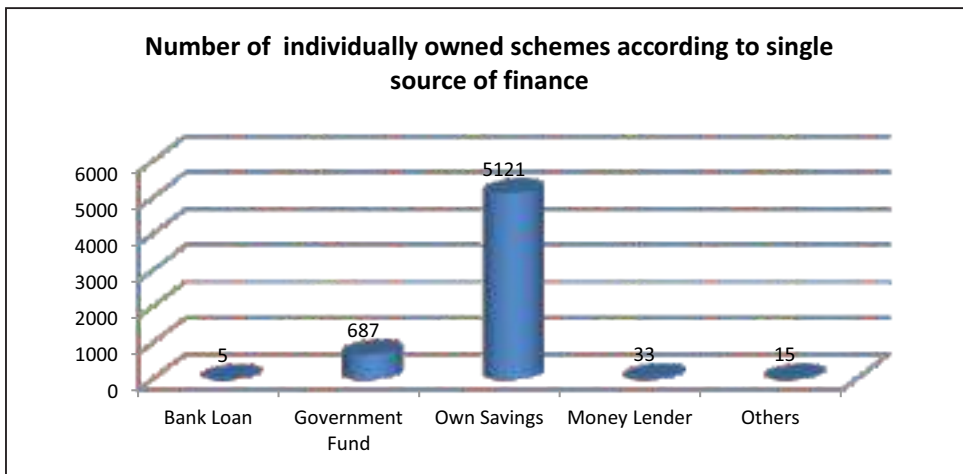
Out of the 8,607 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a share of 48.7 % (4,190) in MI schemes. Rest of the 51.3% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the chart given below.



Financing of MI schemes

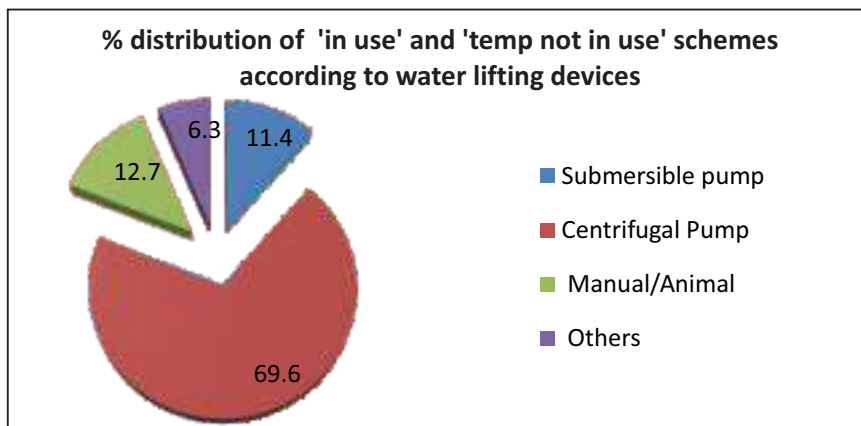
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 8,607 individually owned schemes, 68.1% (5,861) have single source of finance whereas 31.9% (2,746) have more than one source of finance. In these schemes with single source of finance (5,861), majority of

schemes i.e. 87.4% (5,121) are being financed by own savings of individual farmer. Other reported sources of finance are Government fund 11.6% (687), money lenders 0.6% (33), bank loan 0.1% (5) and others 0.3% (15). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



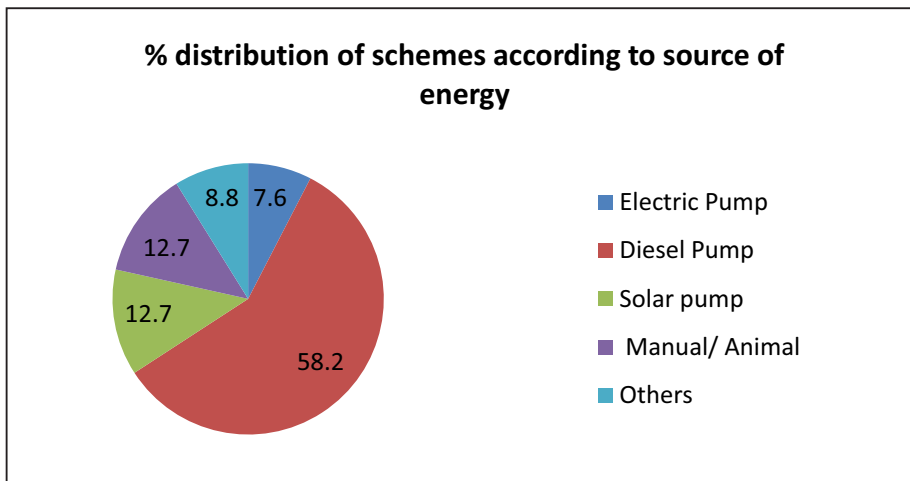
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 79, out of 19,455 MI schemes. Out of these (79) schemes, majority of schemes i.e 69.6% (55) have centrifugal pump, 12.7% (10) schemes have manual/animal as lifting device, 11.4% (9) schemes are being operated by submersible pump for water lifting purposes and rest 6.3% (5) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



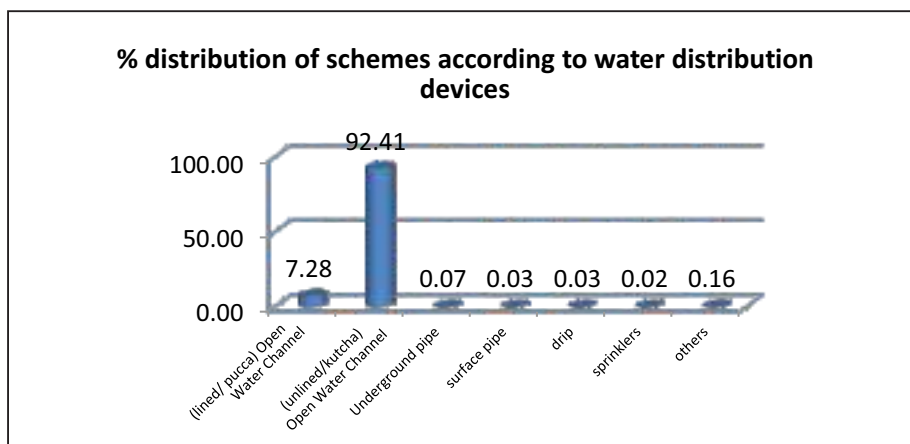
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 79. Out of these schemes, majority of schemes i.e 58.2% (46) schemes are using diesel pump as source of energy followed by solar pump in 12.7% (10) schemes and manual/animal sources in 12.7% (10). In rest of the cases, 7.6% (6) schemes are using electricity and 8.8% (7) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



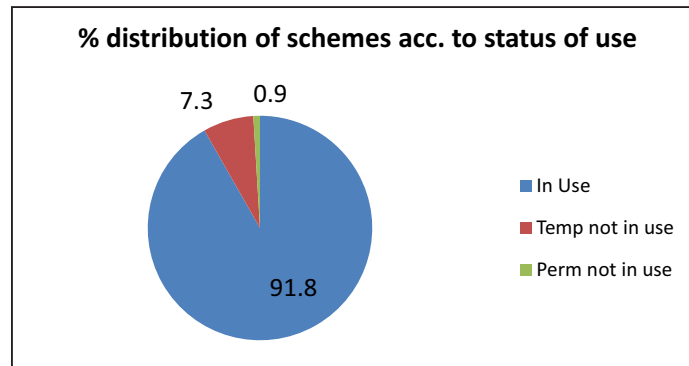
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 92.41% (16,498) followed by 7.28% (1,300) open water channel (lined/pucca) and 0.07% (12) underground pipe. The water distribution devices used in the rest of the MI schemes are 0.03% (6) Drip, 0.03% (5) surface pipe, 0.02% (3) sprinklers and 0.16% (28) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

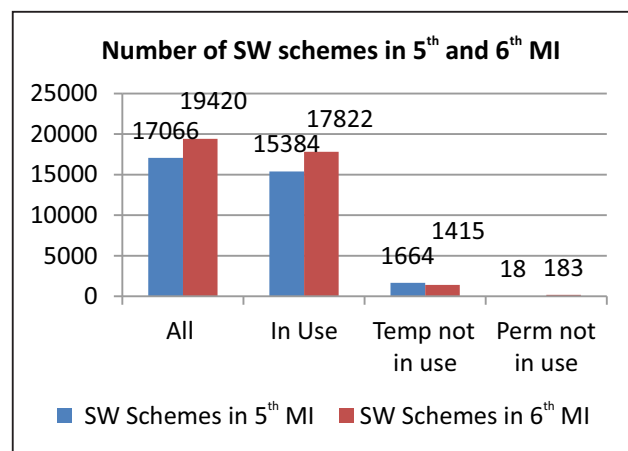
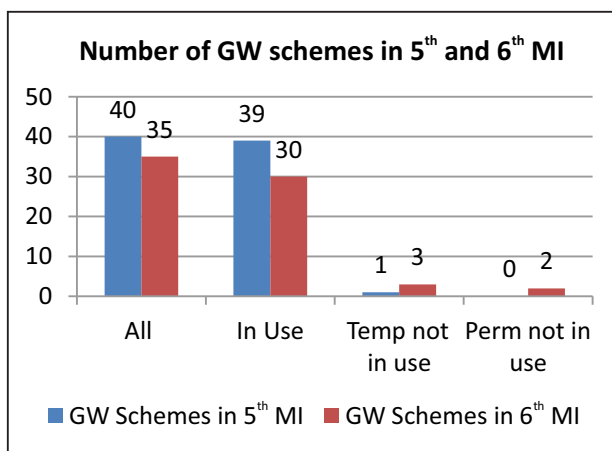


Status of MI schemes

Out of total number of 19,455 MI schemes, 91.8%(17,852) are 'in use', 7.3% (1,418) are 'temporarily not in use' and only 0.9 % (185) are 'permanently not in use' schemes which is depicted in the pie chart given below.

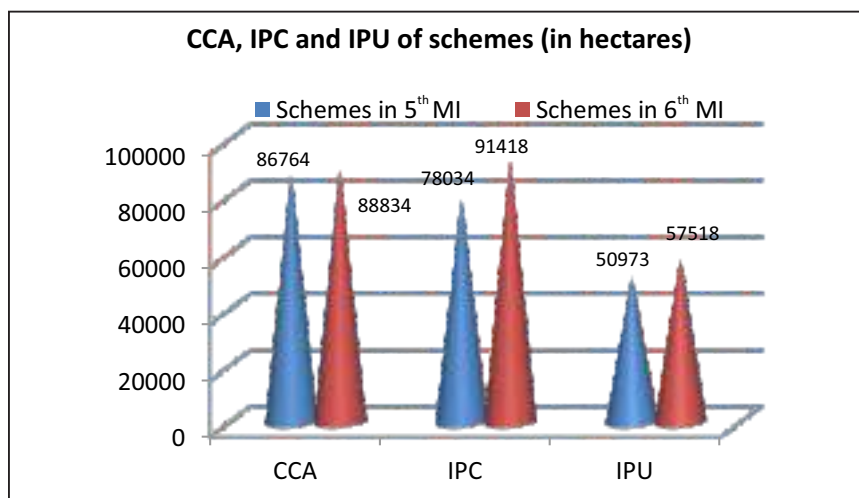


Out of 1,418 'temporarily not in use' schemes, 3 are GW schemes and 1,415 are SW schemes. Among 185 'permanently not in use' schemes, 2 are GW schemes and 183 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

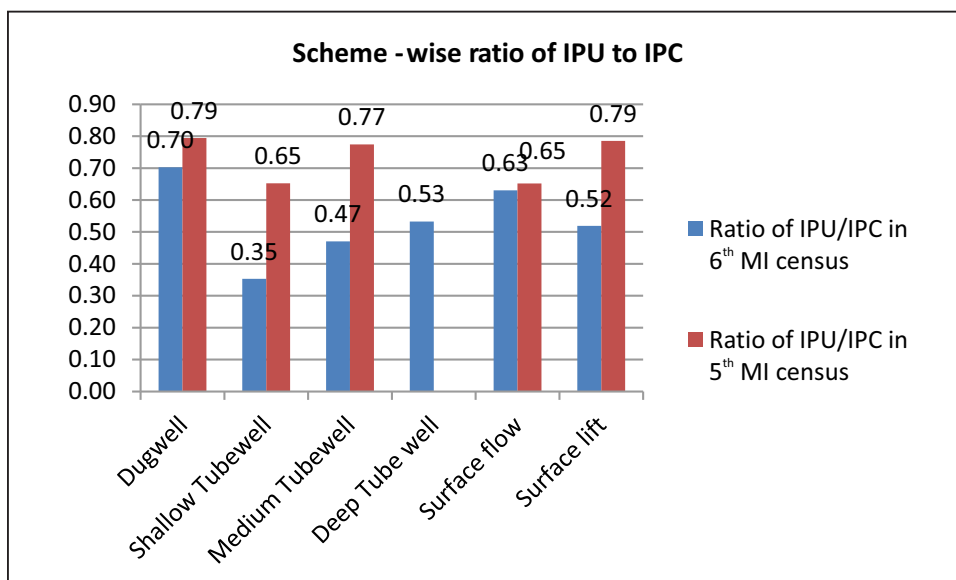
There has been an increase of 17.2% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 78,034 hectares during 5th MI census to 91,418 hectares during 6th MI census. Irrigation potential utilized was 50,973 hectares during 5th MI Census in Nagaland, which has increased by 12.8% 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, 244 hectares irrigation potential is created through GW schemes and 91,174 hectares through SW schemes. Irrigation potential utilized is 125 and 57,393 hectares for GW and SW schemes, respectively. This shows that 51.2 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 62.9%. The scheme-wise ratio of IPU to IPC in Nagaland is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	37	26	0.70
Shallow Tubewell	51	18	0.35
Medium Tubewell	34	16	0.47
Deep Tube well	122	65	0.53
Surface flow	90,644	57,118	0.63
Surface lift	530.2	275.2	0.52

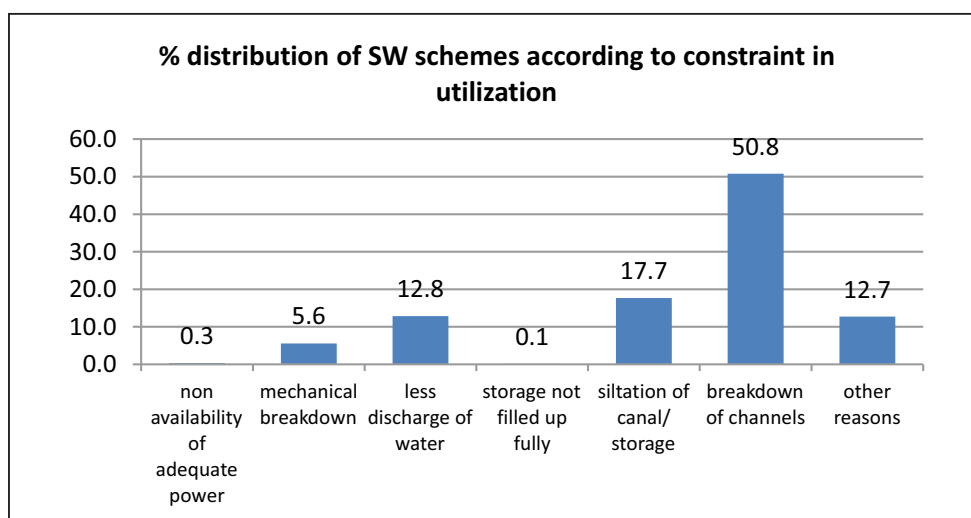
Surface flow schemes have the highest IPC & IPU followed by surface lift schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 50% utilization of the potential created except shallow and medium tubewell scheme with a utilization of 35% and 47% respectively. 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 underutilized due to various constraints. As per the 6th MI Census, 3.8% (685) schemes out of 17,852 'in use' schemes in Nagaland are underutilized due to several reasons. Remaining 96.2% 'in use' MI schemes are functioning without any constraints.

Among 685 under-utilized schemes, all schemes are SW schemes. The major factor contributing to constraints in utilization of SW schemes are break-down of channels, siltation of canal/ storage, 'less discharge of water', mechanical breakdown, non-availability of adequate power and other reasons. The percentage distribution of reasons of under-utilization of SW schemes is shown in graph given below.



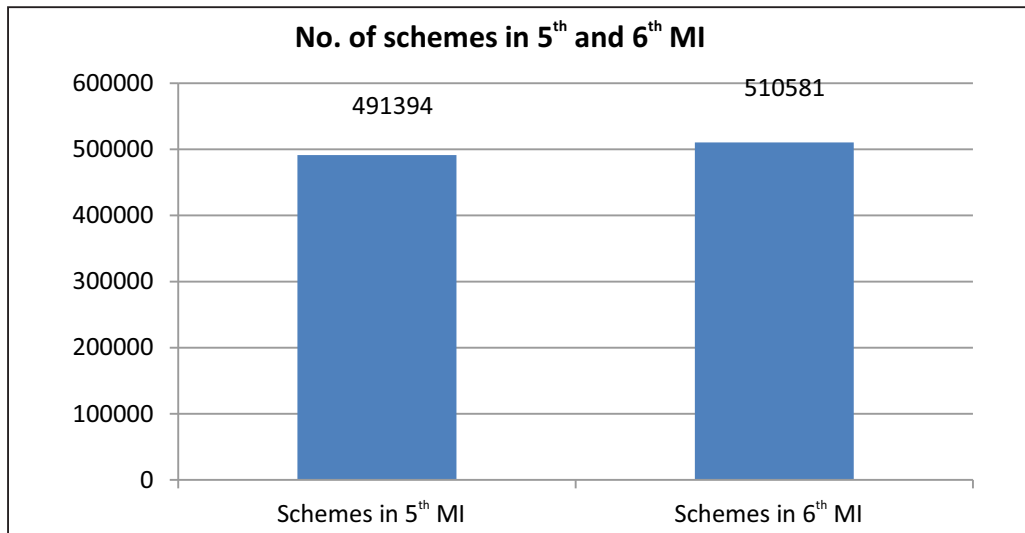
Key Parameters of 6 th MI Census-Nagaland						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	12			0.06
	Shallow Tubewell	No.	10			0.05
	Medium Tubewell	No.	3			0.02
	Deep Tubewells	No.	10			0.05
	Ground Water schemes	No.	35			0.18
	Surface Flow	No.	19,374			99.58
	Surface Lift	No.	46			0.24
	Surface Water schemes	No.	19,420			99.82
	Total schemes	No.	19,455			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	217	88,617	88,834	
	IPC	Ha	244	91,174	91,418	
	IPU	Ha	125	57,393	57,518	
	IPC of in use schemes	Ha	214	83,721	83,935	
	IPU of in use schemes	Ha	121	56,390	56,511	
	% Ratio of IPU wrt IPC	%	51.23	62.95	62.92	
	Gap in IPC and IPU	Ha	119	33,781	33,900	
Ownership	Individual ownership	No.	0	8,607	8,607	44.24
	Group of Farmers	No.	27	10,536	10,563	54.29
	Public owned	No.	8	277	285	1.46
	Total	No.	35	19,420	19,455	100.00
Social Status of Individual Owner	SC	No.	0	37	37	0.43
	ST	No.	0	8,569	8,569	99.56
	OBC	No.	0	1	1	0.01
	Others	No.	0	0	0	0.00
	Total Individual	No.	0	8,607	8,607	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	6	1,294	1,300	7.28

Key Parameters of 6th MI Census-Nagaland

Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutcha)	No.	3	16,495	16,498	92.42
	Underground pipe	No.	0	12	12	0.07
	Surface Pipe	No.	0	5	5	0.03
	Drip	No.	0	6	6	0.03
	Sprinklers	No.	0	3	3	0.02
	Others	No.	21	7	28	0.16
	Total	No.	30	17,822	17,852	100.00

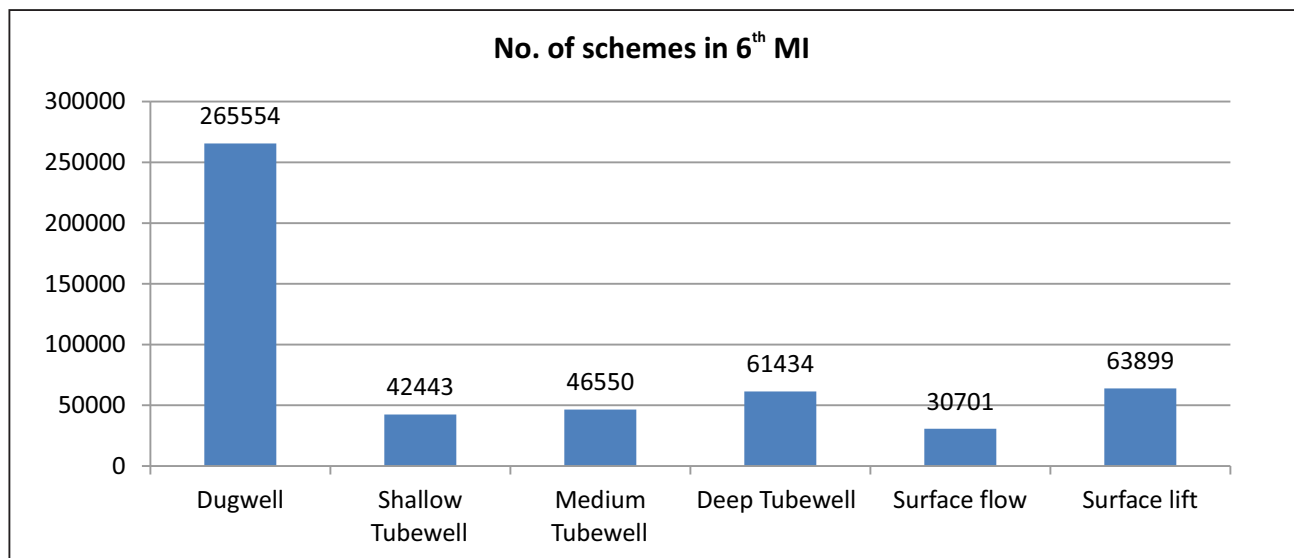
ODISHA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Odisha has 5,10,581 MI schemes comprising of 81.5% (4,15,981) Ground Water (GW) schemes and 18.5% (94,600) Surface Water (SW) schemes. There has been increase to the tune of 3.9% in 6th MI census as compared to the 4,91,394 schemes in 5th MI census in the State Odisha.



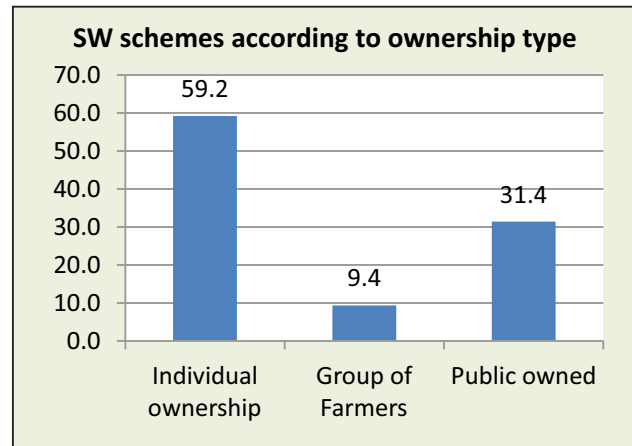
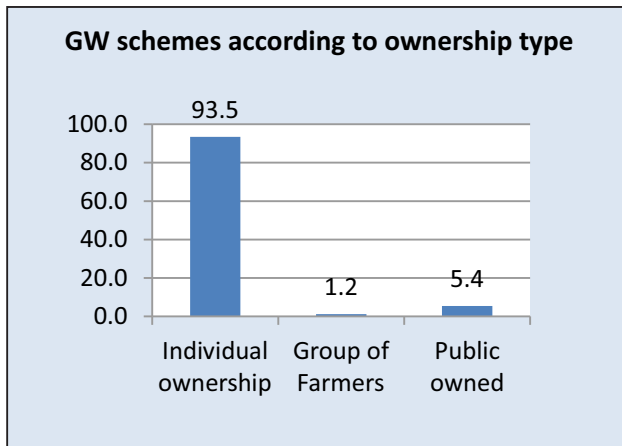
The State has reported an increase of 1.7% (6,941) in GW schemes and 14.9% (12,246) in SW schemes during 6th MI census as compared to the 4,09,040 GW schemes and 82,354 SW schemes recorded in 5th census.

Out of the 5,10,581 MI schemes reported in the State of Odisha, 52% (2,65,554) are dugwell schemes followed by 12.5% (63,899) surface lift schemes. There are 6% (30,701) surface flow, 9.1% (46,550) medium tubewell, 8.3% (42,443) shallow tubewell and 12.1% (61,434) deep tubewell schemes in Odisha. Distribution of different GW and SW schemes is shown in the chart given below.

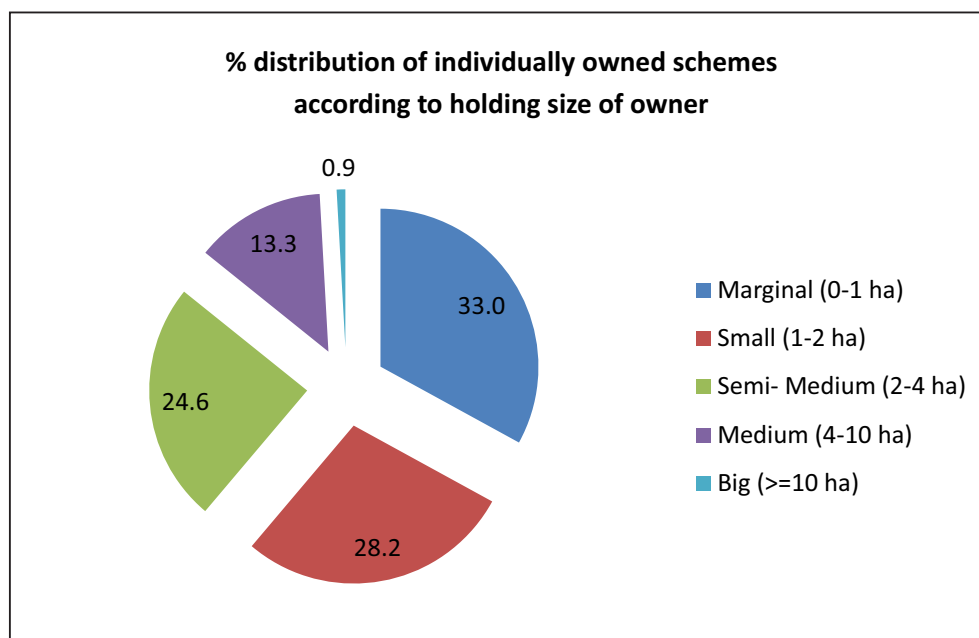


Ownership of MI schemes

Out of 5,10,581 MI schemes, majority of the schemes i.e. 87.1% (4,44,793) are under individual ownership, 10.2% (52,140) schemes are public owned and 2.7% (13,648) schemes are with group of farmers. Among 4,15,981 GW schemes, 93.4% (3,88,775) schemes are under individual ownership and among 94,600 SW schemes 59.2% (56,018) are under by individual ownership as shown in the figures given below.

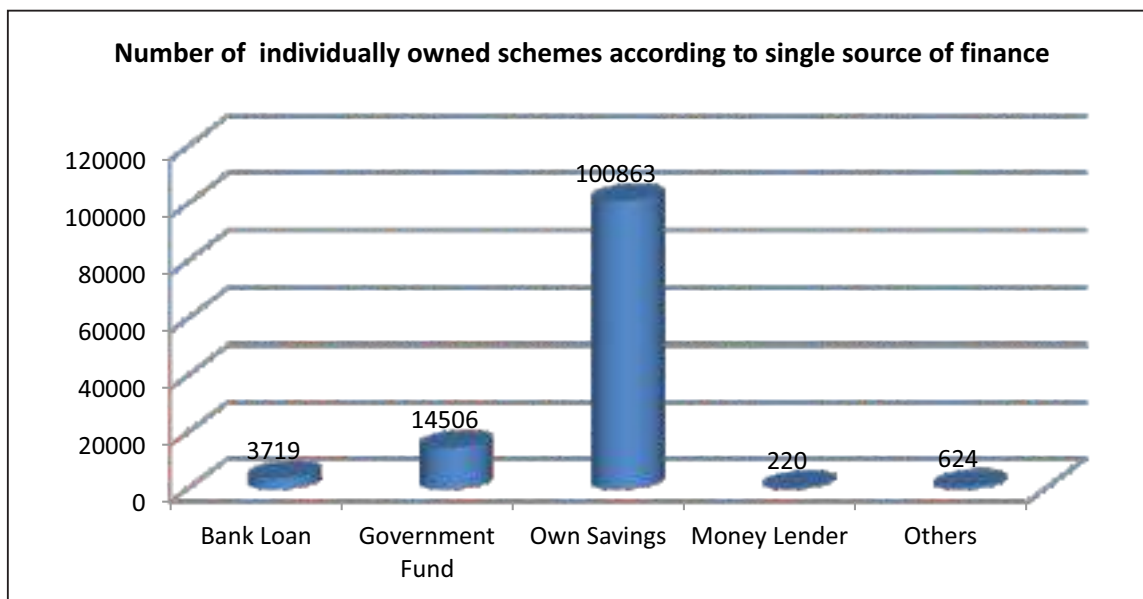


Out of 4,44,793 individually owned schemes, based on holding size of owner, marginal and small farmers (holding size below two hectares) own a major share of 61.2% (2,72,099) in MI schemes. Rest of the 38.8% schemes are owned by semi-medium, medium and big farmers which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial role of improving the livelihood of small and marginal farmers.



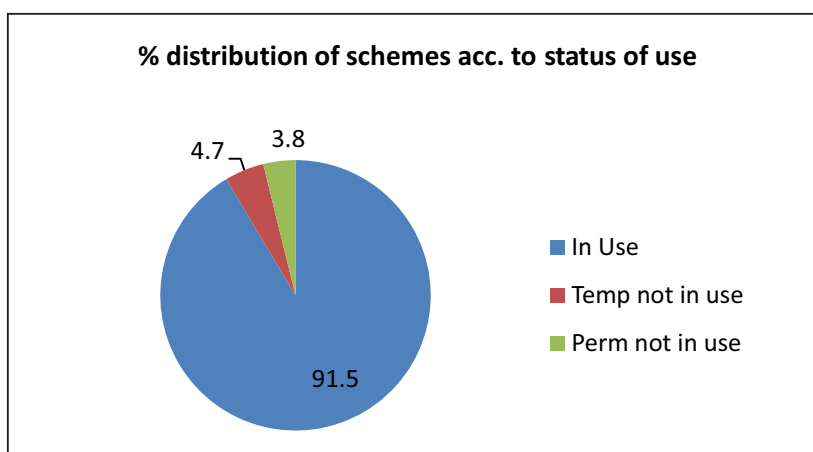
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 4,44,793 individually owned schemes, 27.0% (1,19,932) have single source of finance whereas 73.0% (3,24,861) have more than one source of finance. In these schemes with single source of finance (1,19,932), majority of schemes i.e. 84.1% (1,00,863) are being financed by own savings of individual farmer. Other reported sources of finance are Bank Loan 3.1% (3,719), Government fund 12.1% (14,506), money lender 0.1% (220) and others 0.5% (624). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.

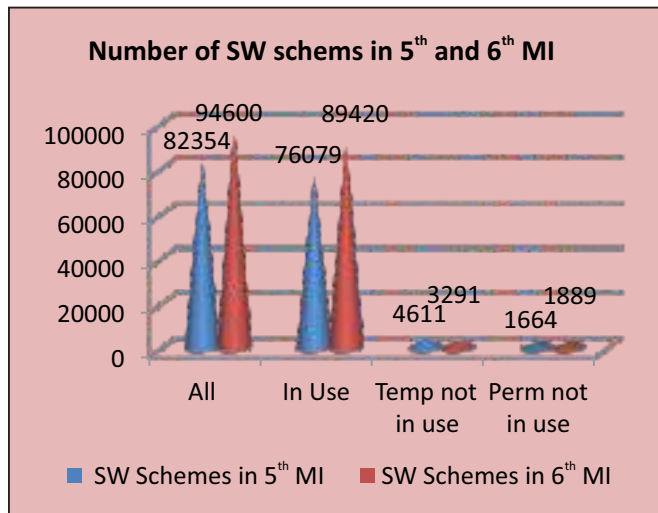
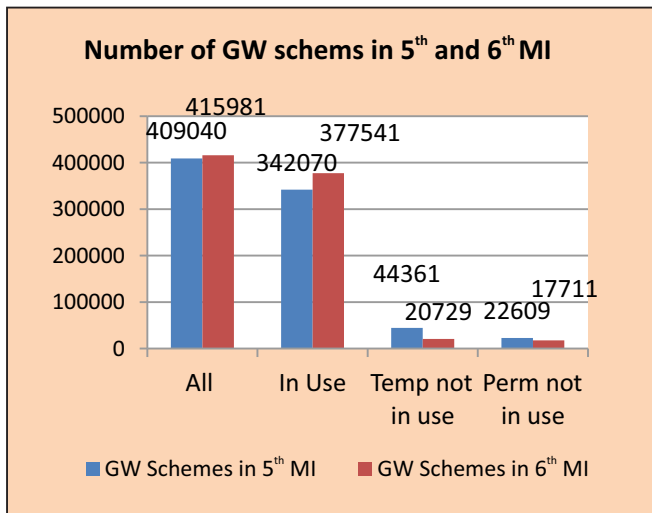


Status of MI schemes

Out of 5,10,581 MI schemes, 91.5% (4,66,961) are 'in use', 4.7% (24,020) are 'temporary not in use' and only 3.8% (19,600) are 'permanently not in use' schemes which is depicted in the pie chart given below.

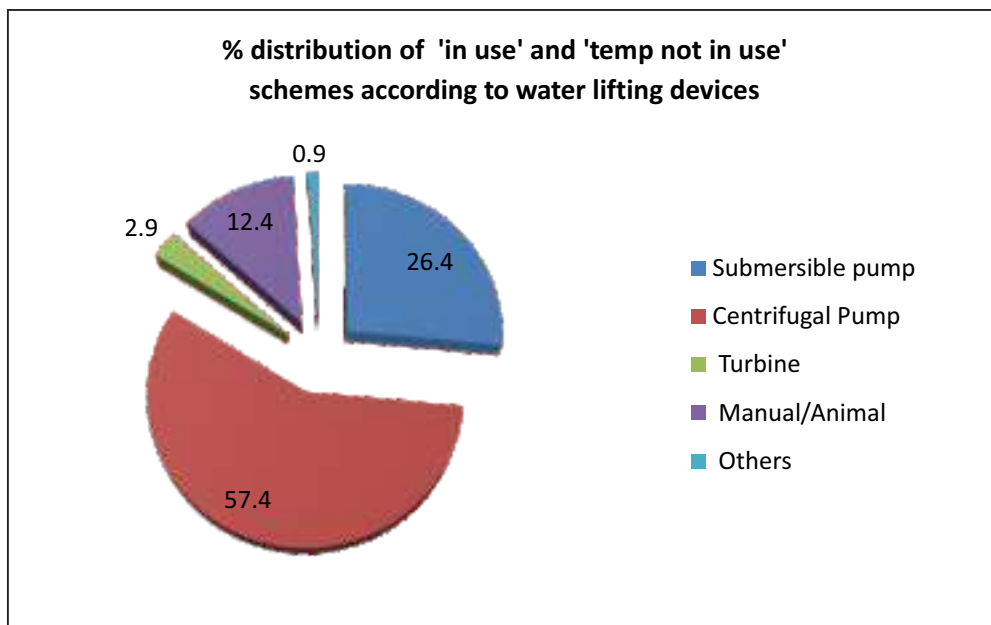


Out of 24,020 'temporary not in use' schemes, 20,729 are GW schemes and 3,291 are SW schemes. Among 19,600 'permanently not in use' schemes, 17,711 are GW schemes and 1,889 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



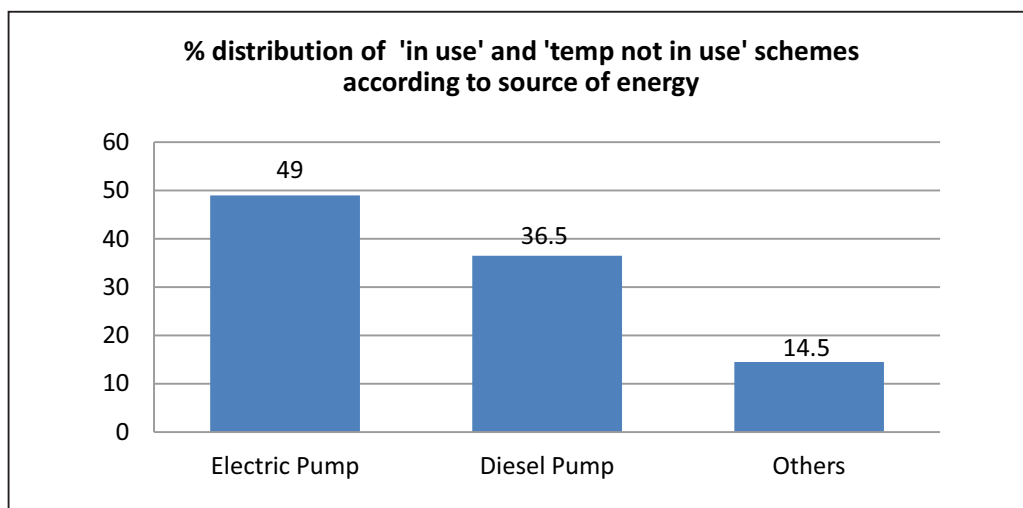
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 4,61,116, out of 5,10,581 MI schemes. Out of these (4,61,116) schemes, majority of schemes i.e. 57.4% (2,64,553) have centrifugal pump, 26.4% (1,22,085) are operated with submersible pump, 12.4% (57,160) with manual or animal lifting devices, 2.9% (13,225) schemes have turbines as lifting devices and rest 0.9% (4,093) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



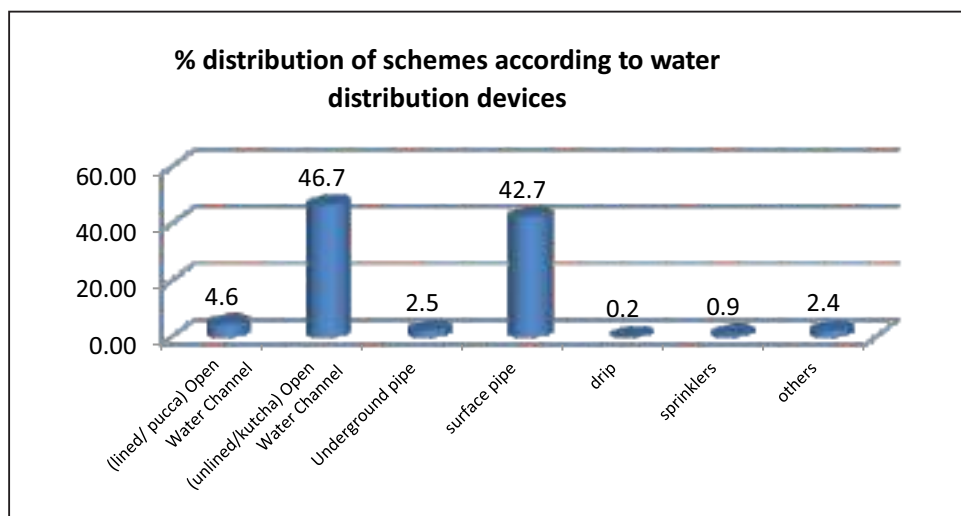
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 4,61,116. Out of these (4,61,116) schemes, majority of schemes i.e 49.0% (2,25,986) schemes are using electric pumps as source of energy followed by diesel pump in 36.5% (1,68,423) schemes whereas remaining 14.5% (66,707) use energy generated through manual/animal, wind mills, solar pump and other devices. The percentage distribution of schemes according to source of energy is shown in the chart given below.



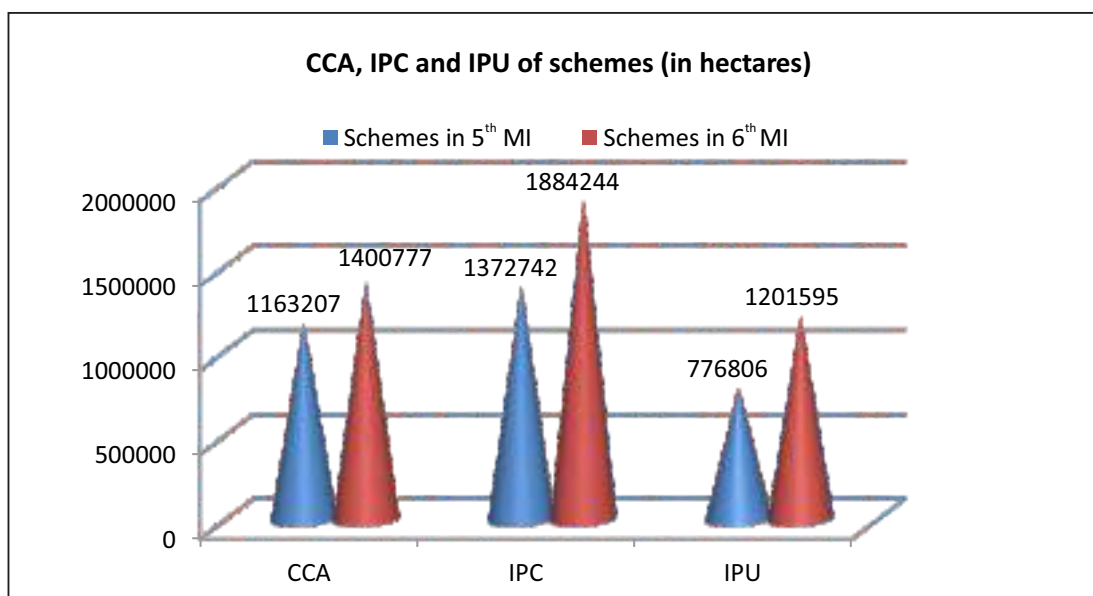
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 46.7% (2,18,084) followed by 42.7% (1,99,333) through surface pipe. The water distribution devices used in the rest of the MI schemes are 4.6% (21,440) open water channel (lined/pucca), 2.5% (11,606) underground pipes, 0.9% (4,108) sprinklers, 0.2% (1,213) Drip and 2.4% (11,177) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



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

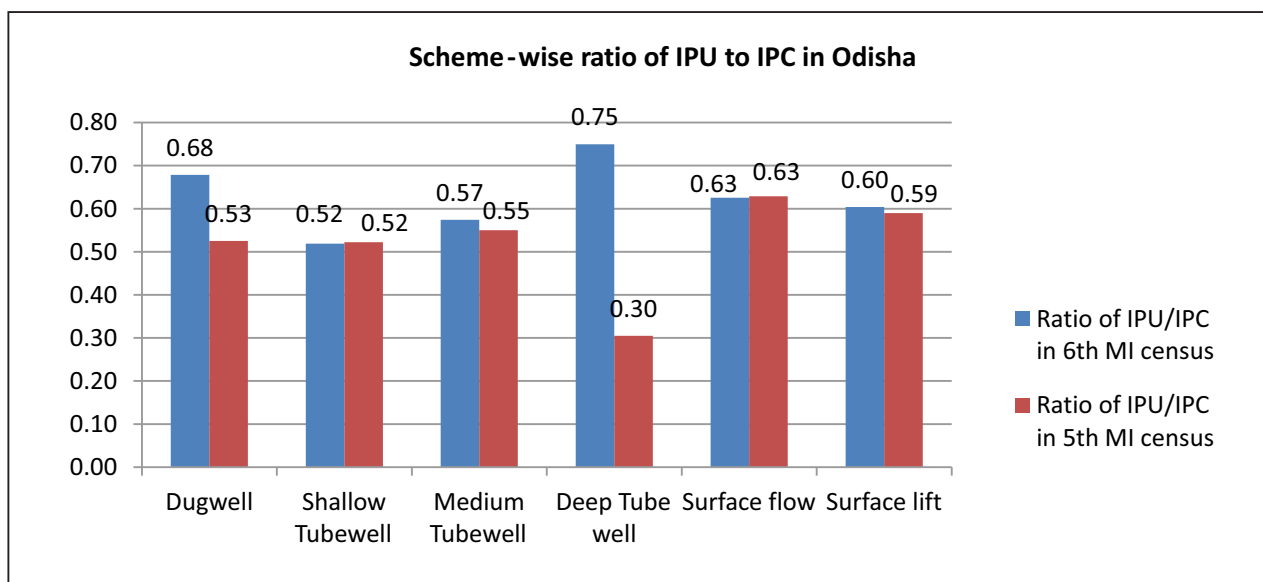
There has been an increase of 37.3% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has increased from 13,72,742 hectares during 5th MI census to 18,84,244 hectares during 6th MI census. Irrigation potential utilized was 7,76,806 hectares during 5th MI Census in Odisha, which has increased by 54.7% (12,01,595 hectares) 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, 9,36,235 hectares irrigation potential is created through GW schemes and 9,48,010 hectares through SW schemes. Irrigation potential utilized is 6,17,213 hectares and 5,84,382 hectares for GW and SW schemes respectively. This shows that 65.9 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 61.6%. The scheme-wise ratio of IPU to IPC in Odisha is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Odisha			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	3,13,299	2,12,604	0.68
Shallow Tubewell	1,29,063	66,945	0.52
Medium Tubewell	1,85,042	1,06,220	0.57
Deep Tube well	3,08,829	2,31,443	0.75
Surface flow	5,55,295	3,47,249	0.63
Surface lift	3,92,714	2,37,132	0.60

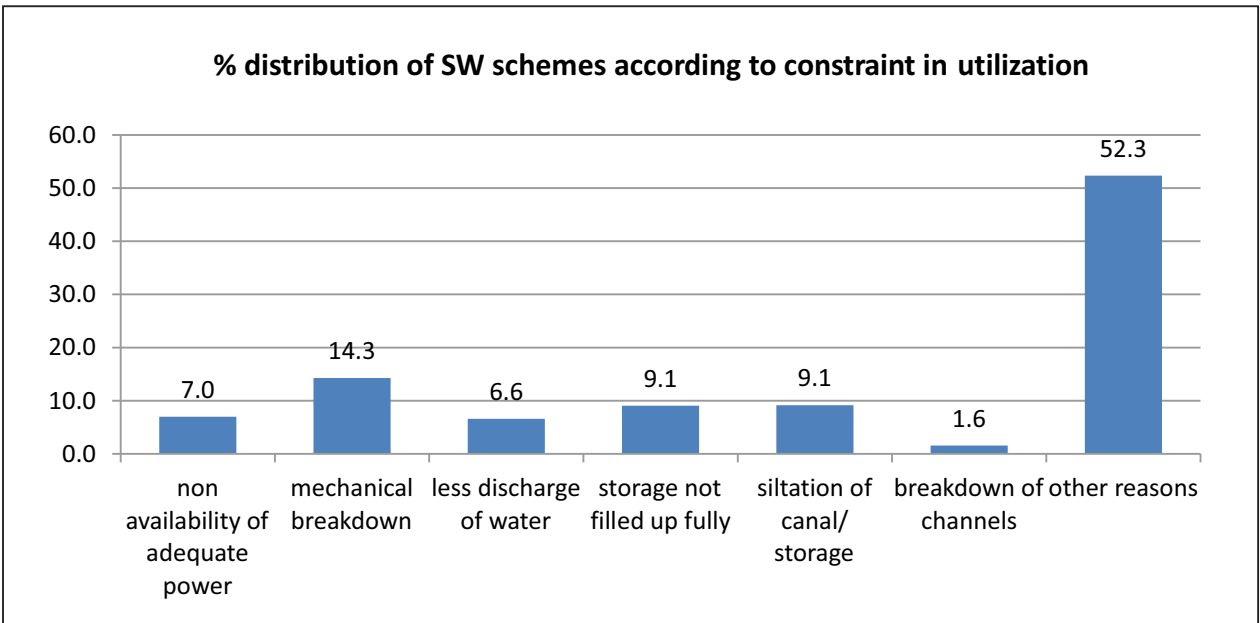
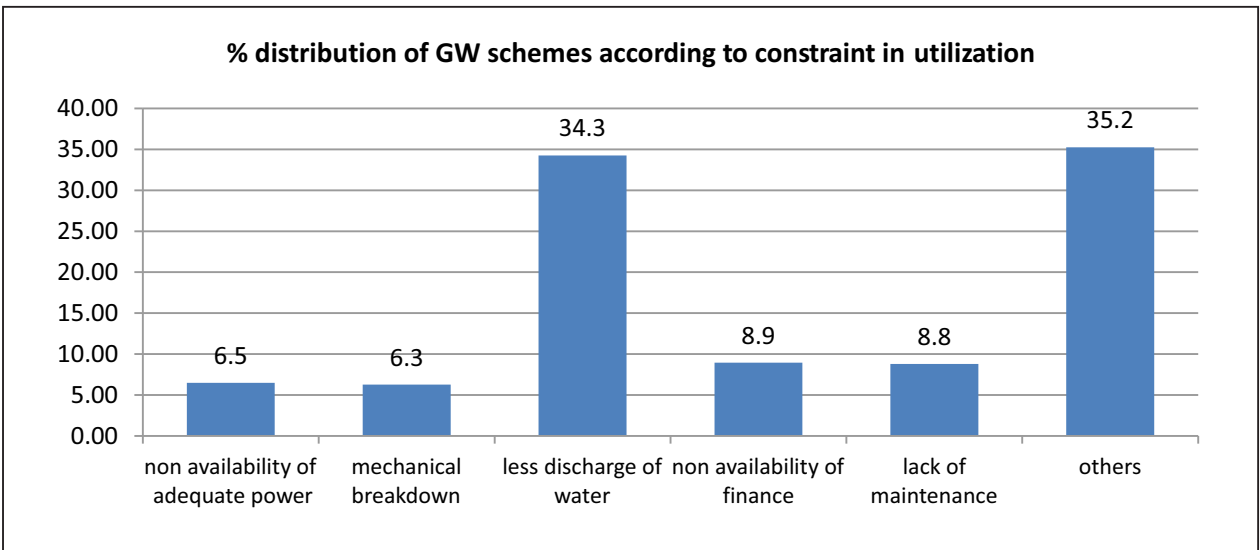
Surface flow schemes have the highest IPC & IPU followed by surface lift schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 50% utilization of the potential created. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 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 underutilized due to various constraints. As per the 6th MI Census, 1,41,735 (30.4%) schemes out of 4,66,961 'in use' schemes in Odisha are under-utilised due to several reasons. Remaining 69.4% 'in use' MI schemes are functioning without any constraints.

Among 1,41,735 under-utilized schemes, 1,167,31 are GW schemes and 25,004 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in the pie charts given below.



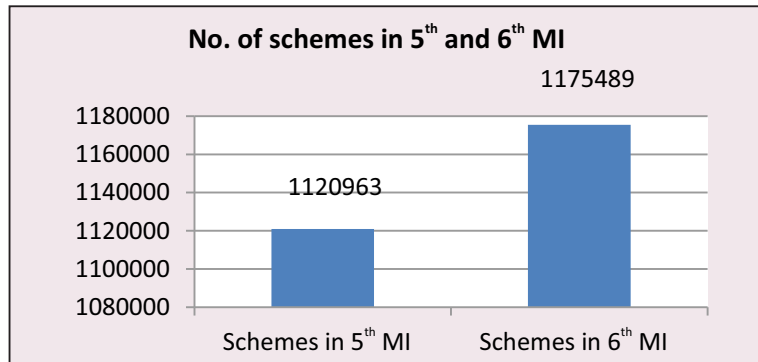
Key Parameters of 6 th MI Census-Odisha						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	2,65,554			52.01
	Shallow Tubewell	No.	42,443			8.31
	Medium Tubewell	No.	46,550			9.12
	Deep Tubewells	No.	61,434			12.03
	Ground Water schemes	No.	4,15,981			81.47
	Surface Flow	No.	30,701			6.01
	Surface Lift	No.	63,899			12.51
	Surface Water schemes	No.	94,600			18.53
	Total schemes	No.	5,10,581			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	6,68,351	7,32,426	14,00,777	
	IPC	Ha	9,36,235	9,48,010	18,84,244	
	IPU	Ha	6,17,213	5,84,382	12,01,595	
	IPC of in use schemes	Ha	8,78,273	8,80,177	17,58,451	
	IPU of in use schemes	Ha	6,09,169	5,75,220	11,84,389	
	% Ratio of IPU wrt IPC	%	65.93	61.64	63.77	
	Gap in IPC and IPU	Ha	3,19,022	3,63,628	6,82,649	
Ownership	Individual ownership	No.	3,88,775	56,018	4,44,793	87.12
	Group of Farmers	No.	4,787	8,861	13,648	2.67
	Public owned	No.	22,419	29,721	52,140	10.21
	Total	No.	4,15,981	94,600	5,10,581	100.00
Social Status of Individual Owner	SC	No.	50,134	7,837	57,971	13.03
	ST	No.	86,438	15,376	1,01,814	22.89
	OBC	No.	1,77,348	21,277	1,98,625	44.66
	Others	No.	74,855	11,528	86,383	19.42
	Total Individual	No.	3,88,775	56,018	4,44,793	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	15,156	6,284	21,440	4.59

Key Parameters of 6th MI Census-Odisha

Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutcha)	No.	1,74,413	43,671	2,18,084	46.70
	Underground pipe	No.	8,019	3,587	11,606	2.49
	Surface Pipe	No.	1,65,710	33,623	1,99,333	42.69
	Drip	No.	1,088	125	1,213	0.26
	Sprinklers	No.	3,560	548	4,108	0.88
	Others	No.	9,595	1,582	11,177	2.39
	Total	No.	3,77,541	89,420	4,66,961	100.00

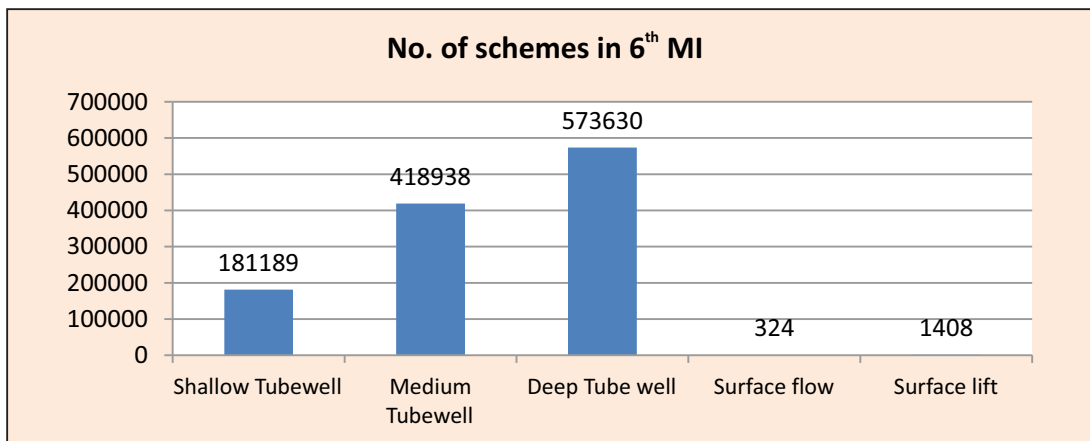
PUNJAB

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Punjab has 11,75,489 MI schemes comprising of 99.9% (11,73,757) Ground Water (GW) schemes and 0.1% (1,732) Surface Water (SW) schemes. There has been an increase to the tune of 4.9% in 6th MI census as compared to the 11,20,963 schemes in 5th MI census in the State of Punjab.



The State Government has reported an increase of 4.9% (54,990) in Ground Water schemes and decline of 21.1% (464) in Surface Water schemes during 6th MI census as compared to the 11,18,767 GW schemes and 2,196 SW schemes recorded in 5th MI census. During 6th MI Census, the share of Ground Water and Surface Water Schemes in the State of Punjab has almost remained at the same level as in 5th Minor Irrigation Census as there were 99.8% GW schemes and 0.2% SW in 5th MI census.

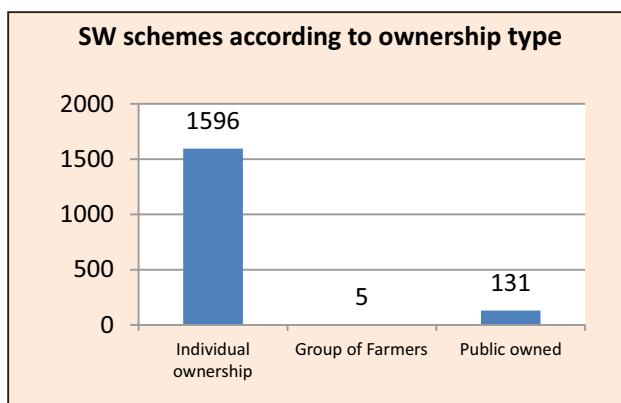
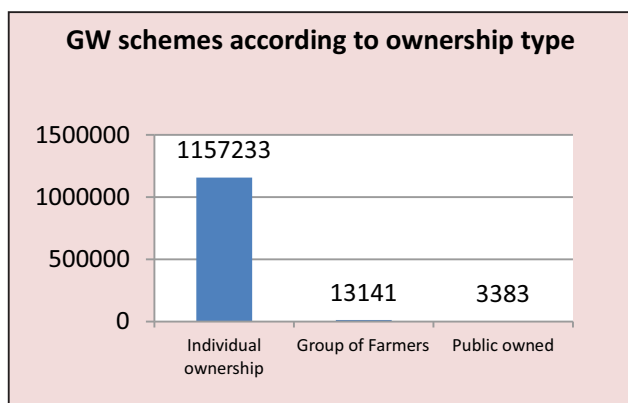
Out of the 11,75,489 MI schemes reported in Punjab, 48.8% (5,73,630) are deep tube wells followed by 35.6% (4,18,938) Medium tube well and 15.4% (1,81,189) Shallow tube well schemes. Distribution of different Ground Water and Surface Water schemes is shown in the chart given below.



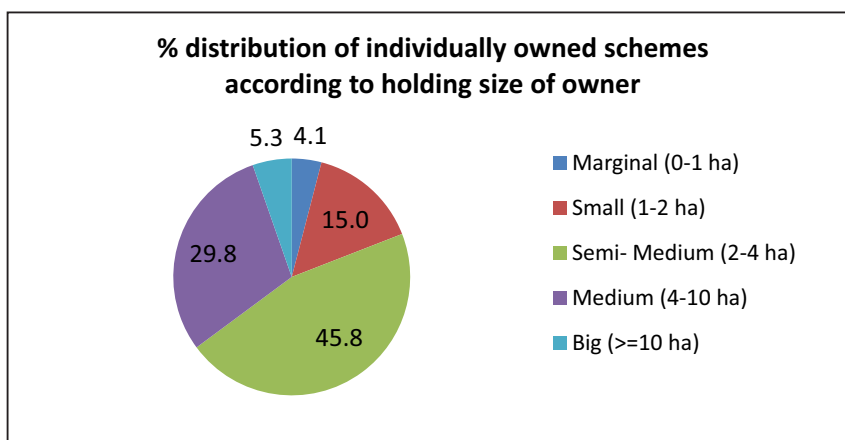
Ownership of MI schemes

Out of 11,75,489 MI schemes, majority of the schemes i.e. 98.6% (11,58,829) continue to remain under individual ownership, 1.1% (13,146) schemes are owned by group of farmers and a small chunk of 0.3% (3,514) schemes are public owned. Among 11,73,757 GW schemes, 98.6% (11,57,233) schemes are under

individual ownership whereas among 1,732 SW schemes, 92.1% (1,596) are owned by individual farmers. Most of MI structures in Punjab are owned by individuals as brought out in the figure given below. Individual farmers are getting maximum benefit from minor irrigation schemes.

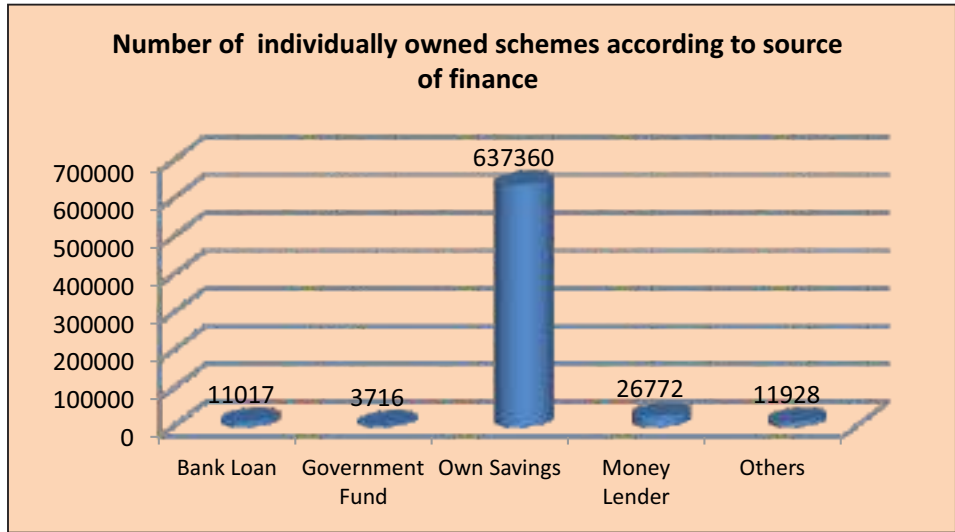


Out of the total 11,58,829 individually owned schemes, based on holding size of owner, Semi-Medium farmers (having holding size between 2-4 hectares) own a major share of 45.8% (5,30,369) in MI schemes. Among remaining 54.2% schemes, 19.1% schemes are owned by small and marginal farmers (having holding size upto 2 hectares), 35.1% schemes are owned by Medium and Big farmers (with holding size more than 4 hectares) which is shown in the chart given below.



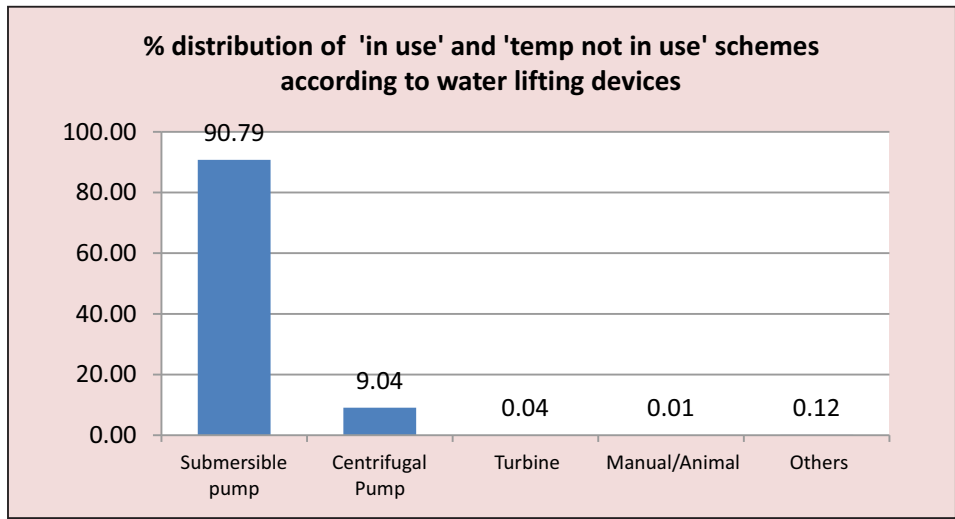
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 11,58,829 individually owned schemes, 59.6% (6,90,793) have single source of finance whereas 40.4% (46,8,036) have more than one source of finance. In these schemes with single source of finance (6,90,793), majority of schemes i.e. 92.3% (6,37,360) are financed by own savings of individual farmer. Other reported sources of finance are bank loan 1.6% (11,017), Government fund 0.5% (3,716), money lenders 3.9% (26,772) and other sources 1.7% (11,928). Distribution of individually owned MI schemes according to source of finance is depicted in the chart given below.



Distribution of lifting devices in MI schemes

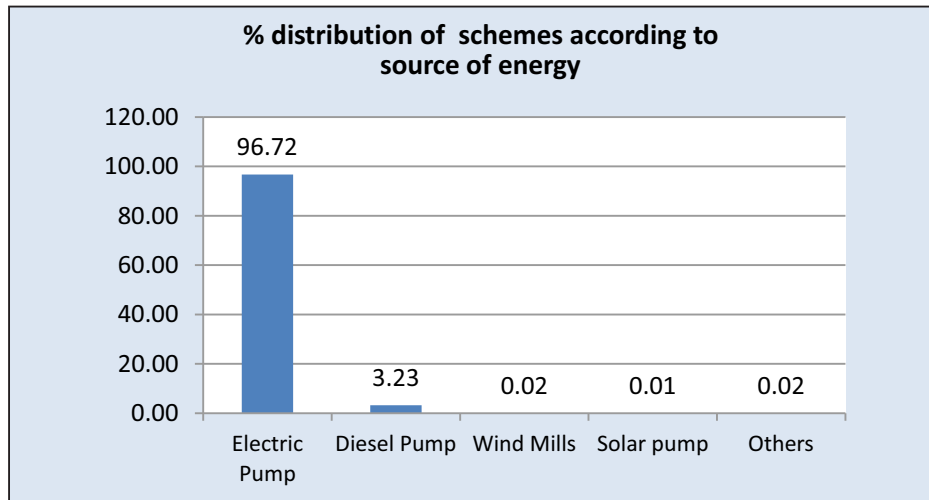
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 11,75,128, out of the total 11,75,489 MI schemes. Out of these (11,75,128) schemes, majority of schemes i.e 90.79% (10,66,895) have submersible pump, 9.04% (1,06,225) schemes have centrifugal pump as lifting device, 0.04% (451) are operated by turbines, 0.01% (6) use manual/animal lifting devices and 0.12% (1,551) schemes are operated by other devices for water lifting purposes. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



Distribution of source of energy

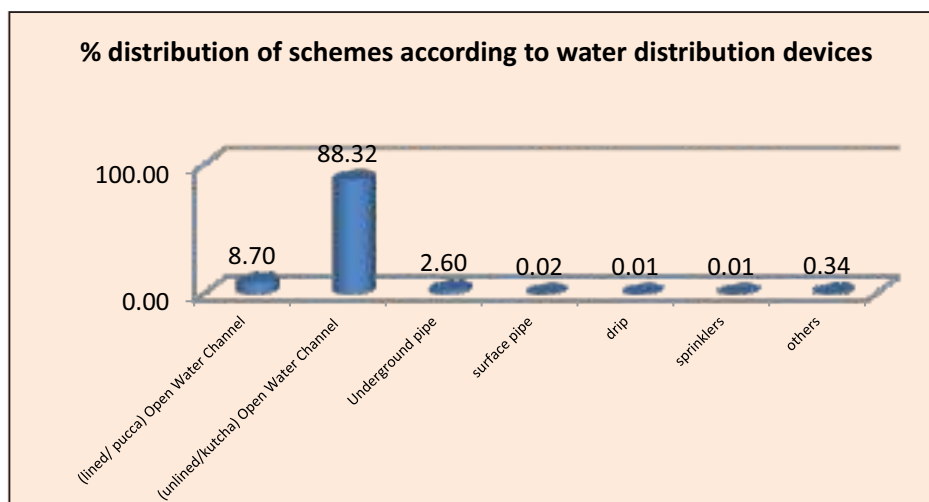
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which come under the category of ground water and surface lift schemes. The number of such schemes is 11,75,128. Out of these schemes, majority of schemes i.e 96.72% (11,36,587) schemes are using electricity as source of energy followed by diesel pumps

in 3.2% (37,958) schemes. In rest of the cases, 0.02% (196) schemes are using windmills followed by 0.01% (175) solar pump, 0.02% (206) other devices and only 6 schemes are using animal/ manual source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



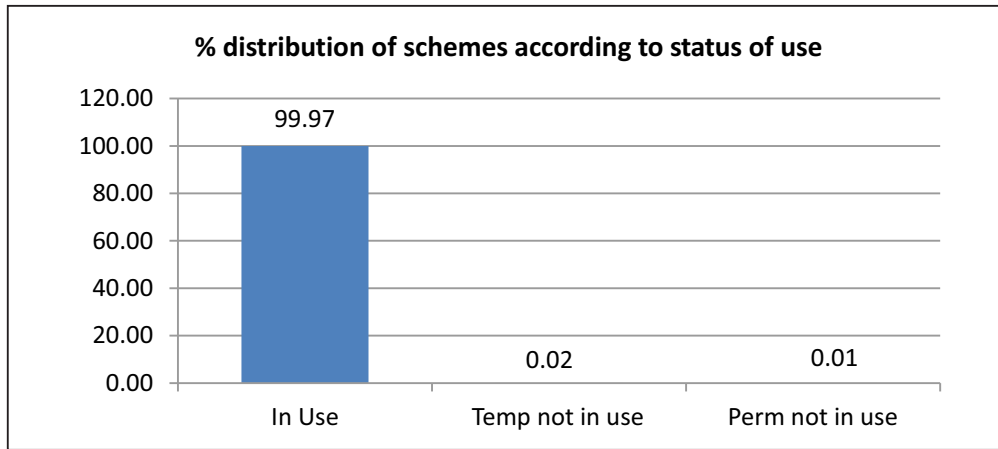
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 88.32% (10,37,967) followed by 8.70% (1,02,291) open water channel (lined/pucca) and 2.60% (30,501) underground pipes. The water distribution devices used in the rest of the MI schemes are 0.02% (187) surface pipe, 0.01% (70) Drip, 0.01%(19) sprinklers and 0.34% (4,135) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

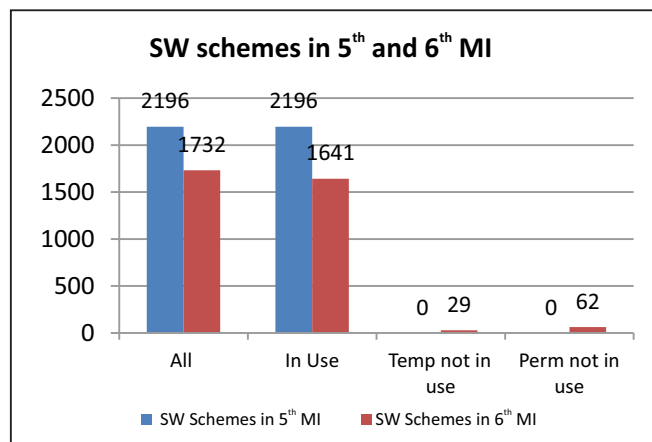
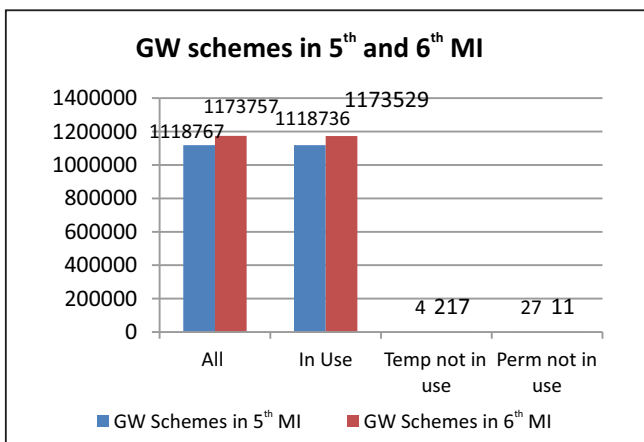


Status of MI schemes

Out of total number of 11,75,489 MI schemes, 99.97% (11,75,170) are 'In Use', 0.02% (246) are 'temporarily Not In Use' and only 0.01% (73) are 'permanently Not In Use' schemes which is depicted in the chart given below.

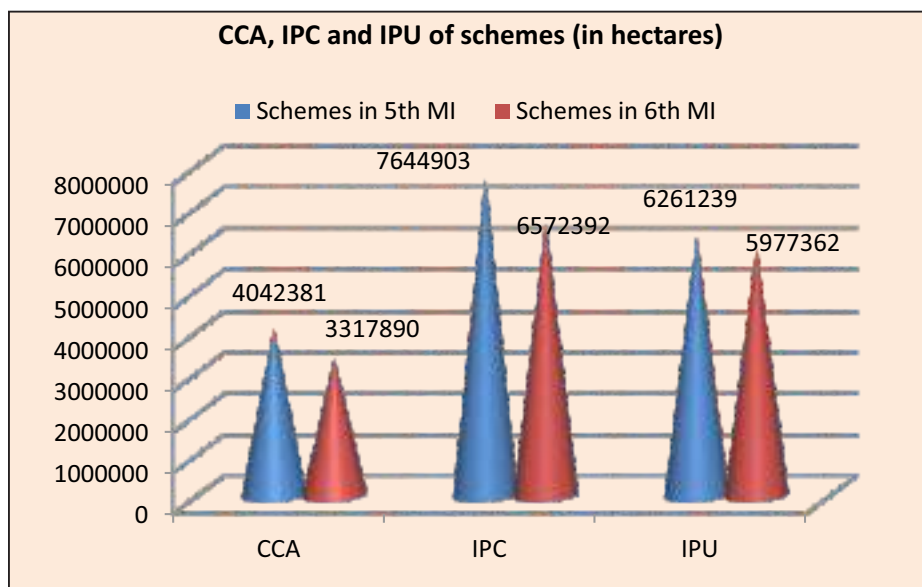


Out of 246 'temporarily not In Use' schemes, 217 are Ground Water schemes and 29 are Surface Water schemes. Among 73 'permanently not in Use' schemes, 11 are GW schemes and 62 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

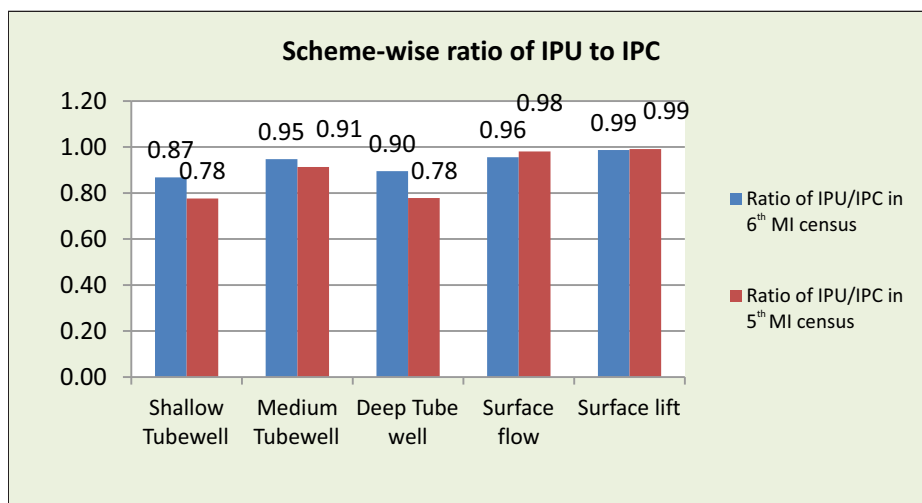
There has been decrease of 14.0% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is decreased from 76,44,903 hectares during 5th MI census to 65,72,392 hectares during 6th MI census. Irrigation potential utilized was 62,61,239 hectares during 5th MI Census in Punjab, which has declined by 4.5% 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, 65,57,755 hectares irrigation potential is created through Ground Water schemes and 14,637 hectares through Surface Water schemes. Irrigation potential utilized is 59,63,120 and 14,241 hectares for GW and SW schemes respectively. This shows that 90.93% of the potential created through Ground Water schemes has been utilized while percentage utilization in respect of Surface Water schemes is 97.30%. The scheme-wise ratio of IPU to IPC in Punjab is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Shallow Tubewell	917272	796370	0.87
Medium Tubewell	2254049	2134766	0.95
Deep Tube well	3386434	3031985	0.90
Surface flow	6439	6152	0.96
Surface lift	8198	8090	0.99

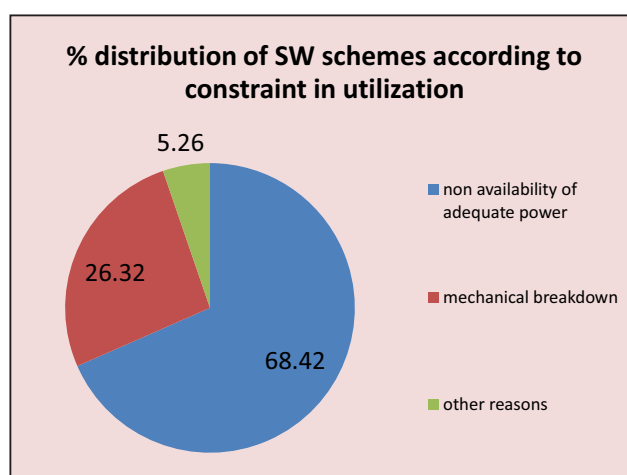
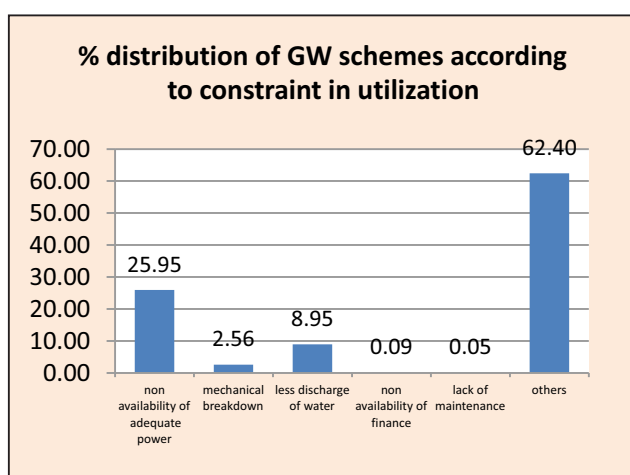
Deep tubewells have the highest IPC & IPU followed by Medium and Shallow tubewell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 85% utilization of the potential. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th 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, 2.7% (31,530) schemes out of 11,75,170 'in Use' schemes in Punjab are under-utilised due to several reasons. Remaining 97.3% 'in Use' MI schemes are functioning without any constraints.

Among 31,530 under-utilized schemes, 31,473 are Ground Water schemes and 57 are Surface Water schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be non-availability of adequate power, followed by less discharge of water, mechanical breakdown, non-availability of finance, lack of maintenance and other reasons. On the other hand, the SW schemes are underutilized due to non-availability of adequate power, mechanical breakdown and other reasons. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.

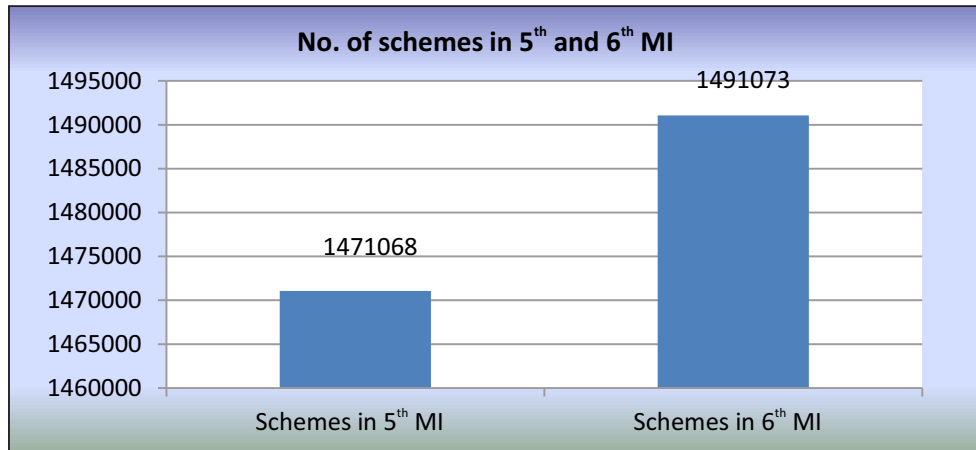


Key Parameters of 6 th MI Census-Punjab						
Parameter		Unit	Value			Percentage to Total
Number of schemes	Dugwells	No.	0			0.00
	Shallow Tubewell	No.	1,81,189			15.41
	Medium Tubewell	No.	4,18,938			35.64
	Deep Tubewells	No.	5,73,630			48.80
	Ground Water schemes	No.	11,73,757			99.85
	Surface Flow	No.	324			0.03
	Surface Lift	No.	1,408			0.12
	Surface Water schemes	No.	1,732			0.15
	Total schemes	No.	11,75,489			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	33,10,075	7,815	33,17,890	
	IPC	Ha	65,57,755	14,637	65,72,392	
	IPU	Ha	59,63,120	14,241	59,77,361	
	IPC of in use schemes	Ha	65,56,616	14,386	65,71,002	
	IPU of in use schemes	Ha	59,62,058	14,132	59,76,190	
	% Ratio of IPU wrt IPC	%	90.93	97.29	90.95	
	Gap in IPC and IPU	Ha	59,4,635	396	5,95,031	
Ownership	Individual ownership	No.	11,57,233	1,596	11,58,829	98.58
	Group of Farmers	No.	13,141	5	13,146	1.12
	Public owned	No.	3,383	131	3,514	0.30
	Total	No.	11,73,757	1,732	11,75,489	100.00

Key Parameters of 6 th MI Census-Punjab						
Parameter		Unit	Value			Percentage to Total
Social Status of Individual Owner	SC	No.	23,707	114	23,821	2.06
	ST	No.	2,323	8	2,331	0.20
	OBC	No.	28,246	34	28,280	2.44
	Others	No.	11,02,957	1,440	11,04,397	95.30
	Total Individual	No.	11,57,233	1,596	11,58,829	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	1,01,949	342	1,02,291	8.70
	Open Water Channel (unlined/ kutchra)	No.	10,36,934	1,033	10,37,967	88.32
	Underground pipe	No.	30,406	95	30,501	2.60
	Surface Pipe	No.	55	132	187	0.02
	Drip	No.	69	1	70	0.01
	Sprinklers	No.	19	0	19	0.00
	Others	No.	4,097	38	4,135	0.35
	Total	No.	11,73,529	1,641	11,75,170	100.00

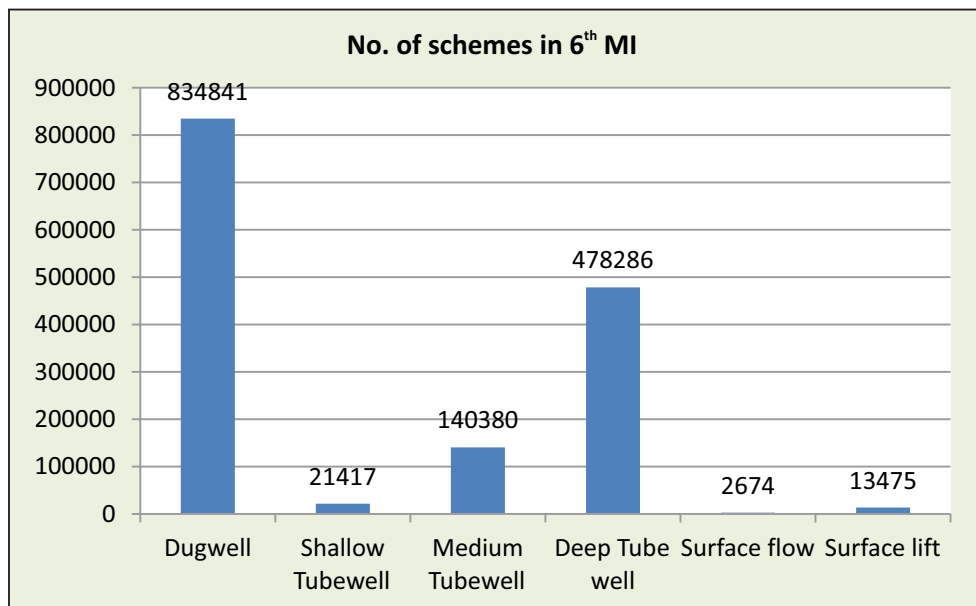
RAJASTHAN

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Rajasthan has 14,91,073 MI schemes comprising of 98.9% (14,74,924) Ground Water (GW) schemes and 1.1% (16,149) Surface Water (SW) schemes. There is an increase to the tune of 1.4% with 14,91,073 MI schemes in 6th MI census as compared to the 14,71,068 schemes in 5th MI census in the State of Rajasthan.



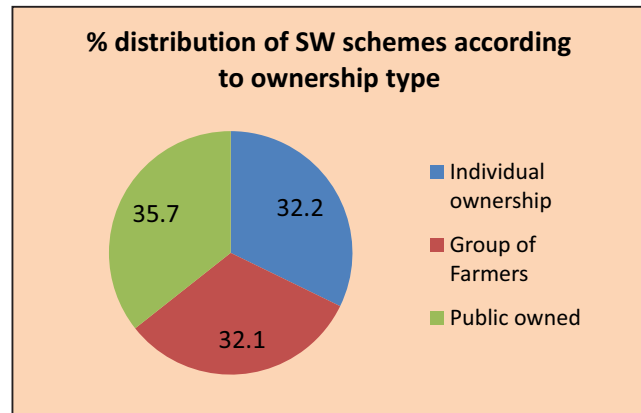
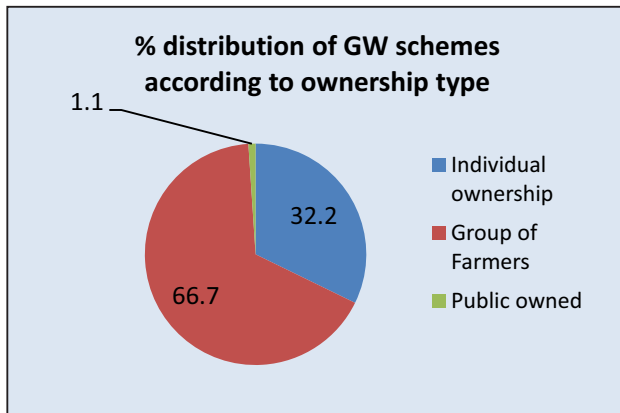
The State Government has reported an increase of 1.8% (25,391) in GW schemes and decline of 25% (5,386) in SW schemes during 6th MI census as compared to the 14,49,533 GW schemes and 21,535 SW schemes recorded in 5th census.

Out of the 14,91,073 MI schemes reported in Rajasthan, 56.0% (8,34,841) are dugwells followed by 32.1% (4,78,286) deep tubewell and 9.4% (1,40,380) medium tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

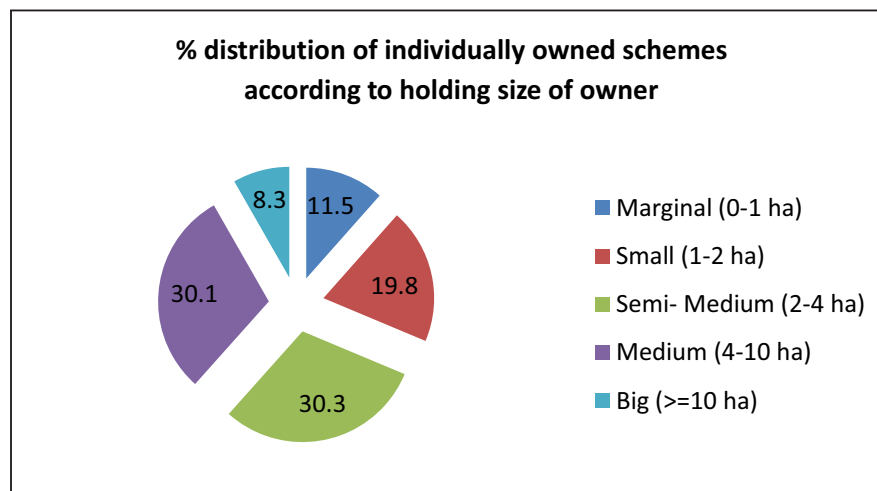


Ownership of MI schemes

Out of 14,91,073 MI schemes, majority of the schemes i.e. 66.4% (9,89,496) are owned by group of farmers, 32.2% (4,80,475) schemes are under individual ownership and a small chunk of 1.4% (21,102) schemes are public owned. Among 14,74,924 GW schemes, 66.7% (9,84,305) schemes are owned by group of farmers and among 16,149 SW schemes, 35.7% (5,756) are public owned. The percentage distribution of GW and SW schemes according to type of ownership is shown in the charts given below.



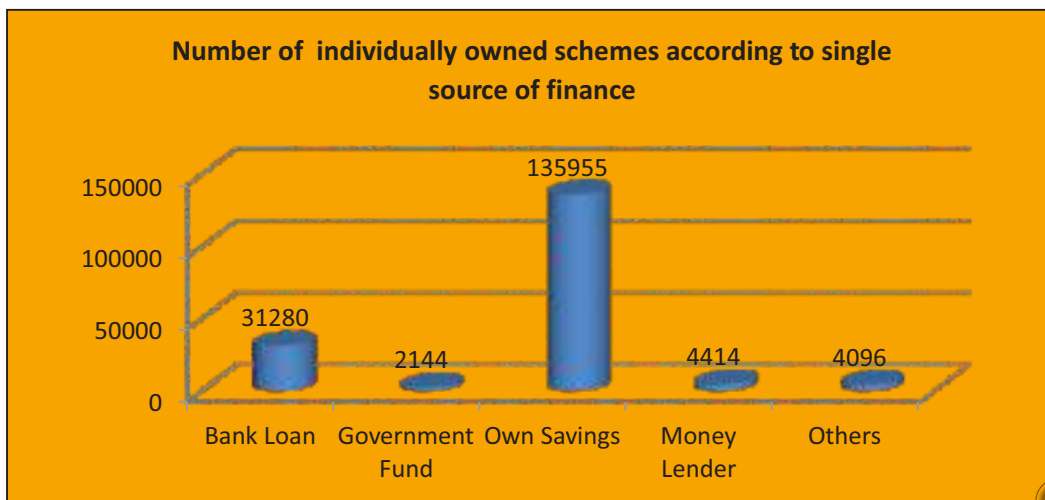
Out of 4,80,475 individually owned schemes, based on holding size of owner, only 11.5% (55,456) of the MI schemes are owned by marginal farmers (having less than 1 hectare). Semi-medium and medium farmers (having 2 to 10 hectares) own a major share of 60.4% (2,90,266) in MI schemes as depicted in the chart below.



Financing of MI schemes

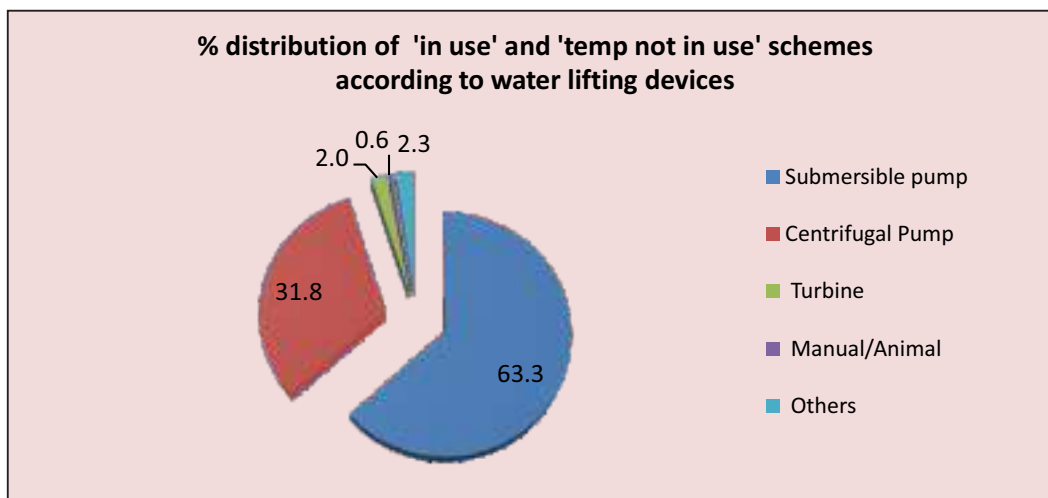
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 4,80,475 individually owned schemes, 37.0% (1,77,889) have single source of finance whereas 63.0% (3,02,586) have more than one source of finance. In these schemes with single source of finance (1,77,889), majority of schemes i.e. 76.4% (1,35,955) are being financed by own savings of individual

farmer. Other reported sources of finance are bank loan 17.6% (31,280), money lenders 2.5% (4,414), Government fund 1.2% (2,144) and others 2.3% (4,096). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



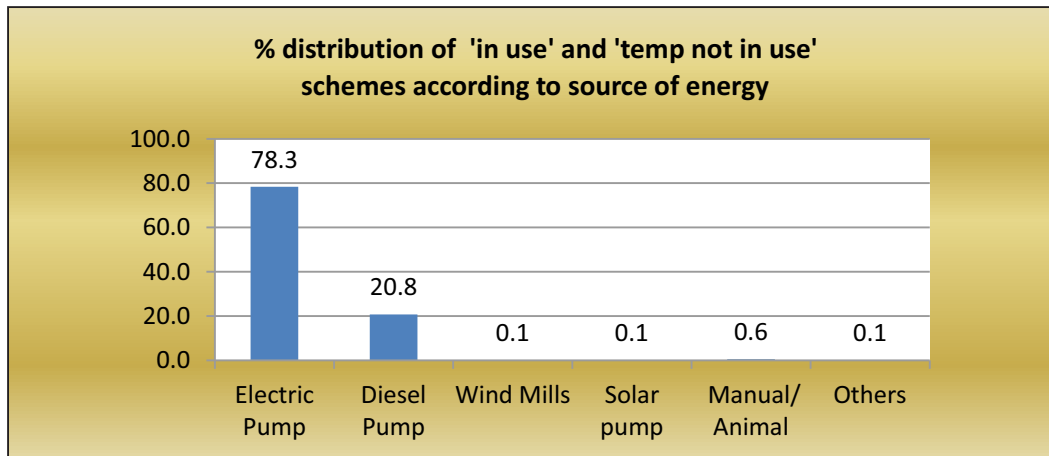
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 14,74,838, out of 14,91,073 MI schemes. Out of these (14,74,838) schemes, majority of schemes i.e 63.3% (9,33,425) have submersible pump and 31.8% (4,68,849) schemes have centrifugal pump as lifting device. 2.0% (29,402) schemes are operated by turbines, 0.6% (8,222) are operated using manual/animal lifting devices and rest 2.3% (34,940) use other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



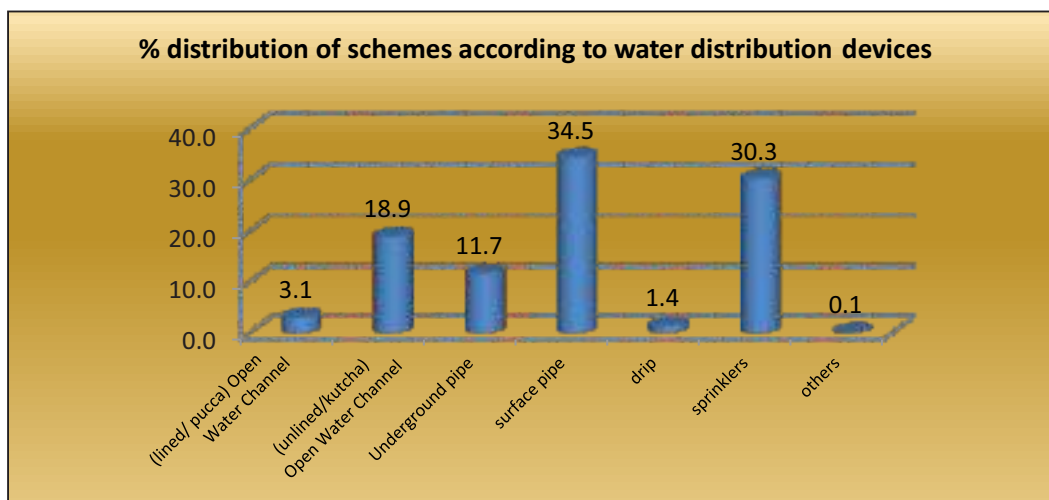
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 14,74,838. Out of these (14,74,838) schemes, majority of schemes i.e. 78.3% (11,55,444) schemes are using electricity as source of energy followed by diesel pump in 20.8% (3,06,052) schemes. While rest of the 0.9% (13,342) schemes are using manual/animal, solar pumps, wind mills and others sources as source of energy. The percentage distribution of schemes according to source of energy is shown in the chart given below.



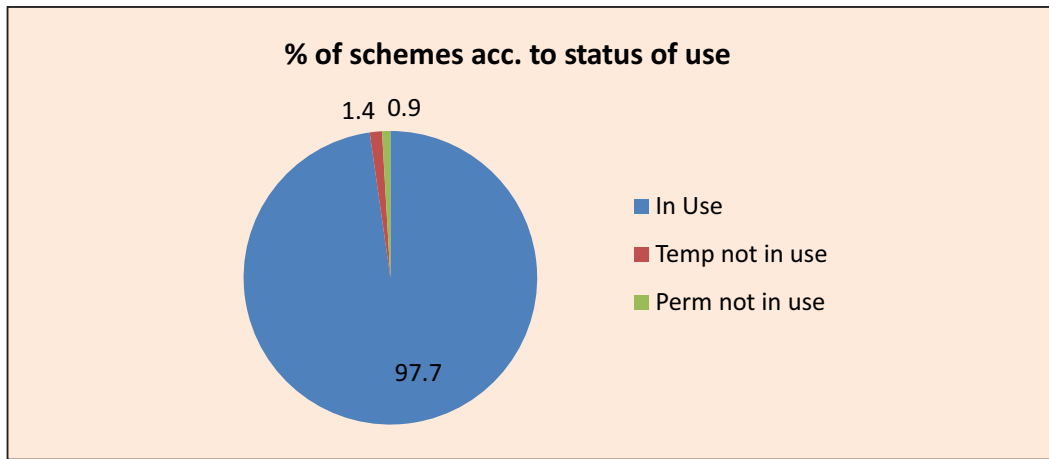
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through surface pipe is 34.5% (5,02,171) followed by 30.3% (4,41,256) sprinklers and 18.9% (2,75,665) open water channel (unlined/kutchra). The water distribution devices used in the rest of the MI schemes are 11.7% (1,71,529) underground pipe, 3.1% (44,772) open water channel (lined/pucca), 1.4% (20,168) Drip and 0.1% (1,960) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

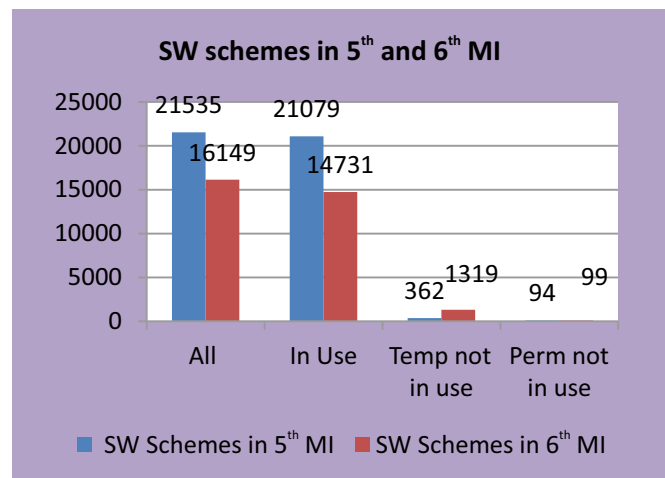
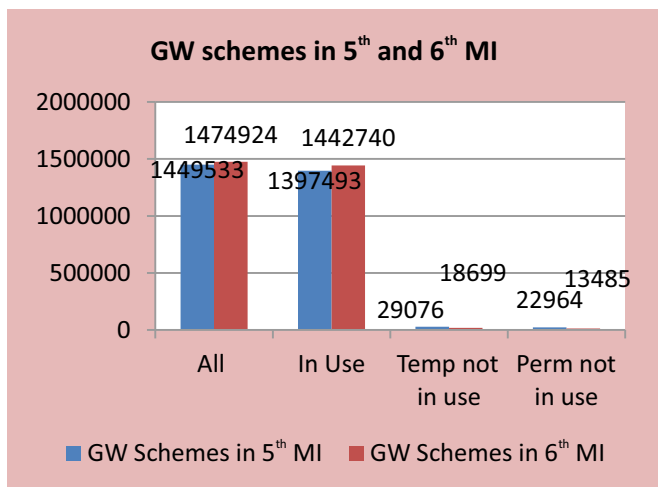


Status of MI schemes

Out of 14,91,073 MI schemes, 97.7% (14,57,471) are 'in use', 1.4% (20,018) are 'temporarily not in use' and only 0.9% (13,584) are 'permanently not in use' schemes which is depicted in the pie chart given below.

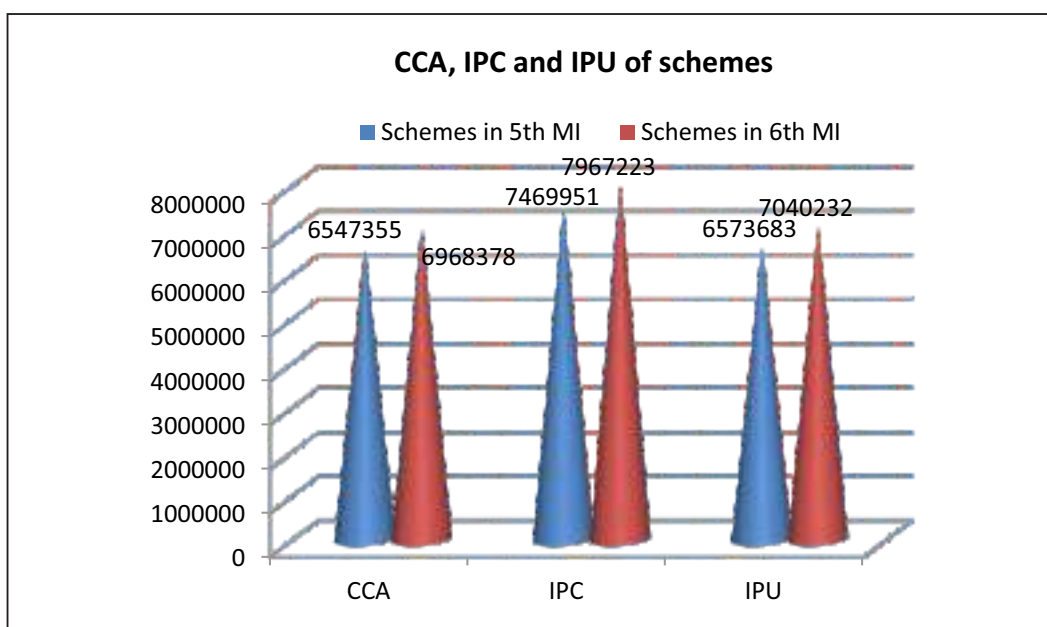


Out of 20,018 'temporarily not in use' schemes, 18,699 are GW schemes and 1,319 are SW schemes. Among 13,584 'permanently not in use' schemes, 13,485 are GW schemes and 99 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

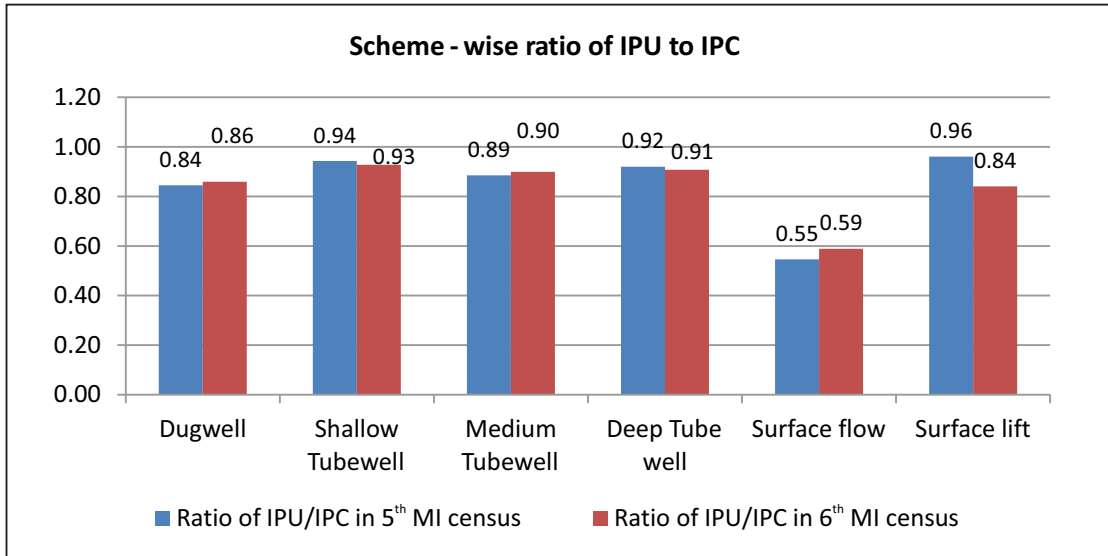
There has been an increase of 6.7% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has increased from 74,69,951 hectares during 5th MI census to 79,67,223 hectares during 6th MI census. Irrigation potential utilized was 65,73,683 hectares during 5th MI Census in Rajasthan, which has increased by 7.1% 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, 77,77,280 hectares irrigation potential is created through GW schemes and 1,89,943 hectares through SW schemes. Irrigation potential utilized is 69,05,666 and 1,34,566 hectares for GW and SW schemes, respectively. This shows that 88.8 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 70.8%. The scheme-wise ratio of IPU to IPC in Rajasthan is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Rajasthan			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	30,69,717	26,36,931	0.86
Shallow Tubewell	1,36,684	1,26,847	0.93
Medium Tubewell	8,34,305	7,50,298	0.90
Deep Tube well	37,36,574	33,91,591	0.91
Surface flow	99,627	58,658	0.59
Surface lift	90,316	75,907	0.84

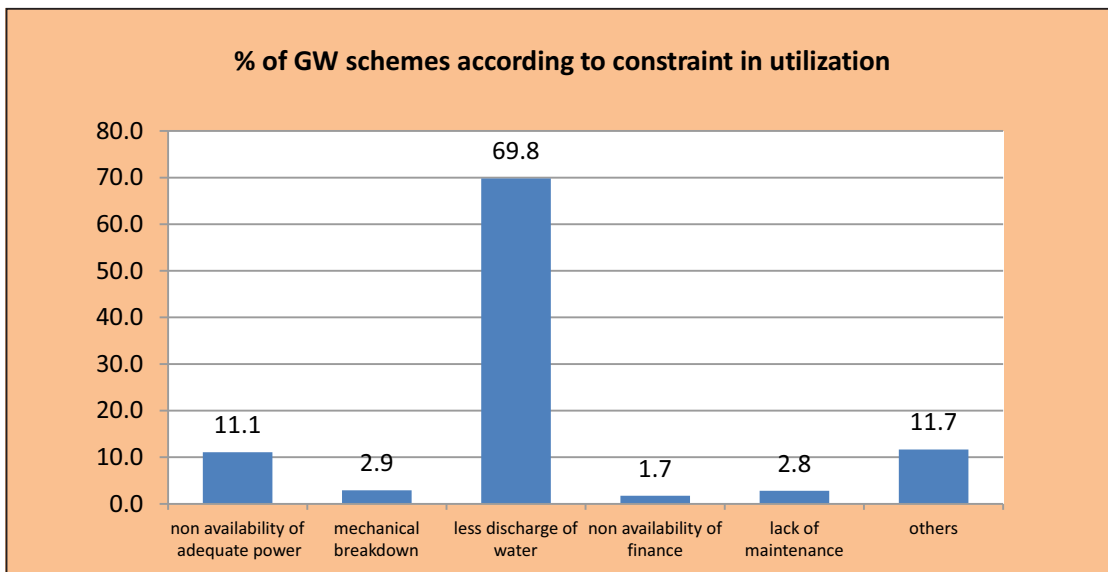
Deep tubewells have the highest IPC & IPU followed by dugwells and medium tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 80% utilization of the potential created except surface flow scheme with a utilization of 59%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.

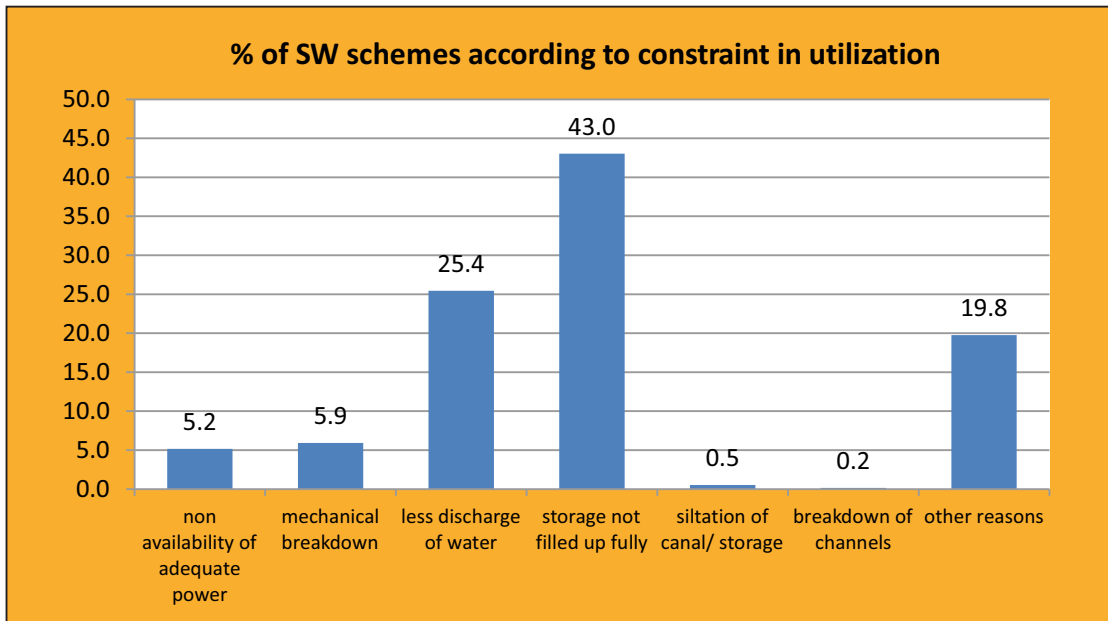


Underutilization of In Use schemes

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, out of 14,57,471 'in use' schemes in Rajasthan, 2,86,091 (19.6%) schemes are under-utilised due to several reasons. Remaining 80.4% 'in Use' MI schemes are functioning without any constraints.

Among 2,86,091 under-utilized schemes, 2,83,595 are GW schemes and 2,496 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' and the SW schemes are under-utilized mainly due to storage not filled up fully and 'less discharge of water'. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.





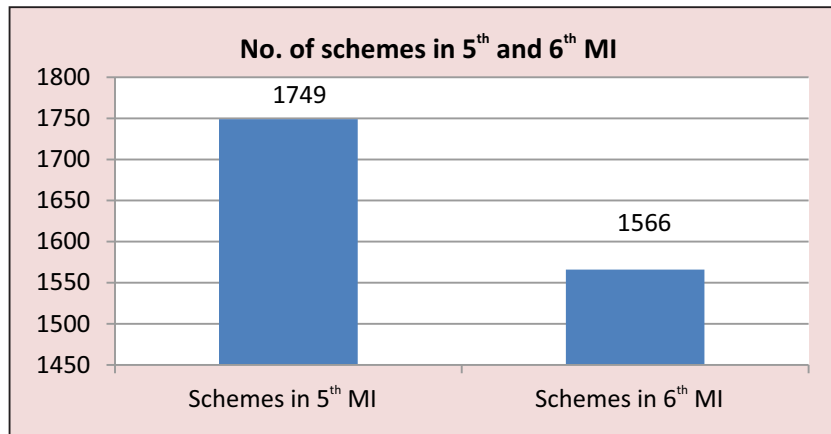
Key Parameters of 6 th MI Census-Rajasthan						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	8,34,841			55.99
	Shallow Tubewell	No.	21,417			1.44
	Medium Tubewell	No.	1,40,380			9.41
	Deep Tubewells	No.	4,78,286			32.08
	Ground Water schemes	No.	14,74,924			98.92
	Surface Flow	No.	2,674			0.18
	Surface Lift	No.	13,475			0.90
	Surface Water schemes	No.	16,149			1.08
	Total schemes	No.	14,91,073			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	67,91,065	1,77,313	69,68,378	
	IPC	Ha	77,77,280	1,89,943	79,67,223	
	IPU	Ha	69,05,666	134,566	70,40,232	
	IPC of in use schemes	Ha	77,03,954	1,69,235	78,73,190	
	IPU of in use schemes	Ha	68,90,832	1,31,687	70,22,520	
	% Ratio of IPU wrt IPC	%	88.79	70.85	88.36	
	Gap in IPC and IPU	Ha	8,71,614	55,377	9,26,991	
Ownership	Individual ownership	No.	4,75,273	5,202	4,80,475	32.22
	Group of Farmers	No.	9,84,305	5,191	9,89,496	66.36
	Public owned	No.	15,346	5,756	21,102	1.42
	Total	No.	14,74,924	16,149	14,91,073	100.00
Social Status of Individual Owner	SC	No.	54,329	573	54,902	11.43
	ST	No.	60,021	1,423	61,444	12.79
	OBC	No.	2,66,368	2,288	2,68,656	55.91
	Others	No.	94,555	918	95,473	19.87
	Total Individual	No.	4,75,273	5,202	4,80,475	100.00
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No.	43,501	1,221	44,722	3.07

Key Parameters of 6th MI Census-Rajasthan

Parameter	Unit	Value			%
Open Water Channel (unlined/ kutchra)	No.	2,74,445	1,220	2,75,665	18.91
Underground pipe	No.	1,71,016	513	1,71,529	11.77
Surface Pipe	No.	4,91,569	10,602	5,02,171	34.45
Drip	No.	20,089	79	20,168	1.38
Sprinklers	No.	4,40,611	645	4,41,256	30.28
Others	No.	1,509	451	1,960	0.13
Total	No.	14,42,740	14,731	14,57,471	100.00

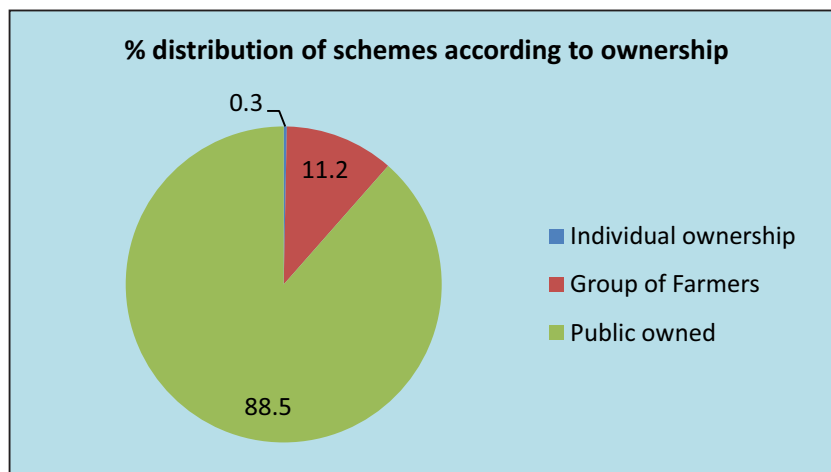
SIKKIM

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Sikkim has 1,566 MI schemes all of which are Surface flow schemes. There is a decline to the tune of 10.5% in 6th MI census as compared to the 1749 schemes in 5th MI census in the State of Sikkim.

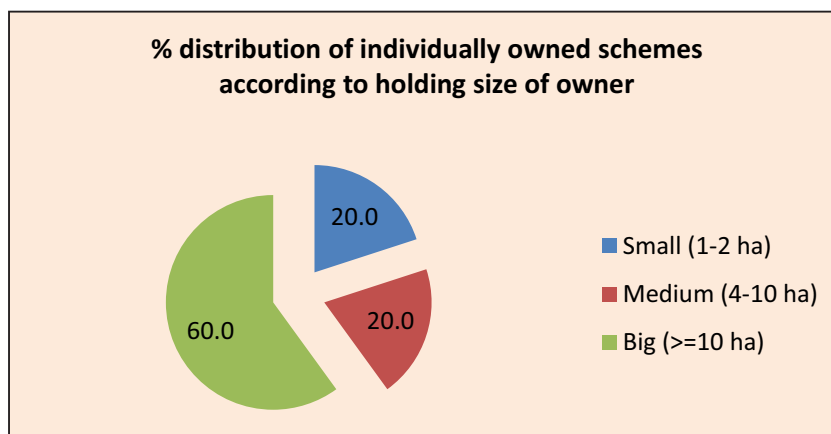


Ownership of MI schemes

Out of 1,566 MI schemes, majority of the schemes i.e. 88.5% (1,386) are under public ownership, 11.2% (175) schemes are owned by group of farmers and a small chunk of 0.3% (05) schemes are owned by individual farmers. Most of MI structures in Sikkim are under public authorities as brought out in the figure given below. This shows the dominance of public authorities in minor irrigation sector of the State.



Out of the 5 individually owned schemes, based on holding size of owner, 03 schemes are owned by big farmers, 01 by medium farmer and 01 is owned by small farmer which is shown in the pie chart given below.

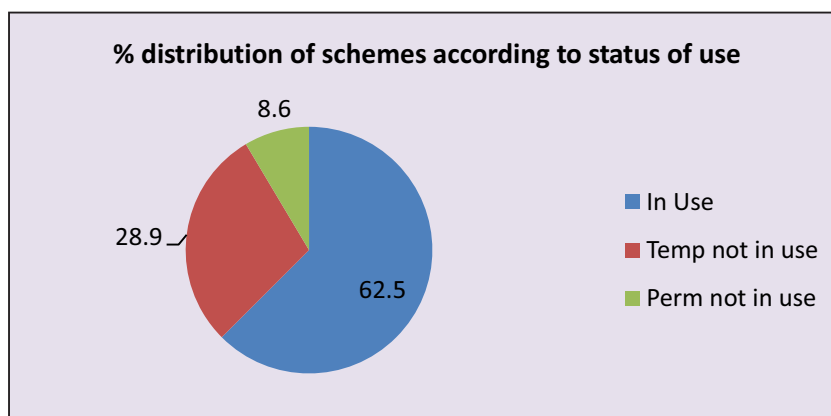


Financing of MI schemes

The information on source of finance has been collected in the census for the schemes owned by individual farmers. Out of the individually owned schemes, four have single source of finance which are being financed by Government fund whereas only one have more than one source of finance.

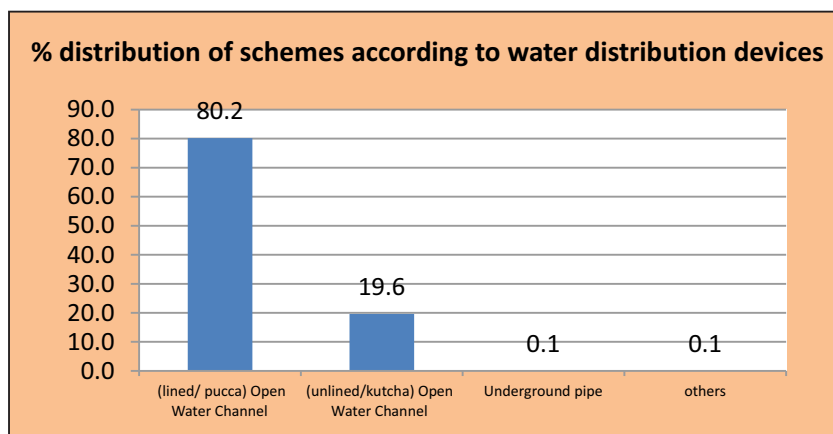
Status of MI schemes

Out of 1,566 MI schemes, 62.5% (979) are 'in use', 28.9% (453) are 'temporarily not in use' and only 8.6 % (134) are 'permanently not in use' schemes which is depicted in the pie chart given below.



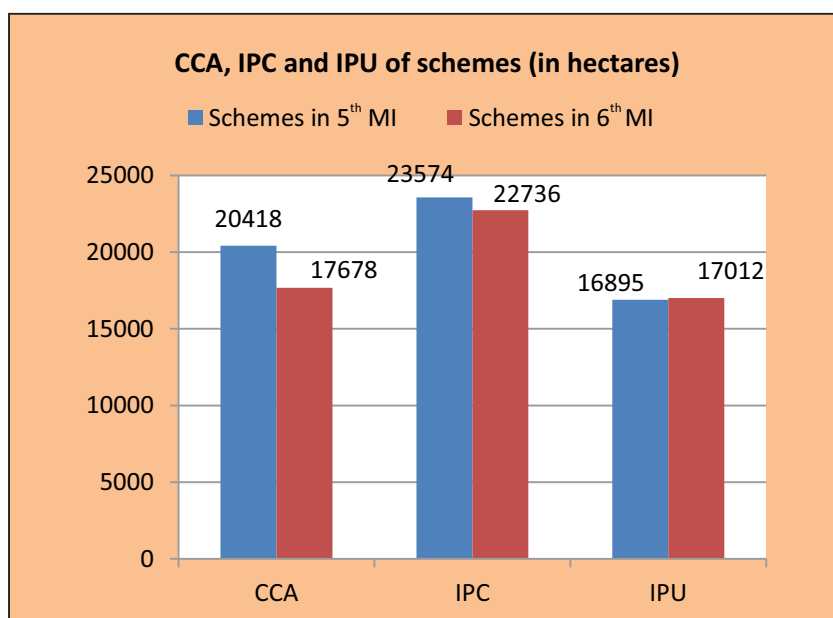
Water distribution device

As per the 6th MI Census, out of all in use MI schemes, 80.2% (785) distribute water through open water channel (lined/pucca), 19.6% (192) through open water channel (unlined/kutchra), 0.1% (01) scheme distribute water through underground pipe and 0.1% (01) distribute the water through other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



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

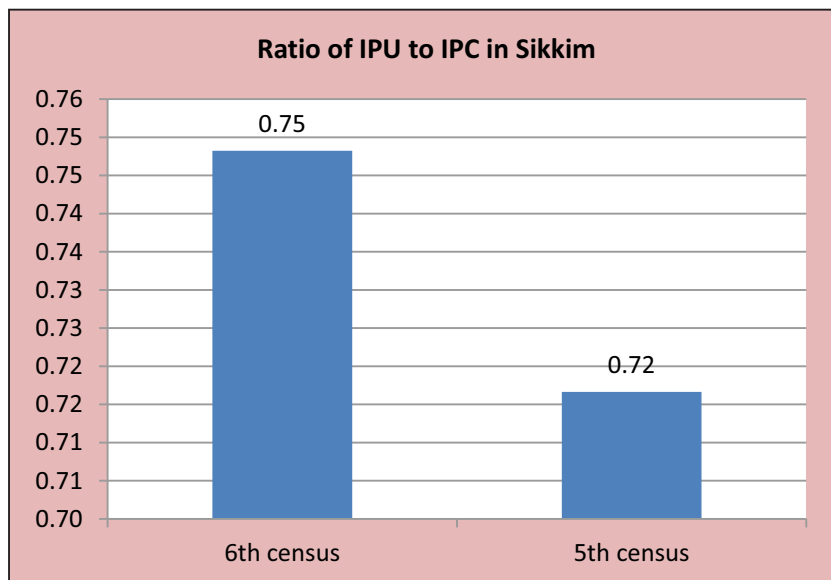
There has been marginal decrease of 3.6% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is decreased from 23,574 hectares during 5th MI census to 22,736 hectares during 6th MI census. Irrigation potential utilized was 16,895 hectares during 5th MI Census in Sikkim, which has increased by 0.7% 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.



The ratio of IPU to IPC in Sikkim is presented in the table given below.

ratio of IPU to IPC in Sikkim			
	IPC	IPU	Ratio of IPU/IPC
Surface flow	22,736.5	17,012.1	0.75

A comparative chart showing ratio of IPU/IPC in the 6th and 5th MI census is given below.



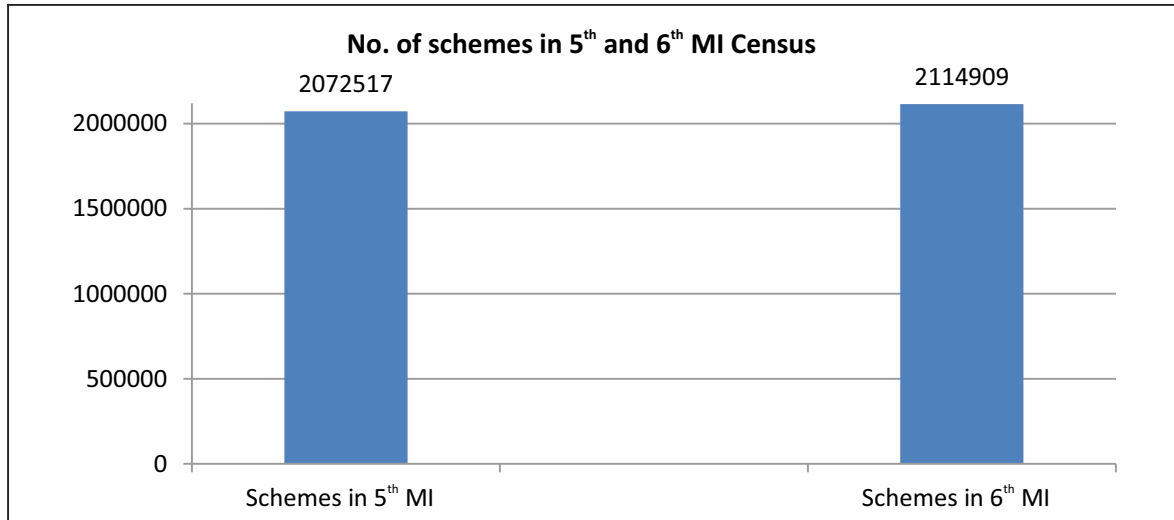
Underutilization of In Use schemes

Out of the 979 'in use' schemes in the State of Sikkim, 2 schemes are reported to be under-utilized. The reason reported for under-utilization is break-down of channels.

Key Parameters of 6 th MI Census-Sikkim				
	Parameter	Unit	Value	%
	Surface Flow	No.	1,566	100.00
	Surface Lift	No.	0	0.00
	Surface Water schemes	No.	1,566	
	Total schemes	No.	1,566	
CCA, IPC and IPU	CCA	Ha	17,678	
	IPC	Ha	22,736	
	IPU	Ha	17,012	
	IPC of in use schemes	Ha	15,254	
	IPU of in use schemes	Ha	12,559	
	% Ratio of IPU wrt IPC	%	74.82	
	Gap in IPC and IPU	Ha	5,724	
Ownership	Individual ownership	No.	5	0.32
	Group of Farmers	No.	175	11.17
	Public owned	No.	1,386	88.51
	Total	No.	1,566	100.00
Social Status of Individual Owner	SC	No.	0	0.00
	ST	No.	0	0.00
	OBC	No.	2	40.00
	Others	No.	3	60.00
	Total Individual	No.	5	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	785	80.18
	Open Water Channel (unlined/ kutchra)	No.	192	19.61
	Underground pipe	No.	1	0.10
	Surface Pipe	No.	0	0.00
	Drip	No.	0	0.00
	Sprinklers	No.	0	0.00
	Others	No.	1	0.10
	Total	No.	979	100.00

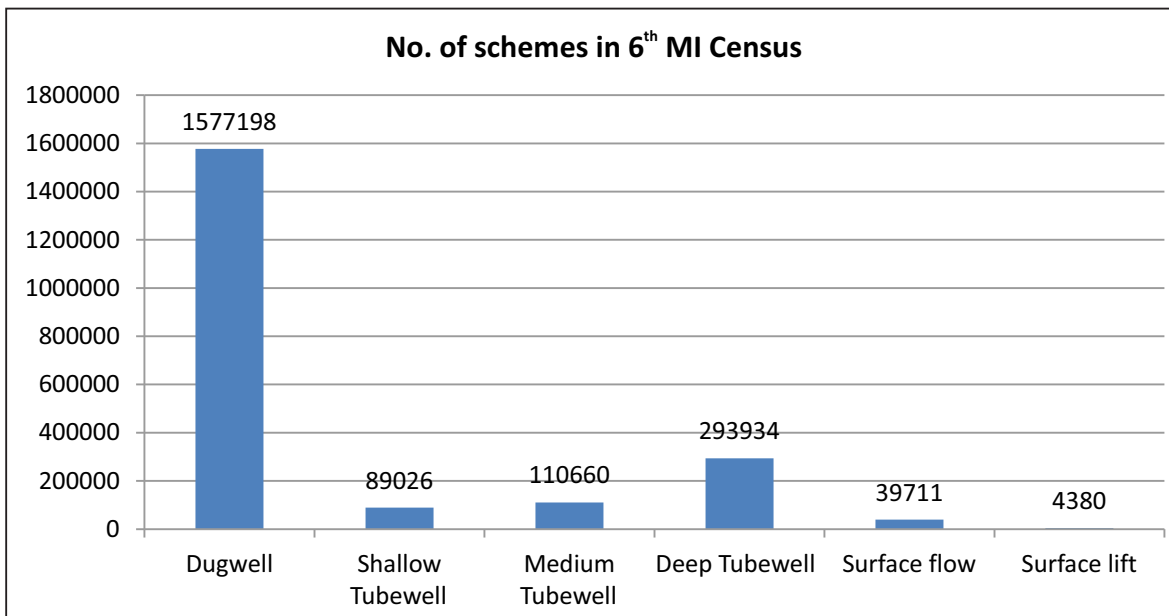
TAMIL NADU

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Tamil Nadu has 21,14,909 MI schemes comprising of 97.9% (20,70,818) Ground Water (GW) schemes and 2.1% (44,091) Surface Water (SW) schemes. There is an increase to the tune of 2% in 6th MI census as compared to the 20,72,517 schemes in 5th MI census in the State of Tamil Nadu.



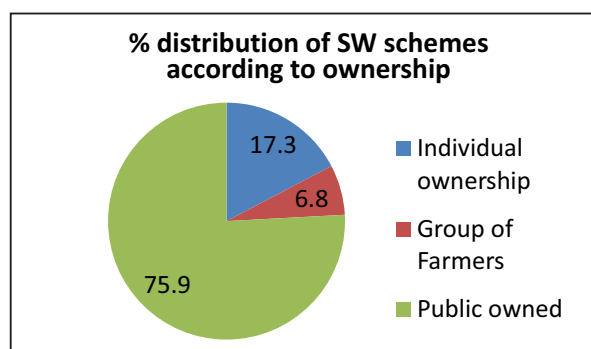
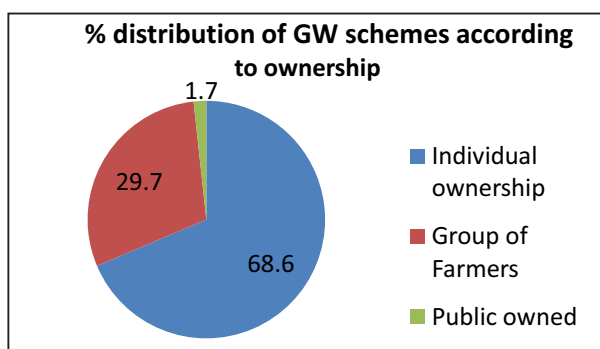
The State Government has reported an increase of 2.2% (45,252) in GW schemes and decline of 6.1% (2,860) in SW schemes during 6th MI census as compared to the 20,25,566 GW schemes and 46,951 SW schemes recorded in 5th census.

Out of the 21,14,909 MI schemes reported in Tamil Nadu, 74.6% (15,77,198) are dugwells followed by 13.9% (2,93,934) deep tubewells. Distribution of different GW and SW schemes is shown in the chart given below.

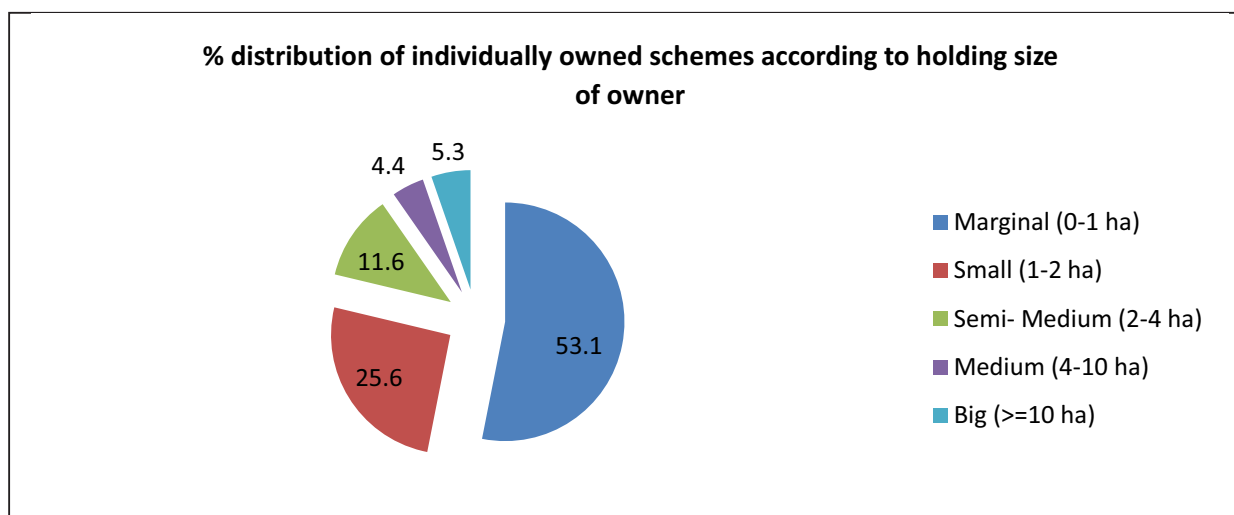


Ownership of MI schemes

Out of 21,14,909 MI schemes, majority of the schemes i.e. 67.5% (14,28,702) continue to remain under individual ownership, 29.2% (6,17,164) schemes are owned by group of farmers and a small chunk of 3.3% (69,043) schemes are public owned. Among 20,70,818 GW schemes, 68.6% (14,21,074) schemes are individually owned and among 44,091 SW schemes, 75.9% (33,444) are public owned.



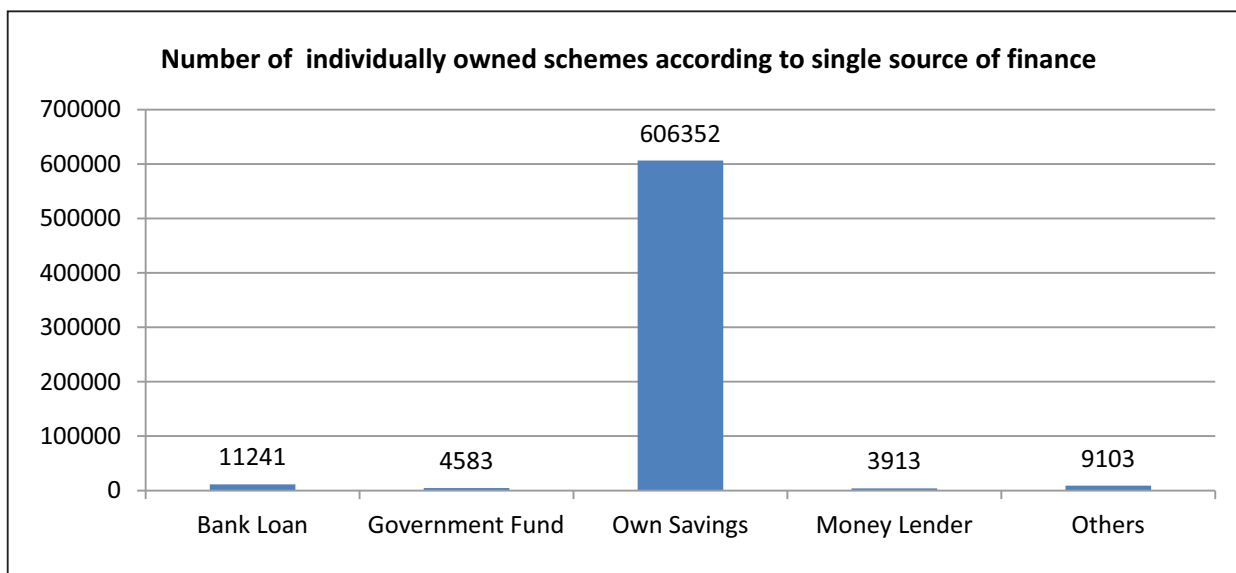
Out of 14,28,702 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 78.7% (11,24,776) in MI schemes. Rest of the 21.3% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial role of improving the livelihood of small and marginal farmers.



Financing of MI schemes

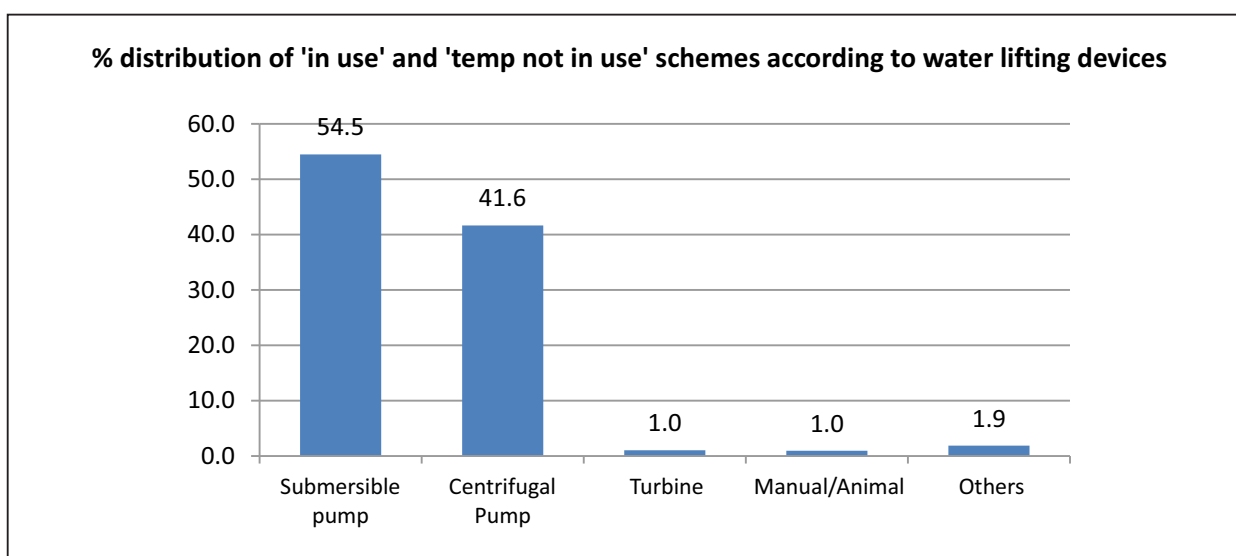
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 14,28,702 individually owned schemes, 44.5% (6,35,192) have single source of finance whereas 55.5% (7,93,510) have more than one source of finance. In these schemes with single source of finance (6,35,192), majority of schemes i.e. 95.5% (6,06,352) are being financed by own savings of individual

farmer. Source of finance for rest of the 4.5% (28,840) schemes are bank loan, Government fund, money lenders and other sources. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



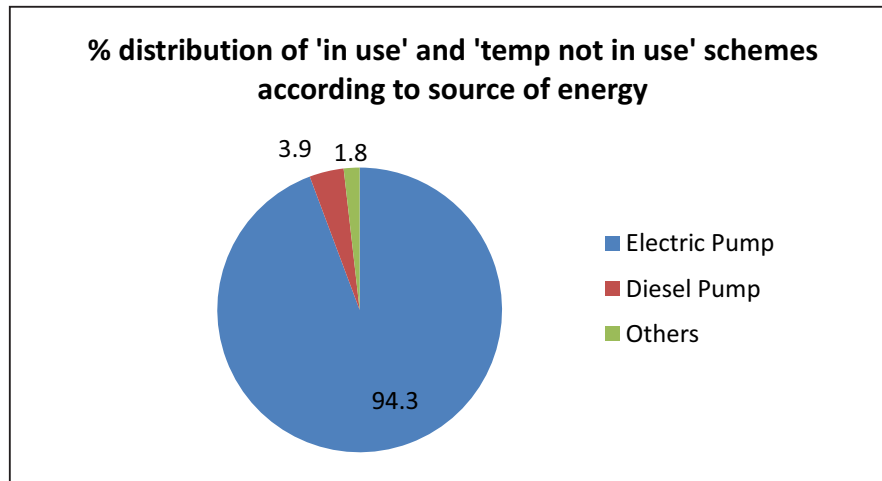
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 20,21,601 out of 21,14,909 MI schemes. Out of these 20,21,601 schemes, majority of schemes i.e 54.5% (11,01,372) have submersible pump and 41.6% (8,42,004) schemes have centrifugal pump as lifting device. 1% (19,382) schemes are being operated manually or by animal for water lifting purposes, 1% (20,847) are operated by turbines and rest 1.9% (37,996) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



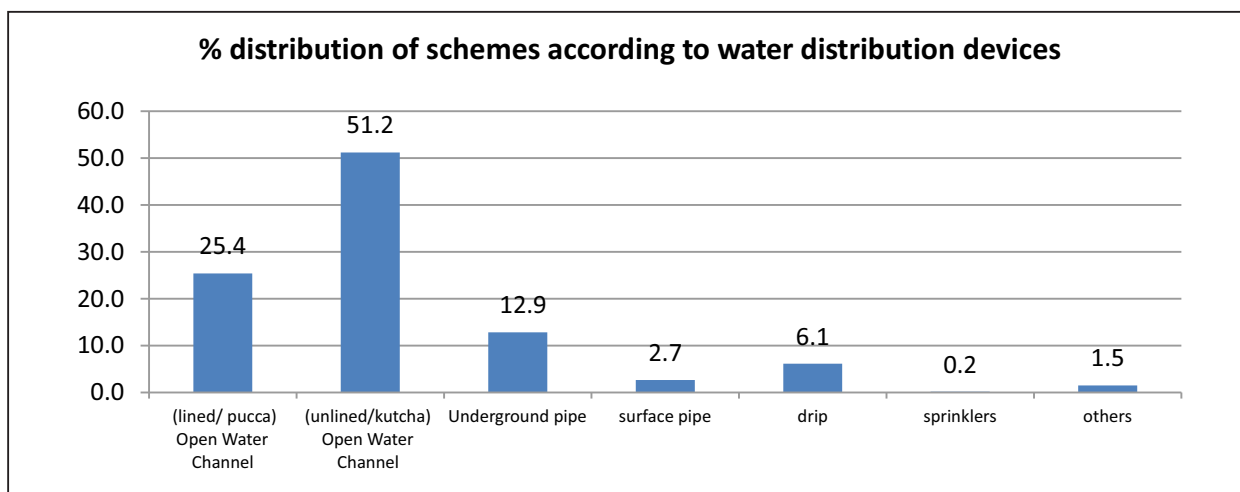
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 20,21,601. Out of these 20,21,601 schemes, majority of schemes i.e 94.3% (19,07,197) schemes are using electricity as source of energy followed by diesel pumps in 3.9% (79,533) schemes. The remaining 1.8% (34,871) are using sources such as solar pumps, windmills, manual/animal and others sources. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



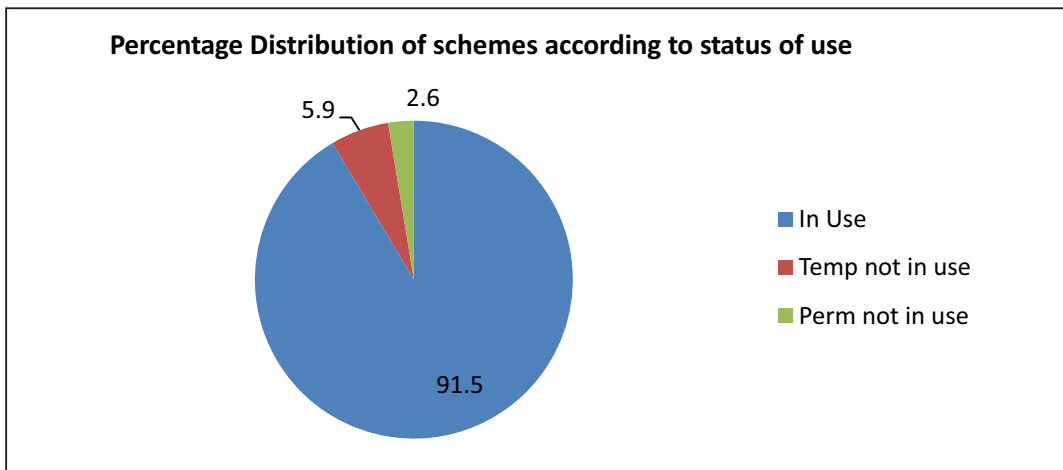
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 51.2% (9,90,309) followed by 25.4% (4,91,476) open water channel (lined/pucca) and 12.9% (2,48,446) underground pipes. The water distribution devices used in the rest of the MI schemes are surface pipes, drip, sprinklers and other devices as depicted in the figure given below.

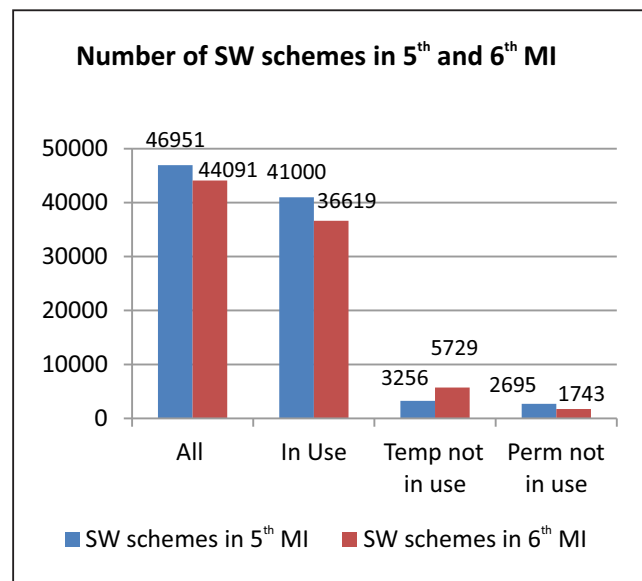
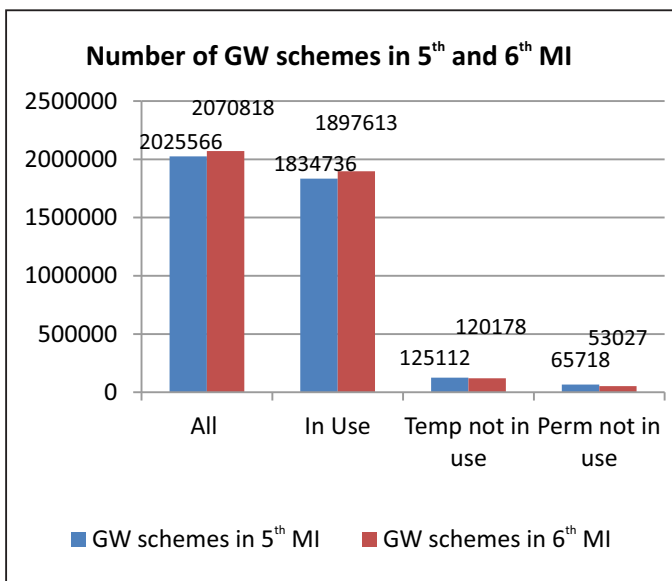


Status of MI schemes

Out of 21,14,909 MI schemes, 91.5% (19,34,232) are 'in use', 5.9% (1,25,907) are 'temporary not in use' and only 2.6% (54,770) are 'permanently not in use' schemes which is depicted in the pie chart given below.



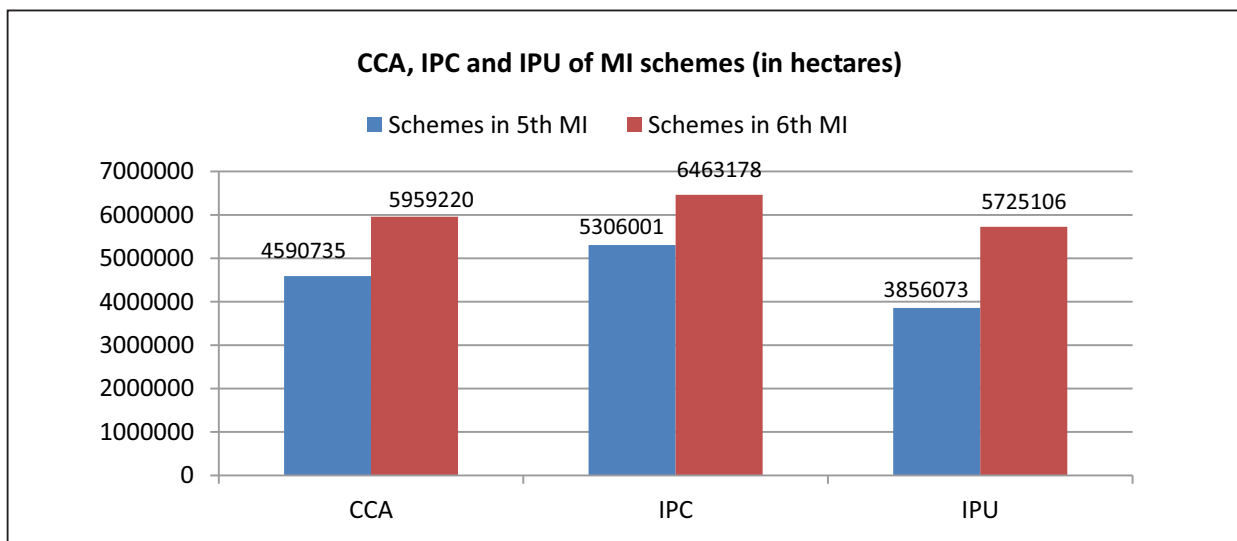
Out of 1,25,907 'temporary not in use' schemes, 1,20,178 are GW schemes and 5,729 are SW schemes. Among 54,770 'permanently not in use' schemes, 53,027 are GW schemes and 1,743 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been increase of 21.8% 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 has increased from 53,06,001 hectares during 5th MI census to 64,63,178 hectares during 6th MI census. Irrigation

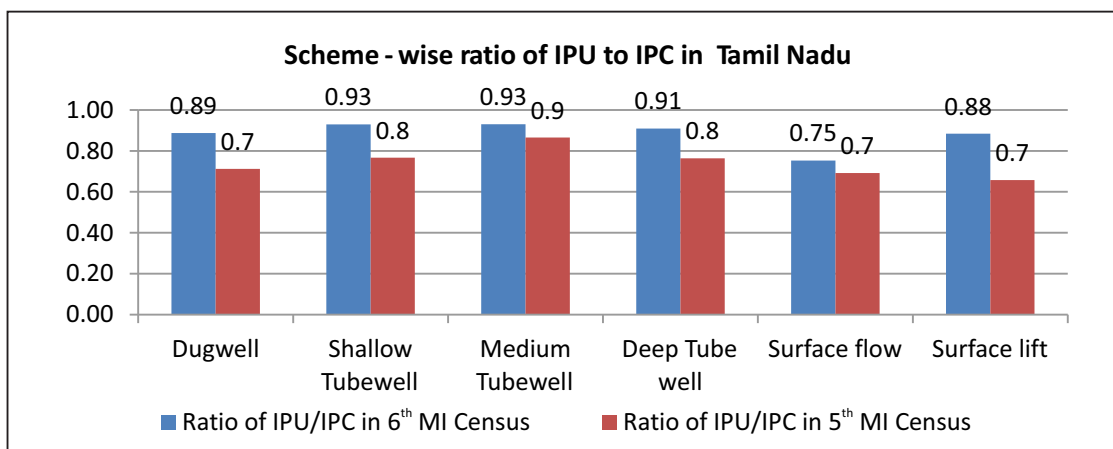
potential utilized was 38,56,073 hectares during 5th MI Census in Tamil Nadu, which has increased by 48.5 % during 6th MI Census. A comparative chart showing Culturable Command Area (CCA), IPC and IPU of schemes during 5th and 6th MI census is shown in the chart given below.



As per 6th MI Census, 59,58,002 hectares irrigation potential is created through GW schemes and 5,05,176 hectares through SW schemes. Irrigation potential utilized is 53,41,389 hectares and 3,83,717 hectares for GW and SW schemes respectively. This shows that 89.7 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 76 %. The scheme-wise ratio of IPU to IPC in Tamil Nadu is presented in the table given below.

	IPC	IPU	Ratio of IPU/IPC
Dugwell	41,85,759	37,14,610	88.7
Shallow Tubewell	2,77,452	2,57,887	92.9
Medium Tubewell	4,71,871	4,38,735	93.0
Deep Tubewell	10,22,920	9,30,157	90.9
Surface flow	4,78,312	3,59,963	75.3
Surface lift	26,863	23,754	88.4

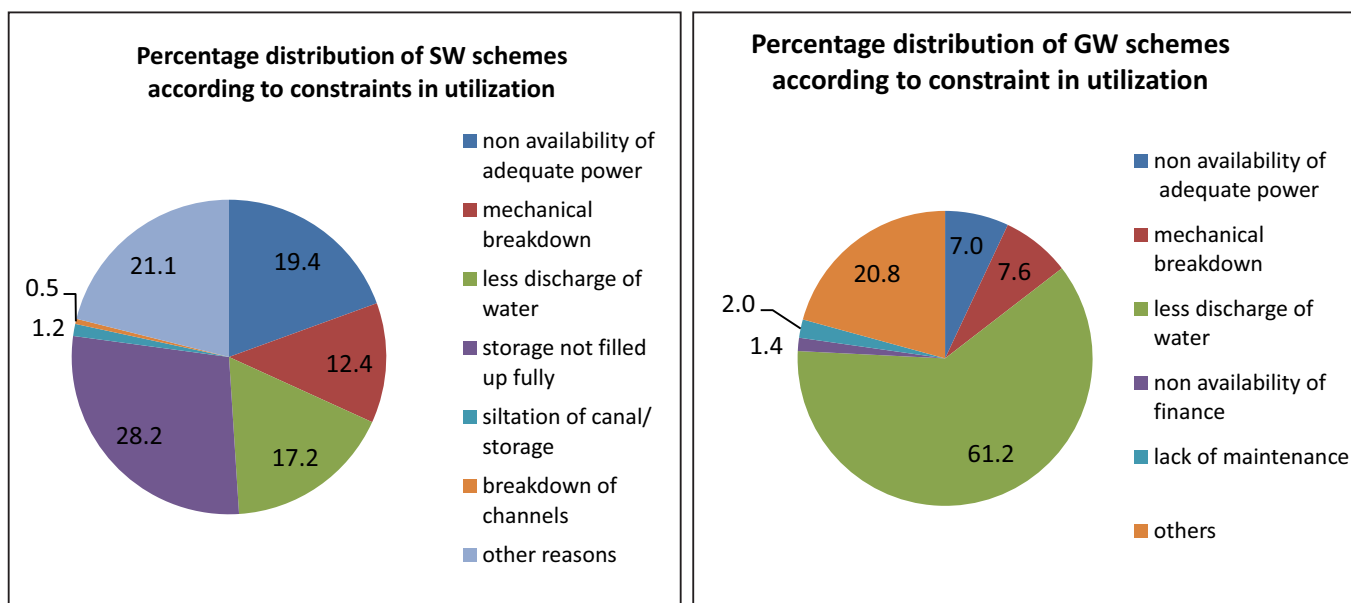
Dugwells have the highest IPC & IPU followed by deep tube well schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 88% utilization of the potential created except surface flow scheme with a utilization of 75.3%. A comparative chart showing 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 underutilized due to various constraints. As per the 6th MI Census, 1,52,238 (7.9%) schemes out of 19,34,232 'in use' schemes in Tamil Nadu are underutilized due to several reasons. Remaining 92.1% 'in use' MI schemes are functioning without any constraints.

Among 1,52,238 under-utilized schemes, 1,44,278 are GW schemes and 7,960 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'less discharge of water' whereas the SW schemes are underutilized due to storage not filled up fully, non-availability of adequate power, less discharge of water, mechanical break-down and other reasons. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



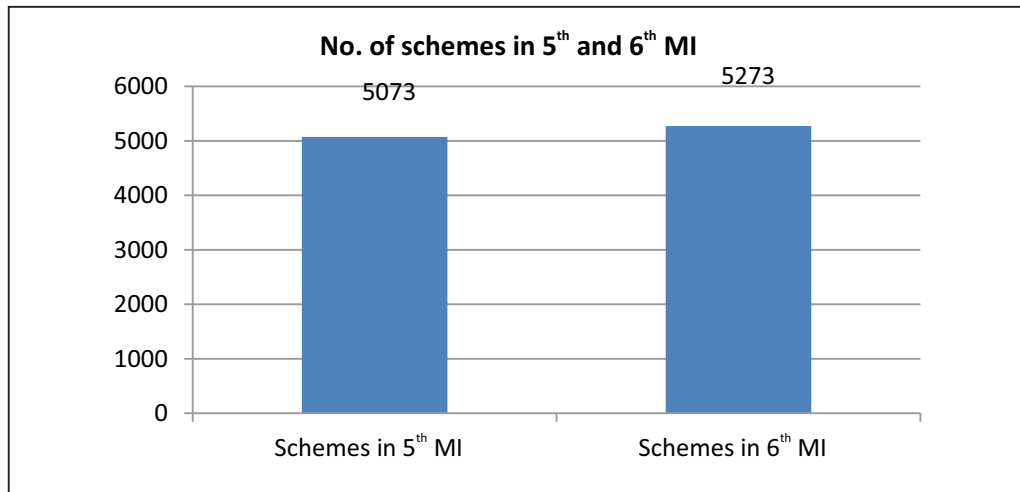
Key Parameters of 6 th MI Census - Tamil Nadu						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	15,77,198			74.58
	Shallow Tubewell	No.	89,026			4.21
	Medium Tubewell	No.	1,10,660			5.23
	Deep Tubewells	No.	2,93,934			13.90
	Ground Water schemes	No.	20,70,818			97.92
	Surface Flow	No.	39,711			1.88
	Surface Lift	No.	4,380			0.21
	Surface Water schemes	No.	44,091			2.08
	Total schemes	No.	21,14,909			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	54,84,642	4,74,579	59,59,220	
	IPC	Ha	59,58,002	5,05,176	64,63,178	
	IPU	Ha	53,41,389	3,83,717	57,25,106	
	IPC of in use schemes	Ha	57,15,555	4,69,201	61,84,757	
	IPU of in use schemes	Ha	52,10,576	3,61,592	55,72,168	
	% Ratio of IPU wrt IPC	%	89.65	75.96	88.58	
	Gap in IPC and IPU	Ha	6,16,613	1,21,459	7,38,072	
Ownership	Individual ownership	No.	14,21,074	7,628	14,28,702	67.55
	Group of Farmers	No.	6,14,145	3,019	6,17,164	29.18
	Public owned	No.	35,599	33,444	69,043	3.26
	Total	No.	20,70,818	44,091	21,14,909	100.00
Social Status of Individual Owner	SC	No.	1,10,860	1,096	1,11,956	7.84
	ST	No.	17,145	62	17,207	1.20
	OBC	No.	11,18,782	4,676	11,23,458	78.63
	Others	No.	1,74,287	1,794	1,76,081	12.32
	Total Individual	No.	14,21,074	7,628	14,28,702	100.00

Key Parameters of 6th MI Census - Tamil Nadu

Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	4,81,098	10,378	4,91,476	25.41
	Open Water Channel (unlined/ kutcha)	No.	9,72,512	17,797	9,90,309	51.20
	Underground pipe	No.	2,47,695	751	2,48,446	12.84
	Surface Pipe	No.	48,423	3,642	52,065	2.69
	Drip	No.	1,18,628	234	1,18,862	6.15
	Sprinklers	No.	3,519	288	3,807	0.20
	Others	No.	25,738	3,529	29,267	1.51
	Total	No.	18,97,613	36,619	19,34,232	100.00

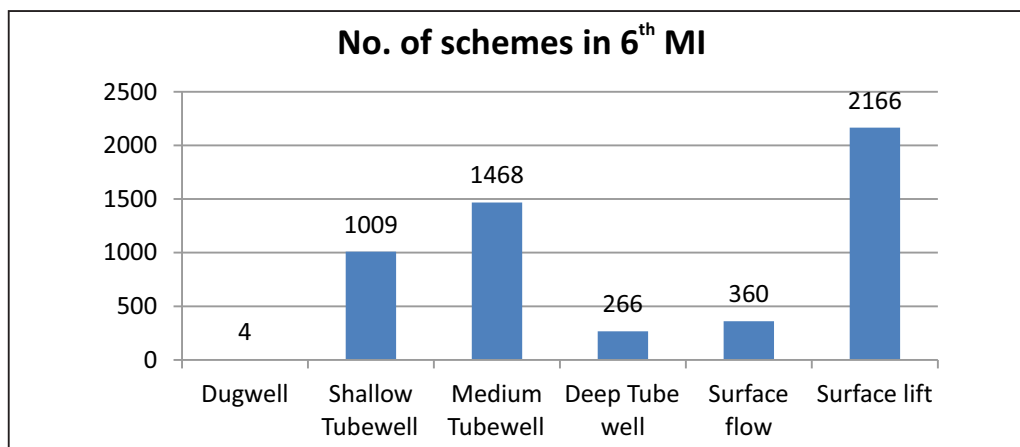
TRIPURA

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Tripura has 5,273 MI schemes comprising of 52.1 % (2,747) Ground Water (GW) schemes and 47.9% (2,526) Surface Water (SW) schemes. There is an increase to the tune of 3.9 % in 6th MI census as compared to the 5,073 schemes in 5th MI census in the State of Tripura.



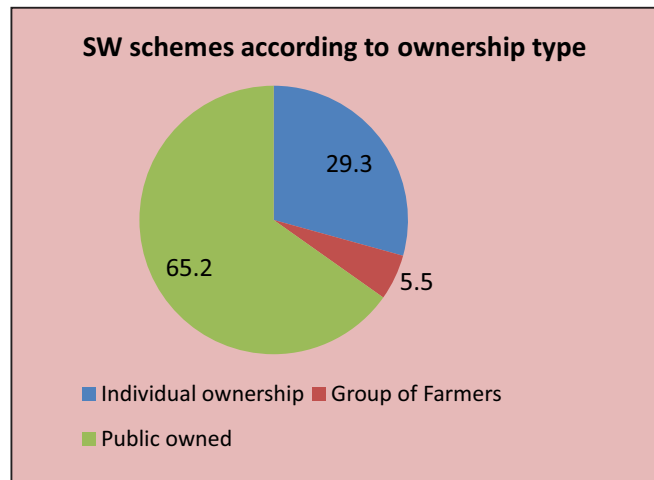
The State Government has reported a decline of 4.7 % (134) in GW schemes and increase of 15.2% (334) in SW schemes during 6th MI census as compared to the 2,881 GW schemes and 2,192 SW schemes recorded in 5th census.

Out of the 5,273 MI schemes reported in Tripura, 41.1% (2,166) are surface lift followed by 27.8% (1,468) medium tubewell and 19.1% (1,009) shallow tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

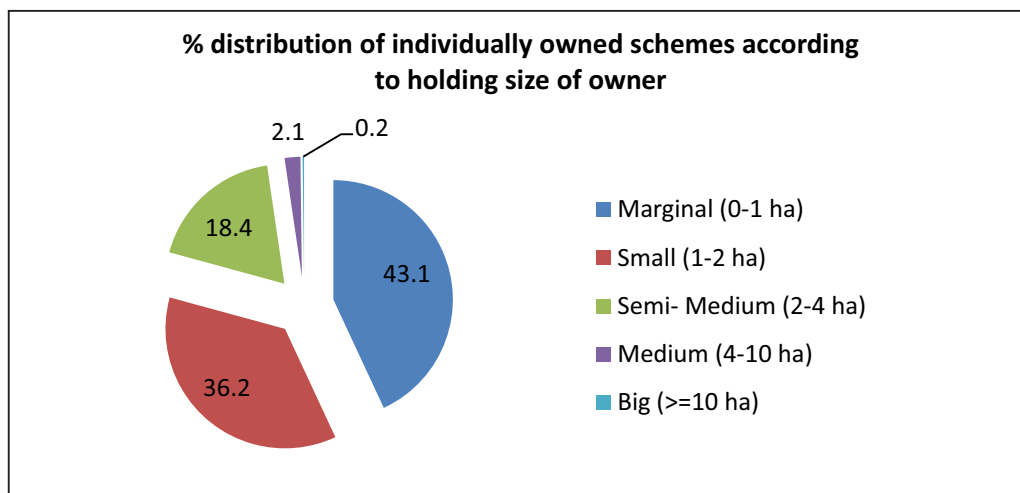


Ownership of MI schemes

Out of 5,273 MI schemes, 49% (2,582) schemes are under individual ownership, 46.6% (2,457) schemes are public owned and a small chunk of 4.4% (234) schemes are owned by group of farmers. Among 2,747 GW schemes, 67.1% (1,842) schemes are individually owned and among 2,526 SW schemes, 65.2% (1647) are public owned as depicted in the figure given below.



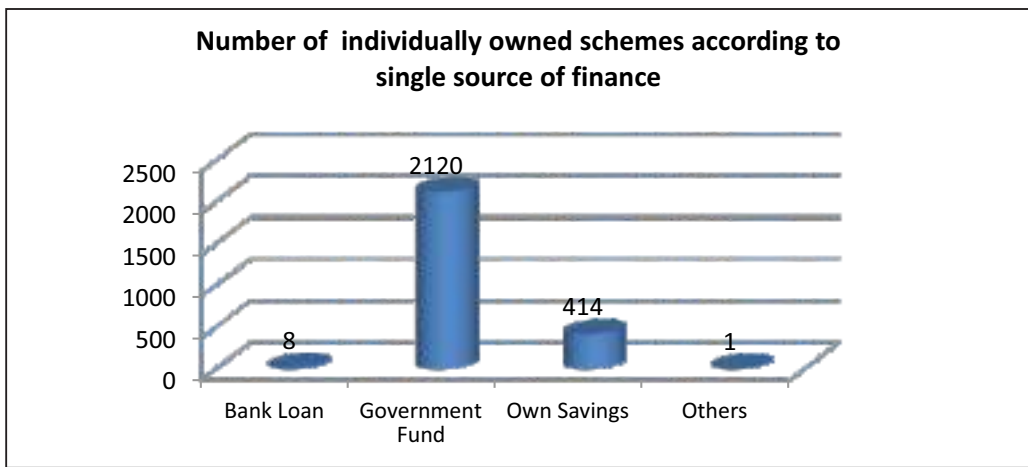
Out of the 2,582 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 79.2% (2,046) in MI schemes. Rest of the 20.8% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial role of improving the livelihood of small and marginal farmers.



Financing of MI schemes

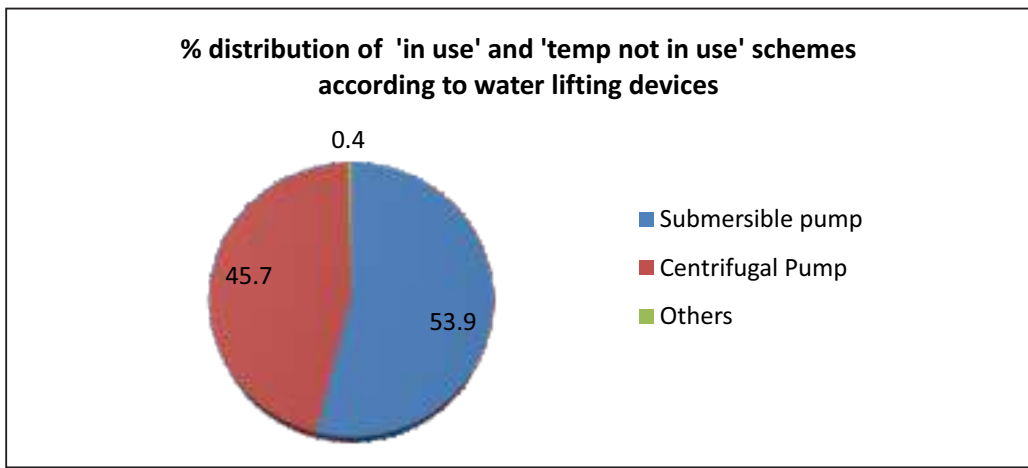
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 2,582 individually owned schemes, 98.5% (2,543) have single source of finance whereas 1.5% (39) have

more than one source of finance. In these schemes with single source of finance (2,543), majority of schemes i.e. 83.4% (2,120) are being financed by Government fund. 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

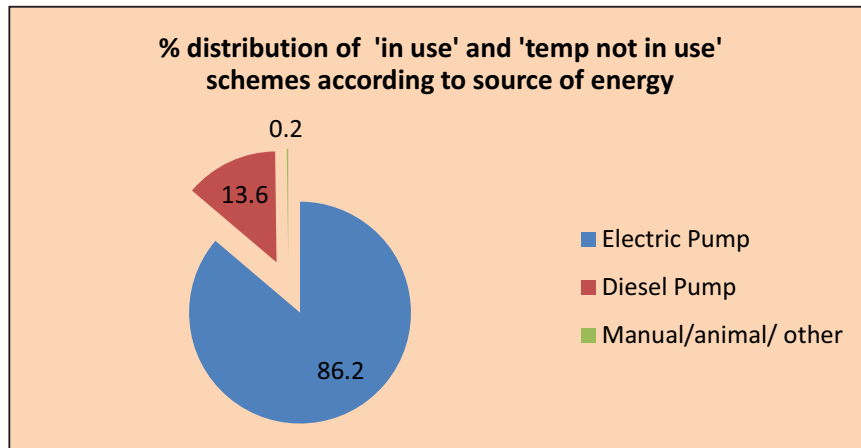
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 4,716 out of 5,273 MI schemes. Out of these 4,716 schemes, majority of schemes i.e 53.9% (2,540) have submersible pump and 45.7% (2,156) schemes have centrifugal pump as lifting device whereas 0.4% (20) schemes use turbine, manual/ animal and other devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



Distribution of source of energy

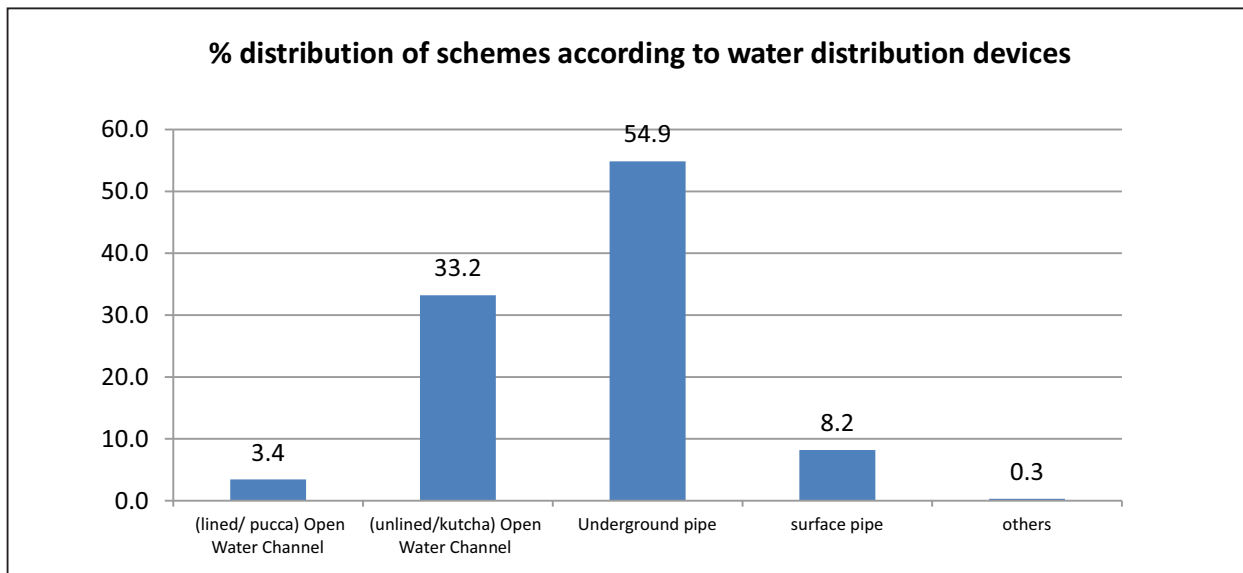
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 4,716. Out of these 4,716 schemes, majority of

schemes i.e. 86.2% (4,065) schemes are using electricity as source of energy followed by diesel pumps 13.6% (642). Remaining 0.2% (9) schemes are using manual/animal and other sources of energy. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



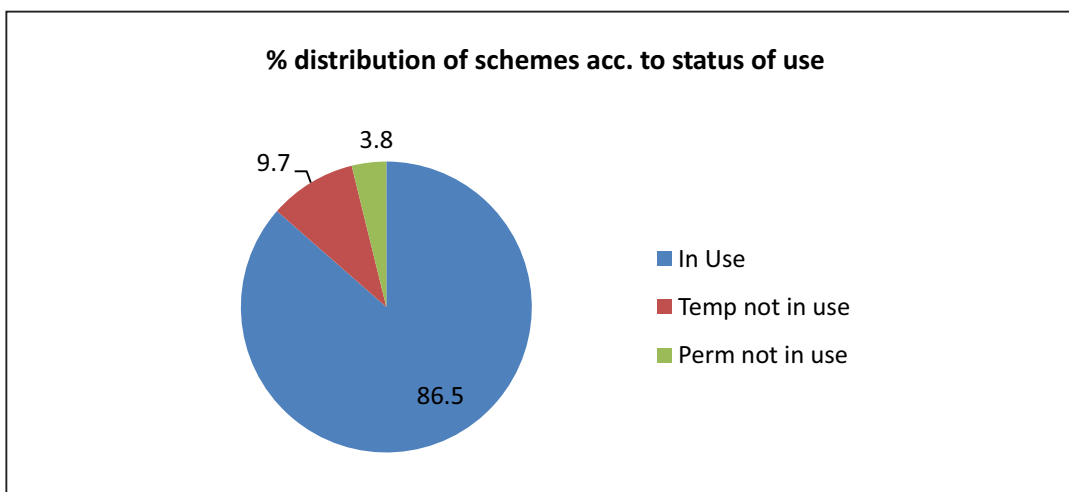
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through underground pipe is 54.9% (2,501) followed by open water channel (unlined/kutcha) 33.2% (1,514) and surface pipes 8.2% (374). The water distribution devices used in the rest of the MI schemes are 3.4% (156) open water channel (lined/pucca), 0.3% (14) other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

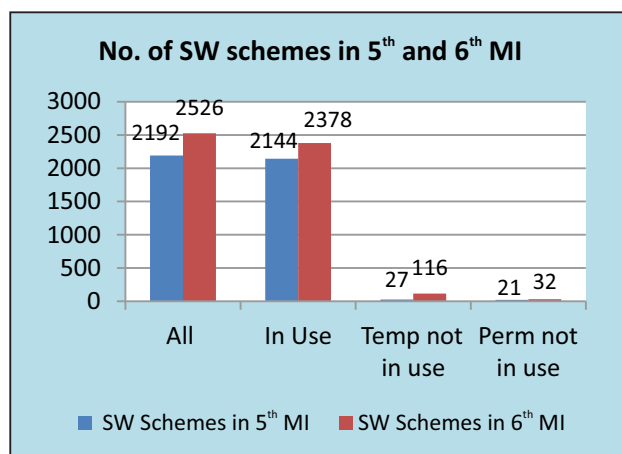
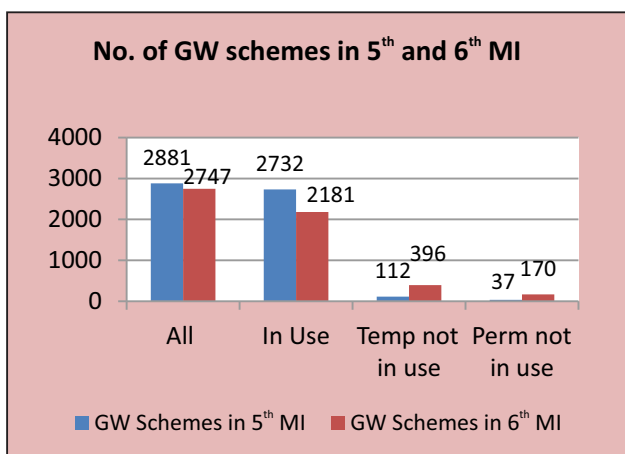


Status of MI schemes

Out of 5,273 MI schemes, 86.5% (4,559) are 'in use', 9.7% (512) are 'temporary not in use' and only 3.8 % (202) are 'permanently not in use' schemes which is depicted in the pie chart given below.

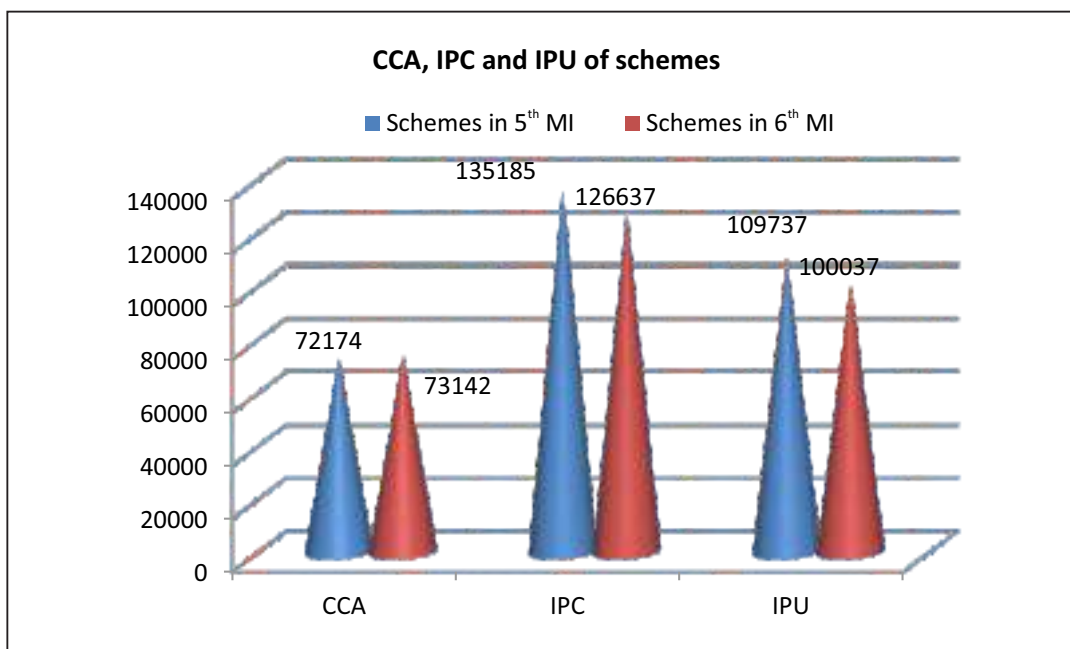


Out of 512 'temporary not in use' schemes, 396 are GW schemes and 116 are SW schemes. Among 202 'permanently not in use' schemes, 170 are GW schemes and 32 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

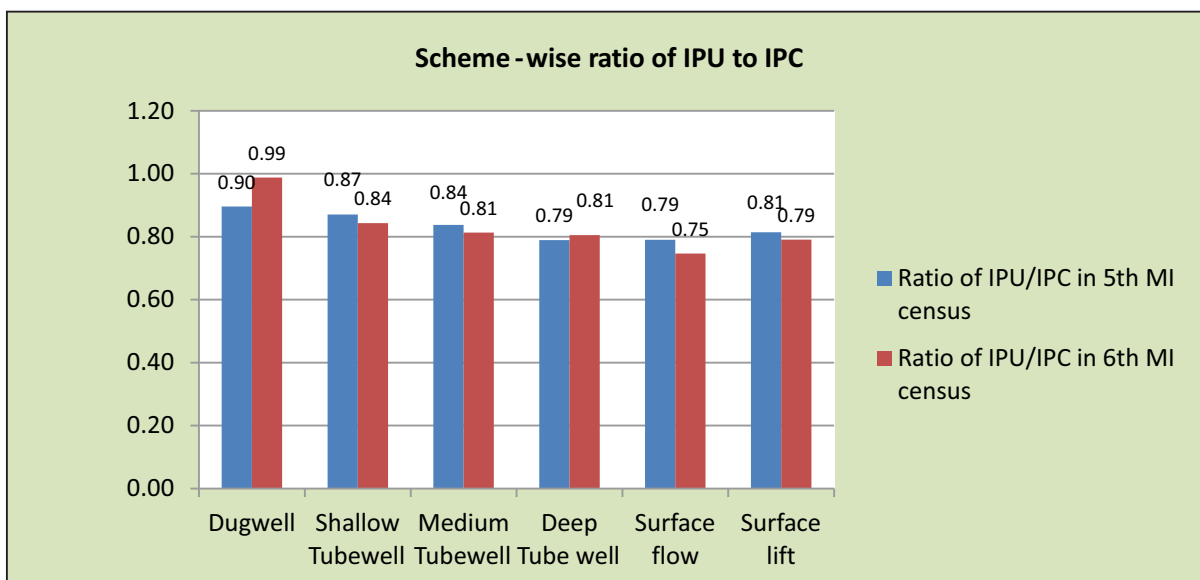
There has been a decline of 6.3% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has decreased from 1,35,185 hectares during 5th MI census to 1,26,637 hectares during 6th MI census. Irrigation potential utilized was 1,09,737 hectares during 5th MI Census in Tripura, which has declined by 8.8% 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, 16,719 hectares irrigation potential is created through GW schemes and 1,09,919 hectares through SW schemes. Irrigation potential utilized is 13,594 and 86,442 hectares for GW and SW schemes respectively. This shows that 81.3 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 78.6 %. The scheme-wise ratio of IPU to IPC in Tripura is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Tripura			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	8.3	8.2	0.99
Shallow Tubewell	2,623	2,211	0.84
Medium Tubewell	4,285	3,484	0.81
Deep Tube well	9,802	7,891	0.81
Surface flow	10,810	8,071	0.75
Surface lift	99,109	78,371	0.79

Surface lift schemes have the highest IPC & IPU followed by 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 80% utilization of the potential created except surface flow and surface lift schemes with a utilization of 75% and 79%, respectively. 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

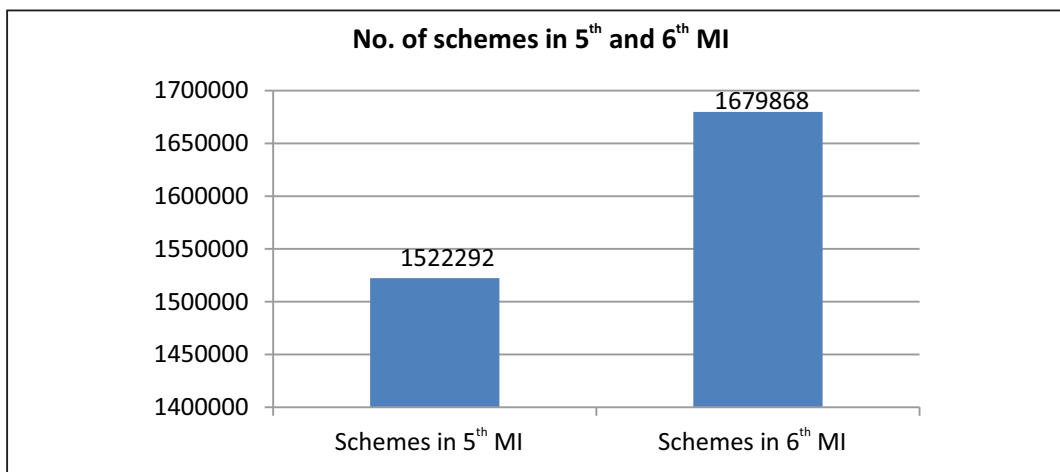
It is observed in the previous rounds of MI censuses that many 'in use' schemes were under-utilized due to various constraints. As per the 6th MI Census, only 8 schemes out of 4559 'in use' schemes in Tripura are under-utilized due to several reasons. Remaining schemes are functioning without any constraints. Among 8 under-utilized schemes, one is GW schemes and 7 are SW schemes.

Key Parameters of 6 th MI Census-Tripura						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	4			0.08
	Shallow Tubewell	No.	1,009			19.14
	Medium Tubewell	No.	1,468			27.84
	Deep Tubewells	No.	266			5.04
	Ground Water schemes	No.	2,747			52.10
	Surface Flow	No.	360			6.83
	Surface Lift	No.	2,166			41.08
	Surface Water schemes	No.	2,526			47.90
	Total schemes	No.	5,273			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	9,488	63,655	73,142	
	IPC	Ha	16,719	1,09,919	1,26,637	
	IPU	Ha	13,594	86,442	1,00,037	
	IPC of in use schemes	Ha	14,804	1,04,209	1,19,012	
	IPU of in use schemes	Ha	12,574	85,175	97,749	
	% Ratio of IPU wrt IPC	%	81.31	78.64	78.99	
	Gap in IPC and IPU	Ha	3,125	23,477	26,602	
Ownership	Individual ownership	No.	1,842	740	2,582	48.97
	Group of Farmers	No.	95	139	234	4.44
	Public owned	No.	810	1647	2,457	46.60
	Total	No.	2,747	2,526	5,273	100.00
Social Status of Individual Owner	SC	No.	420	125	545	21.11
	ST	No.	553	211	764	29.59
	OBC	No.	280	129	409	15.84
	Others	No.	589	275	864	33.46
	Total Individual	No.	1,842	740	2,582	100.00

Key Parameters of 6 th MI Census-Tripura						
Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	49	107	156	3.42
	Open Water Channel (unlined/ kutchra)	No.	904	610	1,514	33.21
	Underground pipe	No.	1,098	1,403	2,501	54.86
	Surface Pipe	No.	127	247	374	8.20
	Drip	No.	0	0	0	0.00
	Sprinklers	No.	0	0	0	0.00
	Others	No.	3	11	14	0.31
	Total	No.	2,181	2,378	4,559	100.00

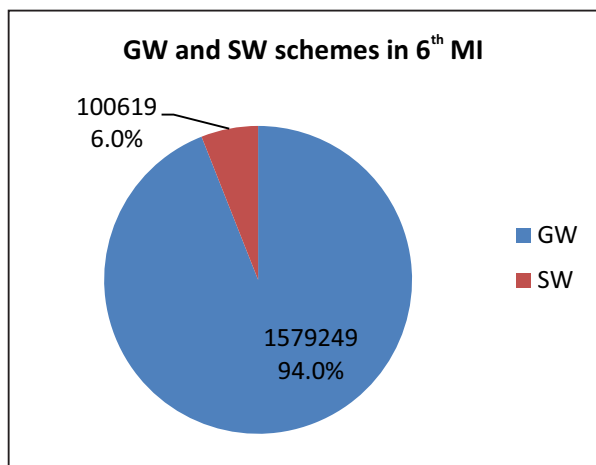
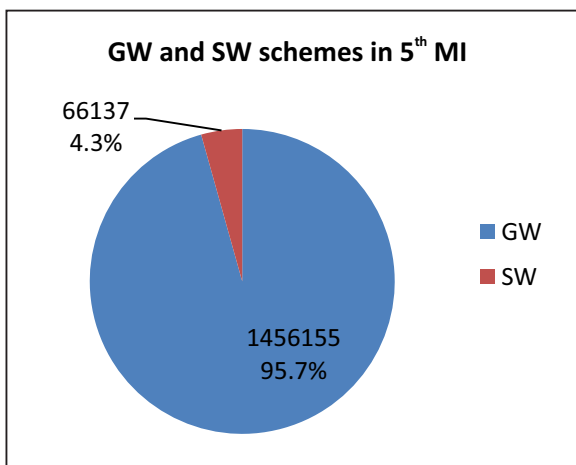
Telangana

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Telangana has 16,79,868 MI schemes comprising of 94.0% (15,79,249) Ground Water (GW) schemes and 6.0% (1,00,619) Surface Water (SW) schemes. There is an increase to the tune of 10.4% in 6th MI census as compared to the 15,22,292 schemes in 5th MI census in the State of Telangana.

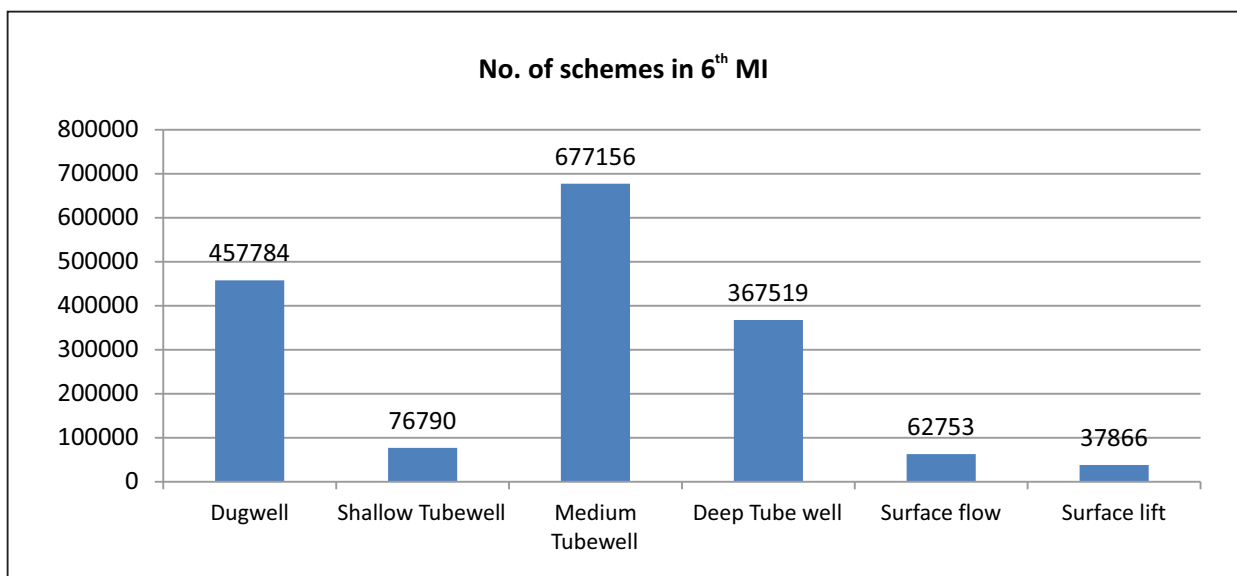


The State Government has reported an increase of 8.5% (1,23,094) in GW schemes and 52.1% (34,482) in SW schemes during 6th MI census as compared to the 14,56,155 GW schemes and 66,137 SW schemes recorded in 5th census.

Share of GW schemes in the State of Telangana has declined from 95.7% in 5th MI census to 94.0% in 6th MI census whereas share of SW schemes has increased from 4.3% in 5th MI census to 6.0% in 6th MI census as shown in the pie chart given below.

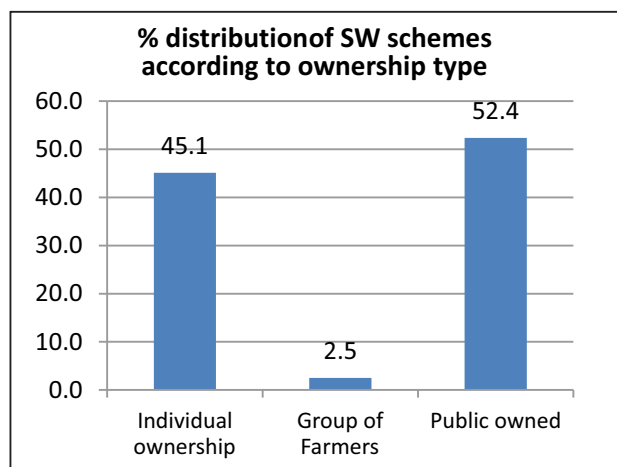
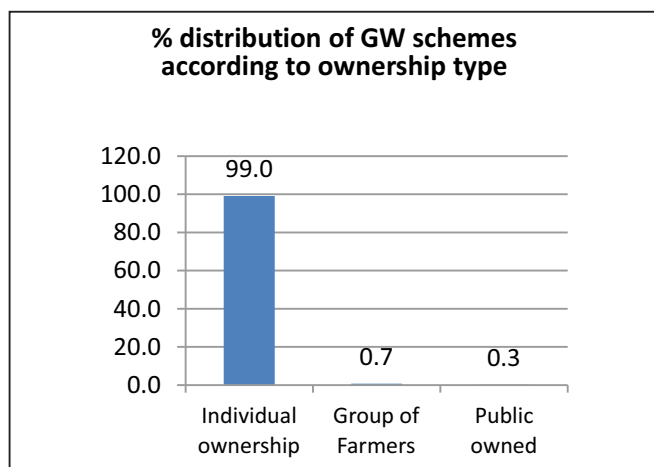


Out of the 16,79,868 MI schemes reported in Telangana, 40.3% (6,77,156) are medium tubewells followed by 27.3% (4,57,784) dugwells and 21.9% (3,67,519) deep tubewells. Distribution of different GW and SW schemes is shown in the chart given below.

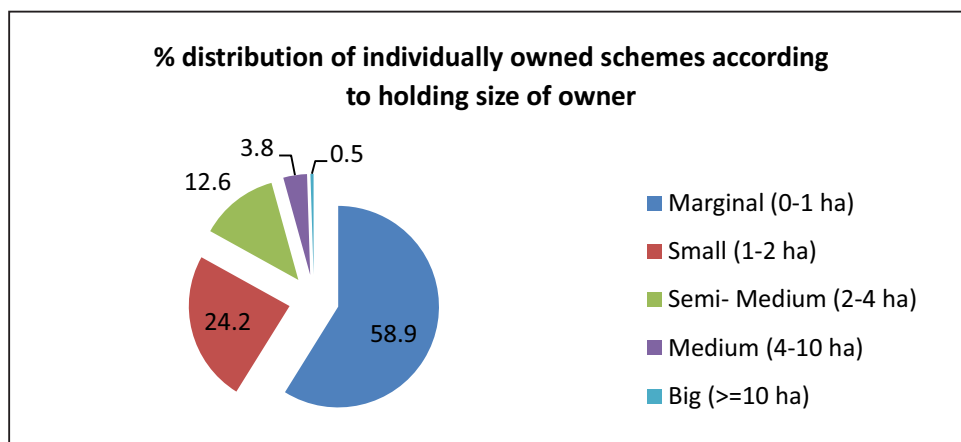


Ownership of MI schemes

Out of 16,79,868 MI schemes, majority of the schemes i.e. 95.8% (16,09,623) continue to remain under individual ownership, 3.4% (56,668) schemes are public owned and a small chunk of 0.8% (13,577) schemes are owned by group of farmers. Among 15,79,249 GW schemes, 99.0% (15,64,229) schemes are individually owned whereas among 1,00,619 SW schemes, 52.4% (52,703) are public owned. Most of MI structures in Telangana are owned by individual farmers as brought out in the figure given below. This shows that individual farmers are getting maximum benefit from minor irrigation schemes.

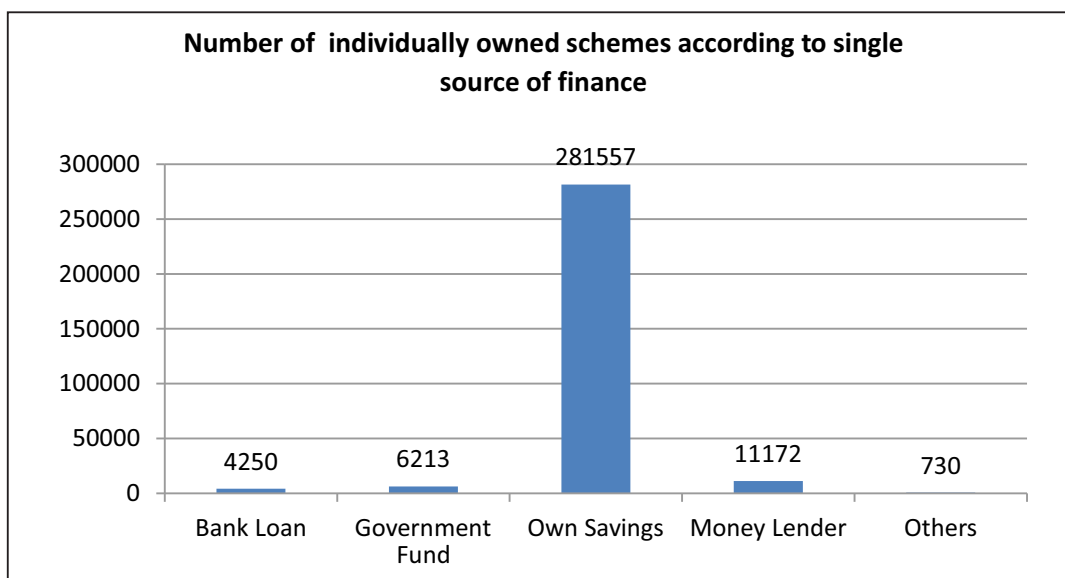


Out of 16,09,623 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 83.1% (13,36,767) in MI schemes. Rest of the 16.9% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the chart given below.



Financing of MI schemes

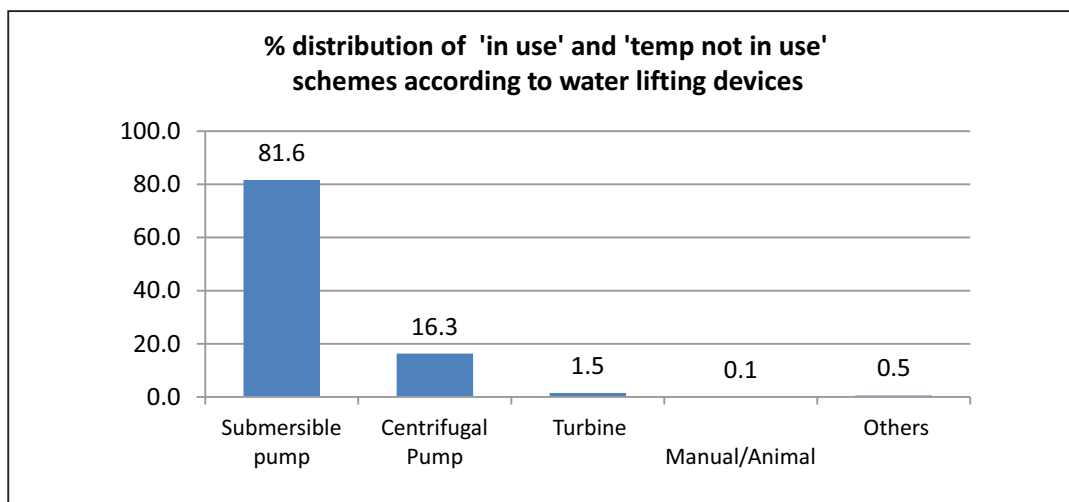
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 16,09,623 individually owned schemes, 18.9% (3,03,922) have single source of finance whereas 81.1% (13,05,701) have more than one source of finance. In these schemes with single source of finance (3,03,922), majority of schemes i.e. 92.6% (2,81,557) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 1.4% (4,250), Government fund 2.0% (6,213), money lenders 3.7% (11,172) and other sources 0.3% (730). 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

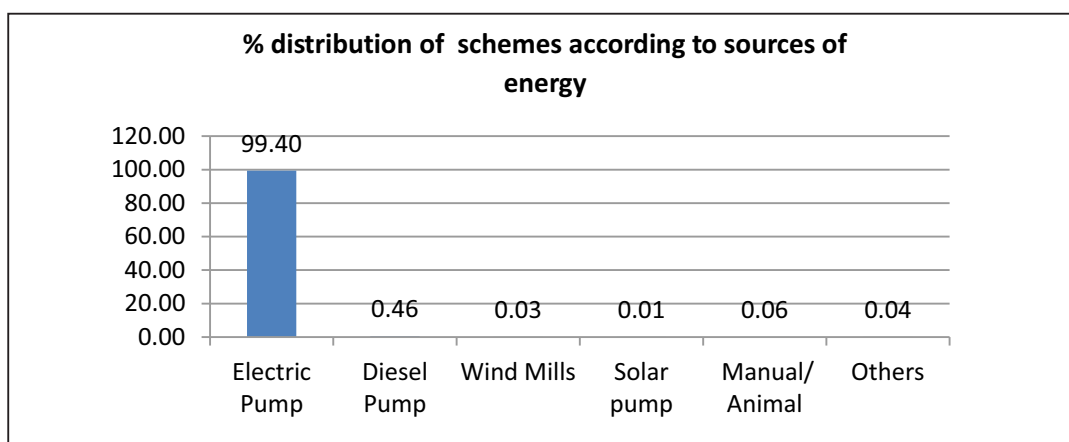
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 15,96,852, out of 16,79,868 MI schemes. Out of these (15,96,852) schemes, majority of schemes i.e. 81.6% (13,03,446) have submersible pump and 16.3% (2,60,626) schemes have centrifugal

pump as lifting device. 0.1% (893) schemes are being operated manually or by animal for water lifting purposes, 1.5% (23,260) are operated by turbines and rest 0.5% (8,627) use some other lifting devices. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



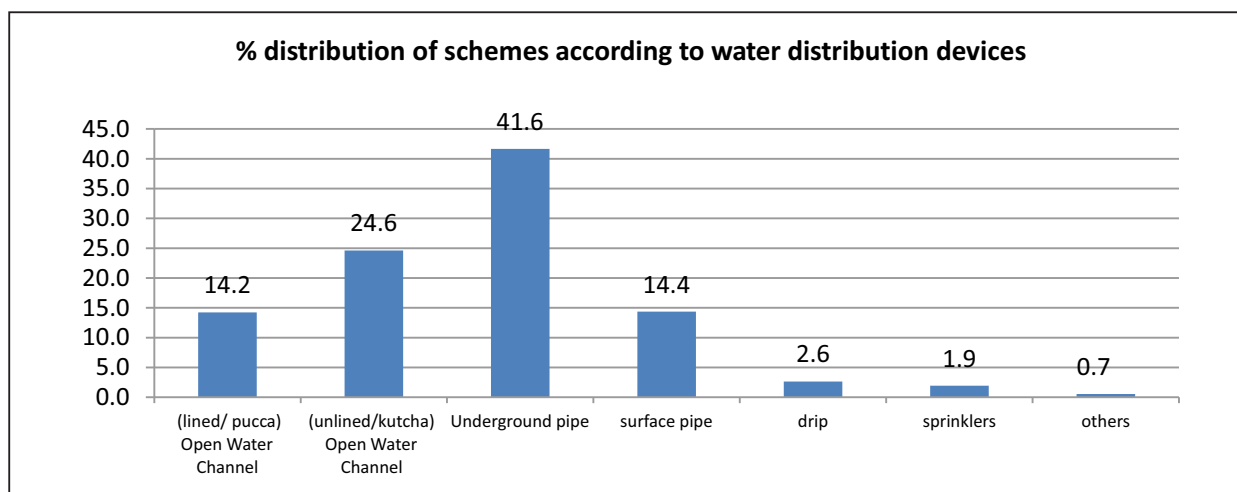
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 15,96,852. Out of these schemes, majority of schemes i.e 99.40% (15,87,211) schemes are using electricity as source of energy followed by diesel pumps in 0.46% (7,407) schemes. In rest of the cases, 0.06%(893) schemes are using manual/animal as source of energy followed by 0.03% (518) windmills, 0.01% (194) solar pumps and 0.04% (629) schemes are using other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



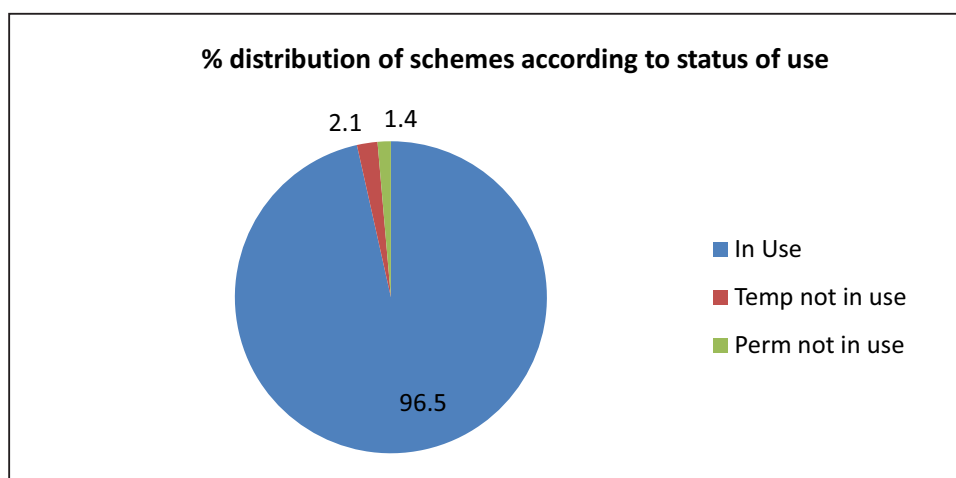
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through underground pipe is 41.6% (6,75,008) followed by open water channel (unlined/kutcha) 24.6% (3,98,977) and surface pipes 14.4% (2,32,821). The water distribution devices used in the rest of the MI schemes are 14.2% (2,30,859) open water channel (lined/pucca), 2.6% (42,858) Drip, 1.9% (31,523) sprinklers and 0.7% (9,045) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

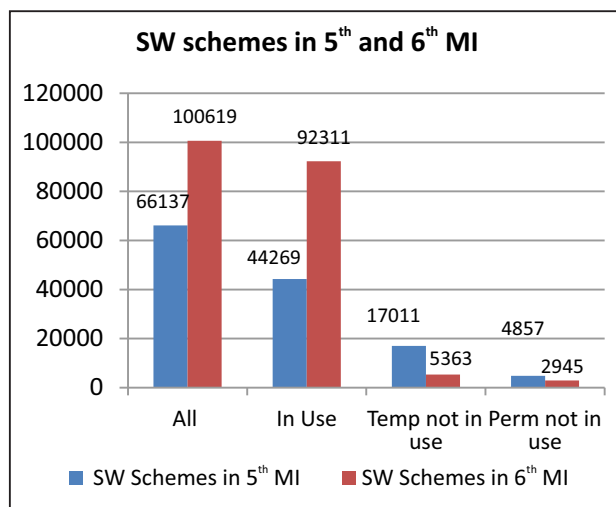
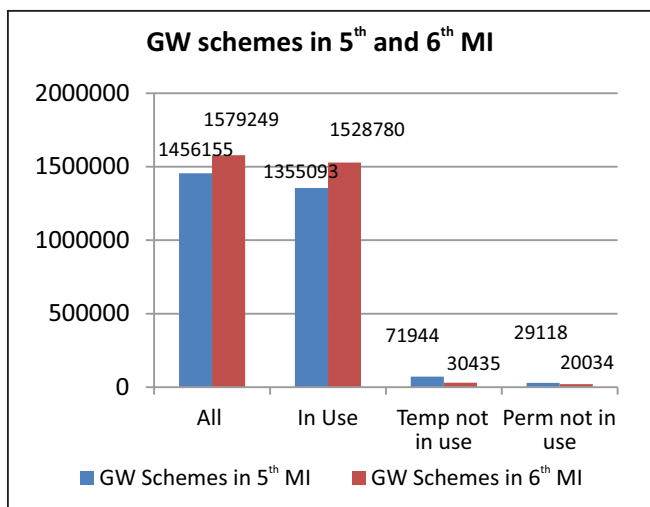


Status of MI schemes

Out of 16,79,868 MI schemes, 96.5%(16,21,091) are 'in use', 2.1% (35,798) are 'temporarily not in use' and only 1.4% (22,979) are 'permanently not in use' schemes which is depicted in the pie chart given below.

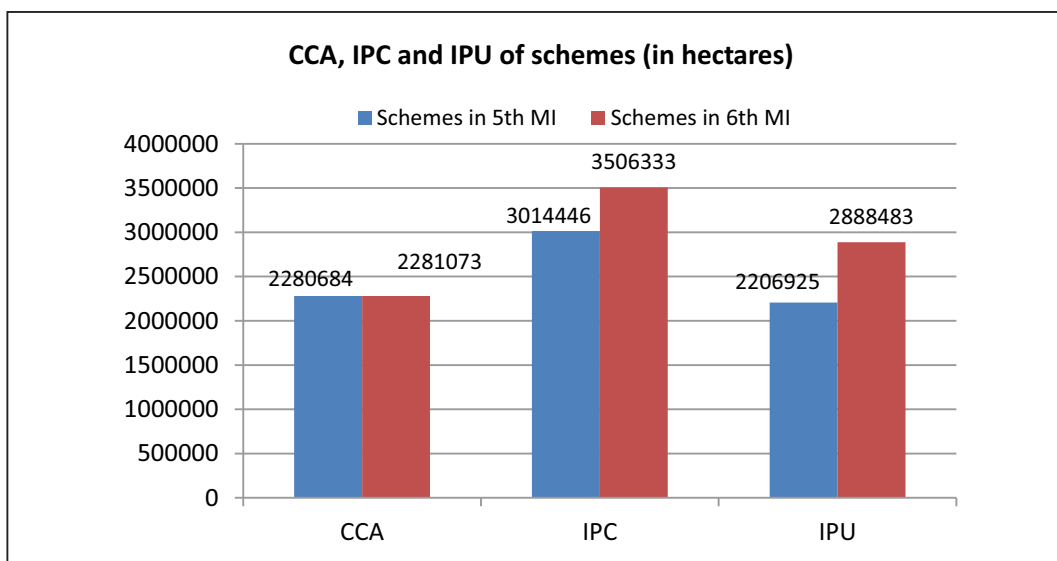


Out of 35,798 'temporarily not in use' schemes, 30,435 are GW schemes and 5,363 are SW schemes. Among 22,979 'permanently not in use' schemes, 20,034 are GW schemes and 2,945 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

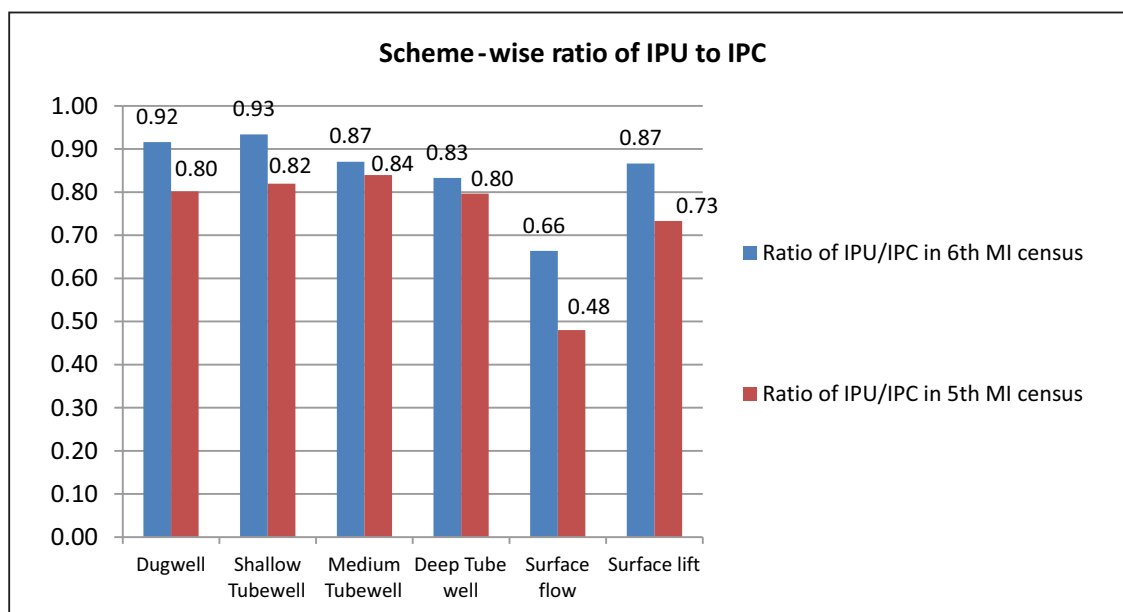
There has been increase of 16.3% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has increased from 30,14,446 hectares during 5th MI census to 35,06,333 hectares during 6th MI census. Irrigation potential utilized was 22,06,925 hectares during 5th MI Census in Telangana, which has increased by 30.9% 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, 25,53,032 hectares irrigation potential is created through GW schemes and 9,53,301 hectares through SW schemes. Irrigation potential utilized is 22,38,109 and 6,50,374 hectares for GW and SW schemes respectively. This shows that 87.7% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 68.2%. The scheme-wise ratio of IPU to IPC in Telangana is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Telangana			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	6,04,889	5,54,107	0.92
Shallow Tubewell	1,31,424	1,22,744	0.93
Medium Tubewell	12,83,862	11,17,451	0.87
Deep Tube well	5,32,678	4,43,611	0.83
Surface flow	8,66,550	5,75,218	0.66
Surface lift	86,751	75,156	0.87

Medium tube wells have the highest IPC & IPU. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 80% utilization of the potential created except surface flow schemes with a utilization of 66%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.

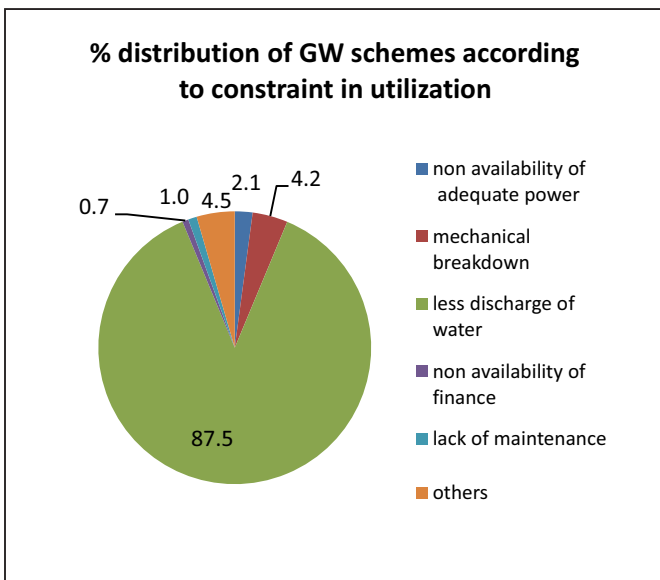
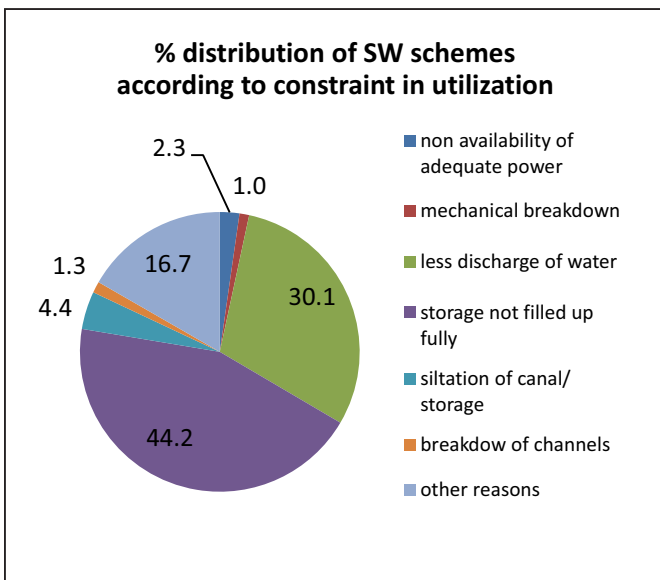


Underutilization of In Use schemes

It is observed in the previous rounds of MI censuses that many 'in use' schemes were underutilized due to various constraints. As per the 6th MI Census, 2,86,282 (17.7%) schemes out of 16,21,091 'in use' schemes in Telangana are under-utilized due to several reasons. Remaining 82.3% 'in use' MI schemes are functioning without any constraints.

Among 2,86,282 under-utilized schemes, 2,71,219 are GW schemes and 15,063 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be less discharge of

water whereas the SW schemes are underutilized mainly due to storage not filled up fully and less discharge of water. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



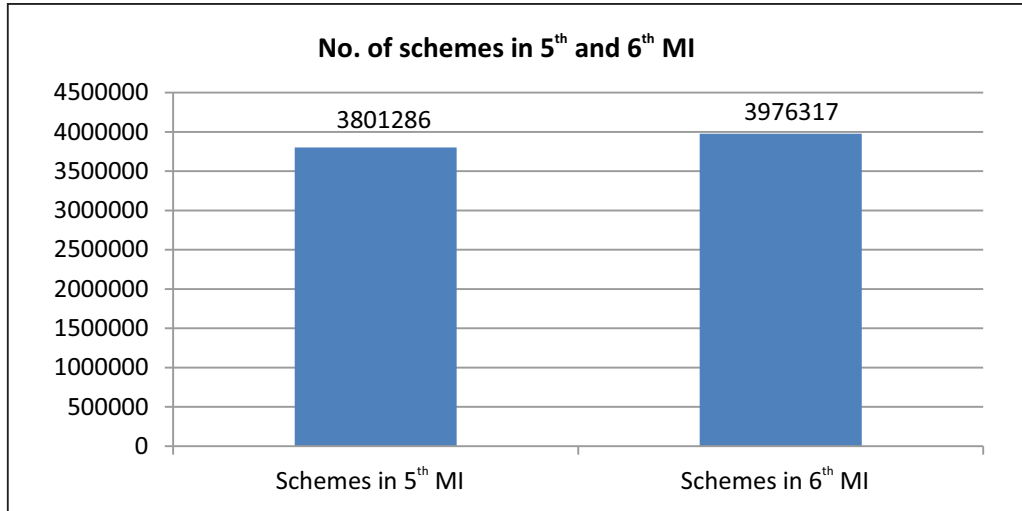
Key Parameters of 6 th MI Census-Telangana						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	4,57,784			27.25
	Shallow Tubewell	No.	76,790			4.57
	Medium Tubewell	No.	6,77,156			40.31
	Deep Tubewells	No.	3,67,519			21.88
	Ground Water schemes	No.	15,79,249			94.01
	Surface Flow	No.	62,753			3.74
	Surface Lift	No.	37,866			2.25
	Surface Water schemes	No.	1,00,619			5.99
	Total schemes	No.	16,79,868			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	16,23,548	6,57,525	22,81,073	
	IPC	Ha	25,53,032	9,53,301	35,06,333	
	IPU	Ha	22,38,109	6,50,374	28,88,483	
	IPC of in use schemes	Ha	25,05,812	9,05,845	34,11,657	
	IPU of in use schemes	Ha	22,17,299	6,42,973	28,60,272	
	% Ratio of IPU wrt IPC	%	87.66	68.22	82.38	
	Gap in IPC and IPU	Ha	3,14,923	3,02,927	6,17,850	
Ownership	Individual ownership	No.	15,64,229	45,394	16,09,623	95.82
	Group of Farmers	No.	11,055	2,522	13,577	0.81
	Public owned	No.	3,965	52,703	56,668	3.37
	Total	No.	15,79,249	1,00,619	16,79,868	100.00
Social Status of Individual Owner	SC	No.	1,76,035	4,776	1,80,811	11.23
	ST	No.	1,78,297	6,527	1,84,824	11.48
	OBC	No.	8,63,451	25,218	8,88,669	55.21
	Others	No.	3,46,446	8,873	3,55,319	22.07
	Total Individual	No.	15,64,229	45,394	16,09,623	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	2,13,160	17,699	2,30,859	14.24

Key Parameters of 6th MI Census-Telangana

Parameter		Unit	Value			%
	Open Water Channel (unlined/ kutchra)	No.	3,65,570	33,407	3,98,977	24.61
	Underground pipe	No.	6,57,070	17,938	6,75,008	41.64
	Surface Pipe	No.	2,21,748	11,073	2,32,821	14.36
	Drip	No.	42,033	825	42,858	2.64
	Sprinklers	No.	27,719	3,804	31,523	1.94
	Others	No.	1,480	7,565	9,045	0.56
	Total	No.	15,28,780	92,311	16,21,091	100.00

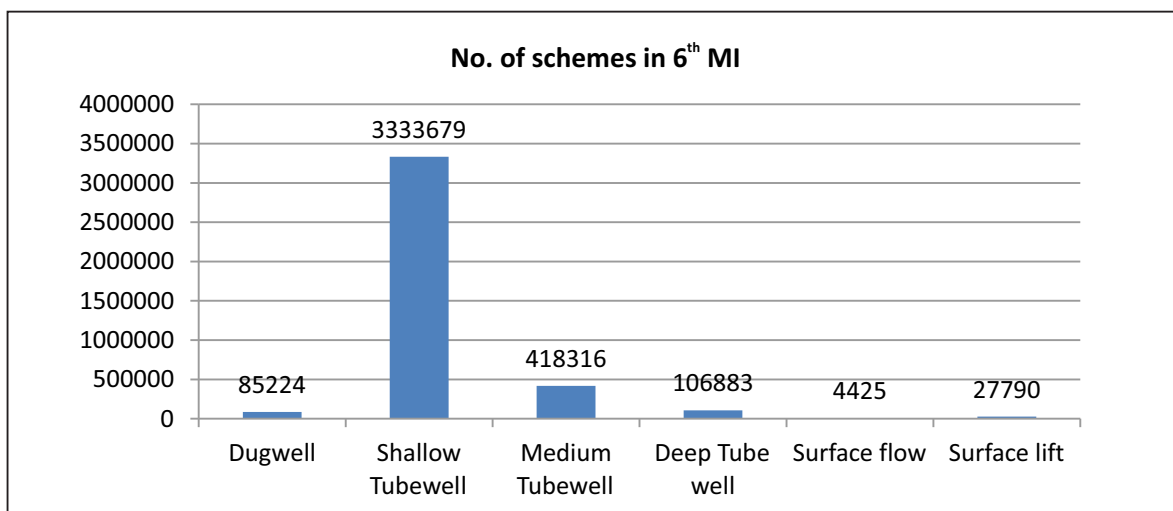
UTTAR PRADESH

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Uttar Pradesh has 39,76,317 MI schemes comprising of 99.2% (39,44,102) Ground Water (GW) schemes and 0.8% (32,215) Surface Water (SW) schemes. There is an increase to the tune of 4.6% in 6th MI census as compared to the 3801286 schemes in 5th MI census in the State of Uttar Pradesh.



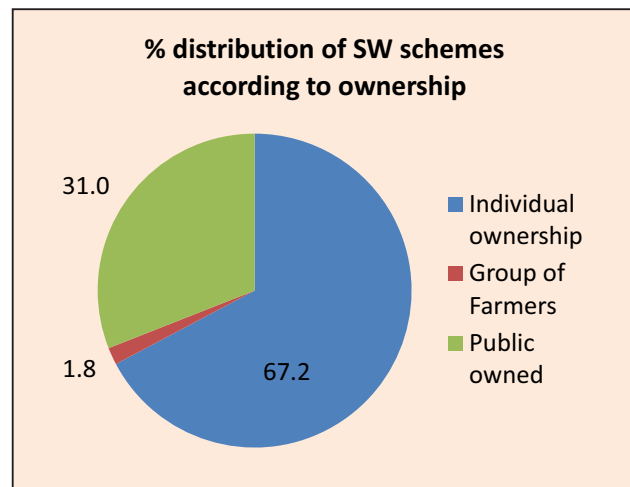
The State Government has reported increase of 4.4% (1,65,760) in Ground Water schemes and 40.4% (9,271) in Surface Water schemes during 6th MI census as compared to the 37,78,342 GW schemes and 22,944 SW schemes recorded in 5th census.

Out of the 39,76,317 MI schemes reported in Uttar Pradesh, 83.8% (33,33,679) are Shallow Tubewell followed by 10.5% (4,18,316) Medium Tubewell and 2.7% (1,06,883) Deep Tubewell schemes. Distribution of different Ground Water and Surface Water schemes is shown in the chart given below.

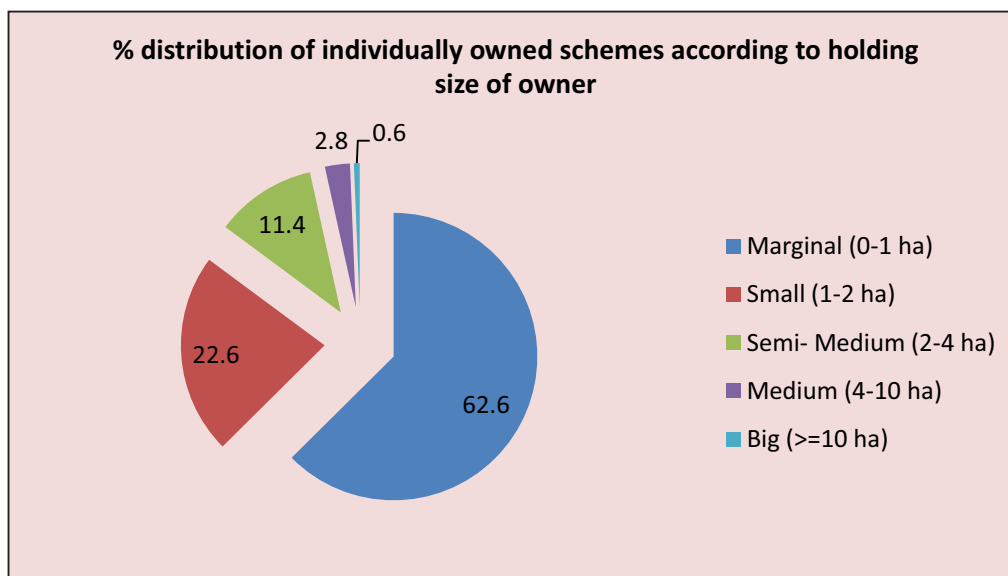


Ownership of MI schemes

Out of 39,76,317 MI schemes, majority of the schemes i.e. 99.33% (39,49,629) are under individual ownership, 0.63% (25,202) schemes are public owned and a small chunk of 0.04% (1,486) schemes are owned by group of farmers. Among 39,44,102 GW schemes, 99.6% (39,27,964) schemes are individually owned and among 32,215 SW schemes, 67.2% (21,665) are owned by individual farmers. Most of MI structures in Uttar Pradesh are owned by individual farmer which is also shown in the figures given below.

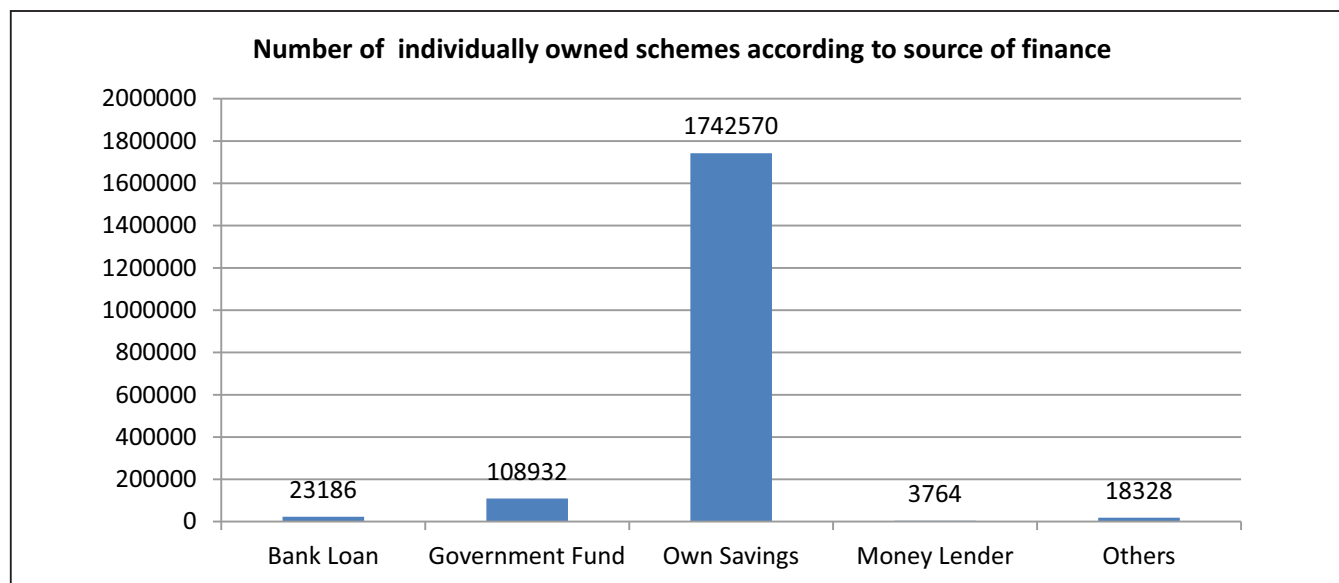


Out of the total 39,49,629 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 85.2% (33,63,018) in MI Schemes. Rest of the 14.8% schemes are owned by Semi-Medium farmers to Big farmers with holding size more than 2 hectares which is shown in the pie chart given below.



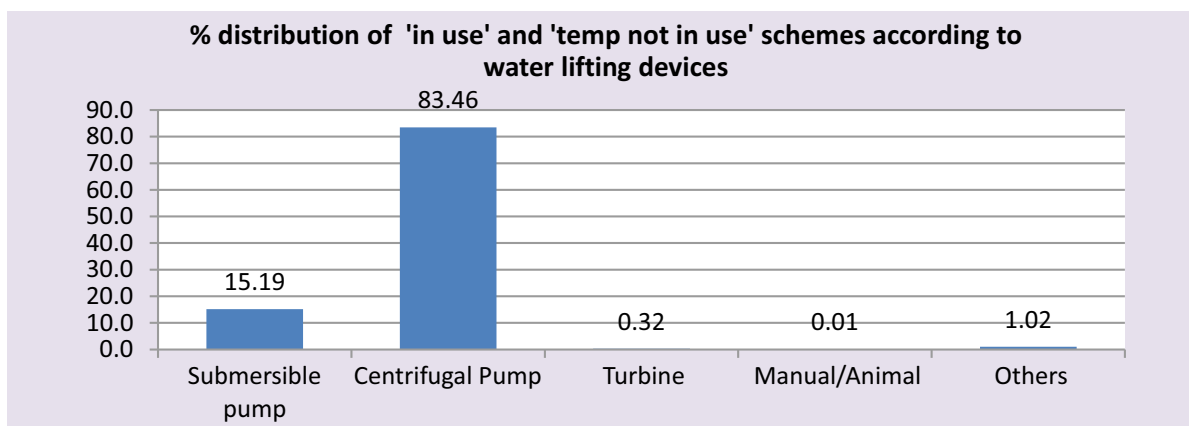
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of the total 39,49,629 individually owned schemes, 48.0% (18,96,780) have single source of finance whereas 52.0% (20,52,849) have more than one source of finance. In these schemes with single source of finance (18,96,780), majority of schemes i.e. 91.9% (17,42,570) are being financed by own savings of individual farmer. Other reported sources of finance are Government fund 5.7% (1,08,932), bank loan 1.2% (23,186), money lenders 0.2% (3,764) and others 1.0% (18,328). Distribution of individually owned MI schemes according to source of finance is depicted in the chart given below.



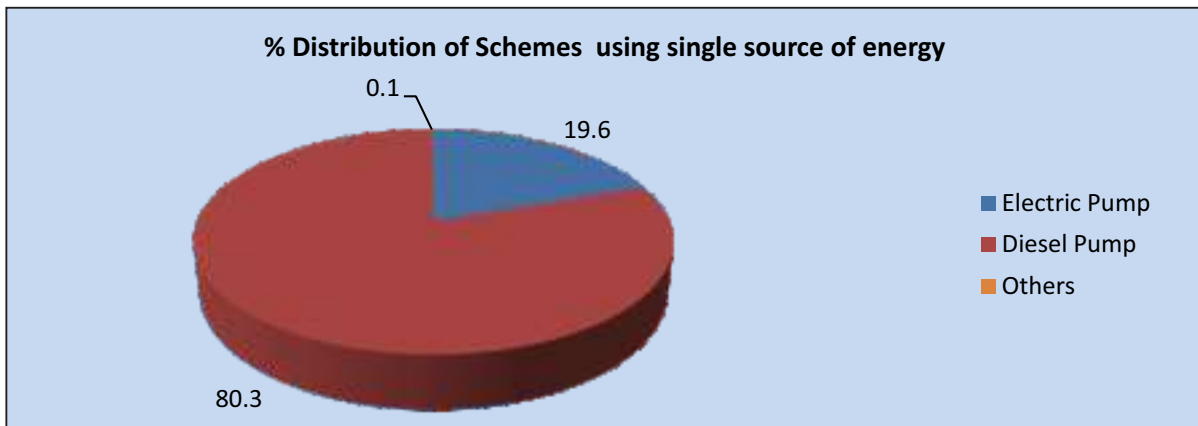
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 39,61,904, out of the total 39,76,317 MI schemes. Out of these (39,61,904) schemes, majority of schemes i.e. 83.46% (33,06,523) have centrifugal pump and 15.19% (6,01,750) schemes have submersible pump as lifting device, 0.32% (12,753) schemes are operated by turbines, 0.01% (345) are being operated manually or by animal for water lifting purposes and rest 1.02% (40,533) 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

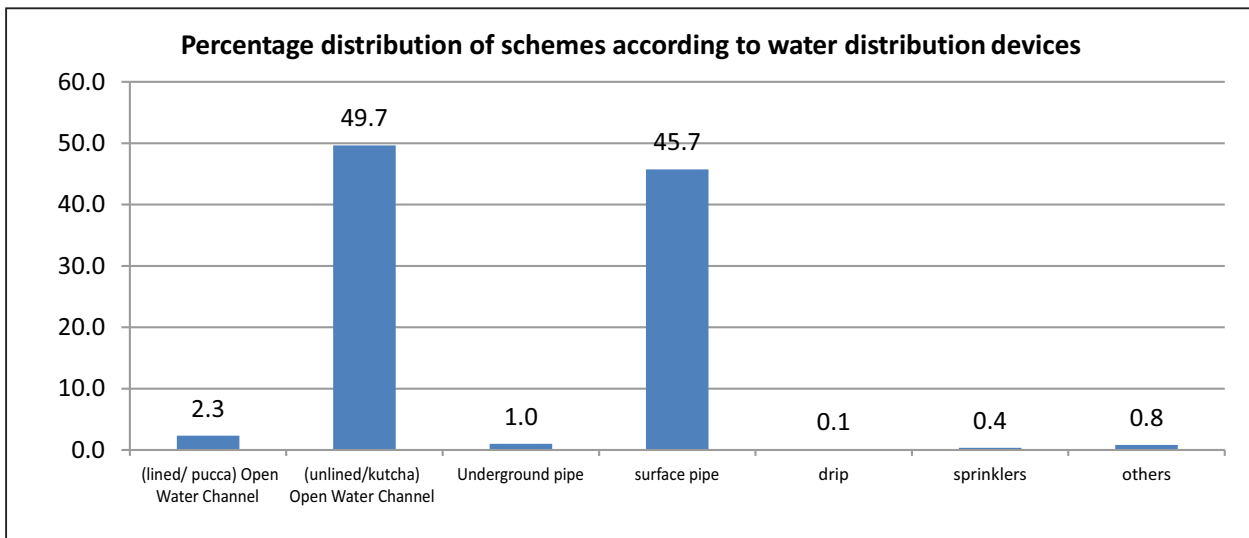
The information on 'source of energy' was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 39,61,904. Out of these (39,61,904) schemes, majority of schemes i.e 80.3% (31,81,209) schemes are using diesel pumps as source of energy followed by electricity 19.6% (7,76,882). In rest of the cases, solar pumps, windmills, manual/animal and other sources are used as sources of energy. The percentage distribution of schemes according to source of energy is shown in the pie chart given below.



Note: Category 'Others' include solar pumps, windmills, manual/animal and other sources of energy

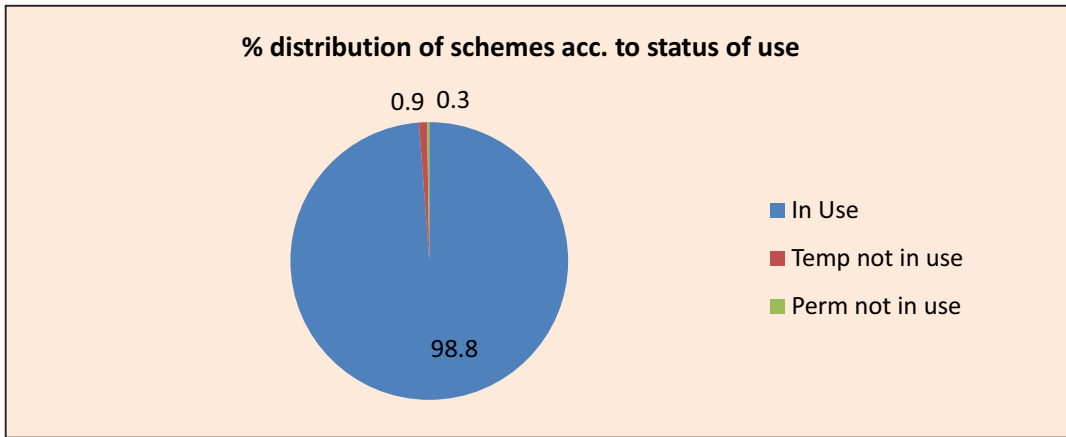
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 49.7% (19,50,908) followed by 45.7% (17,96,567) surface pipe and 2.3% (92,211) open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are 1.0% (39,554) underground pipe, 0.4% sprinklers (13,546), 0.1% (4,245) Drip and 0.8% (32,079) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

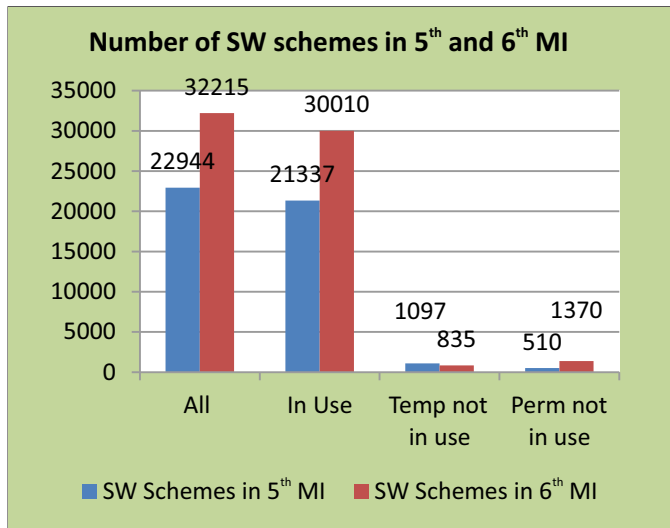
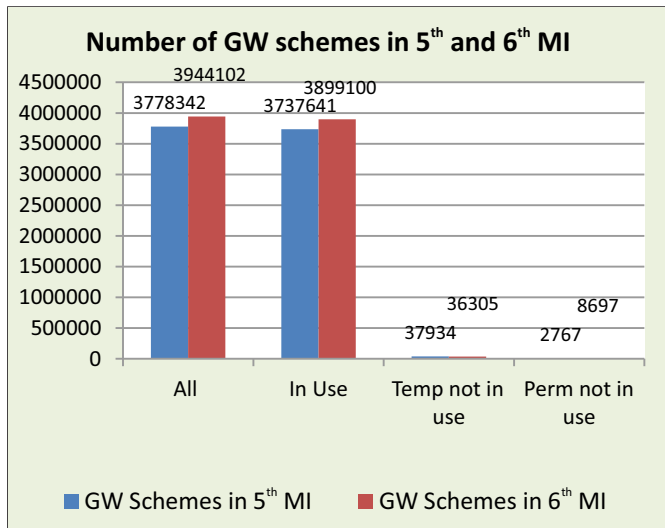


Status of MI schemes

Out of total number of 39,76,317 MI schemes, 98.8% (39,29,110) are 'in Use', 0.9% (37,140) are 'temporarily Not in Use' and only 0.3 % (10,067) are 'permanently Not in Use' schemes which is depicted in the pie chart given below.



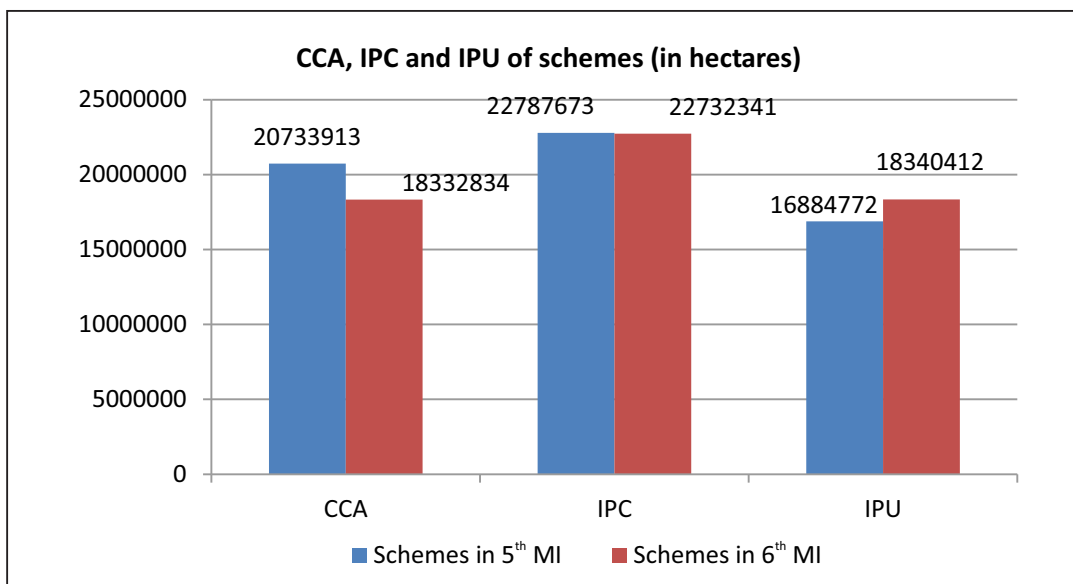
Out of 37,140 'temporarily not in Use' schemes, 36,305 are Ground Water (GW) schemes and 835 are Surface Water (SW) schemes. Among 10,067 'permanently not in Use' schemes, 8,697 are GW schemes and 1,370 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been marginal decline of 0.2 % 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 has declined from 2,27,87,673 hectares during 5th MI census to 2,27,32,341 hectares during 6th MI census.

Irrigation potential utilized was 1,68,84,772 hectares during 5th MI Census in Uttar Pradesh, which has increased by 8.6% 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.

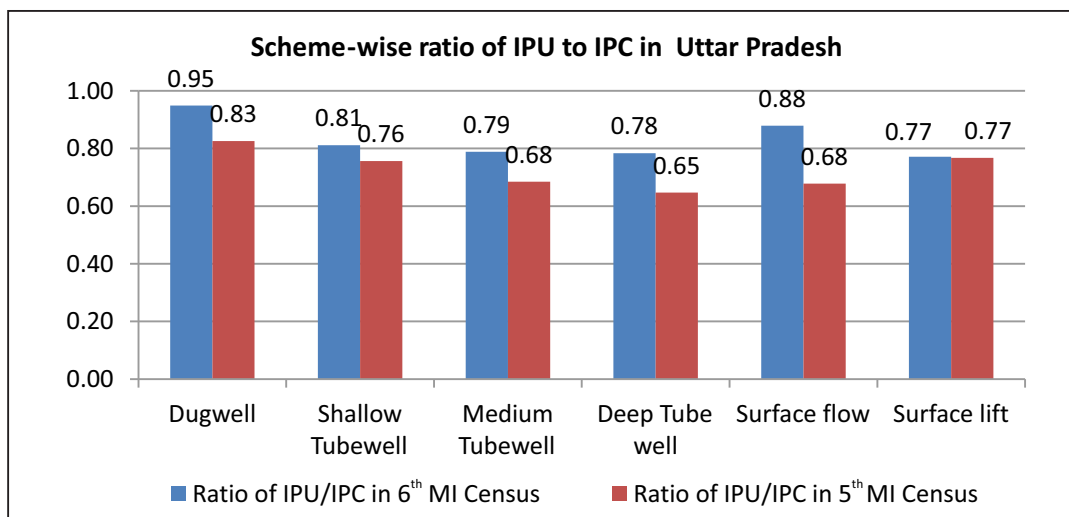


As per 6th MI Census, 2,24,66,782 hectares irrigation potential is created through Ground Water schemes and 2,65,559 hectares through Surface Water schemes. Irrigation potential utilized is 1,81,31,151 and 2,09,261 for GW and SW schemes respectively. This shows that 81 % of the potential created through Ground Water schemes has been utilized while percentage utilization in respect of Surface Water schemes is 79 %. The scheme-wise ratio of IPU to IPC in Uttar Pradesh is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Uttar Pradesh			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	321761	305277	0.95
Shallow Tubewell	16368658	13278870	0.81
Medium Tubewell	4052547	3196376	0.79
Deep Tubewell	1723816	1350628	0.78
Surface flow	40957	35991	0.88
Surface lift	224602	173271	0.77

If we analyse further at scheme level, Shallow Tubewells have the highest IPC & IPU followed by Medium Tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, Dugwell schemes show more than 95% utilization of the potential created while other schemes are showing less than 90%

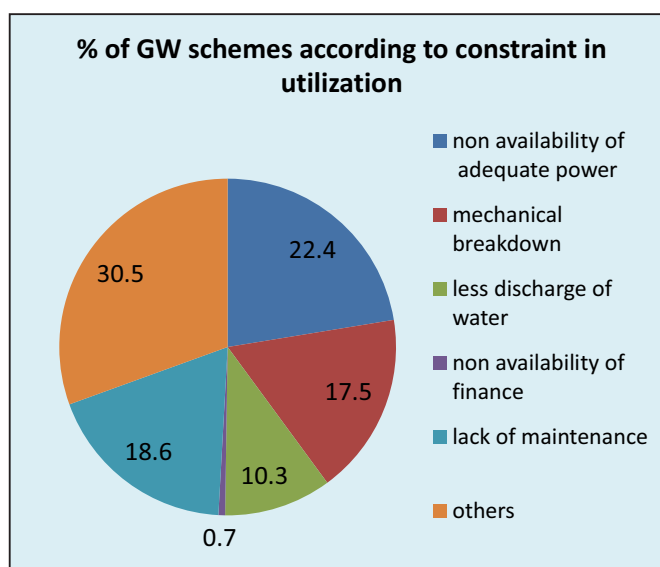
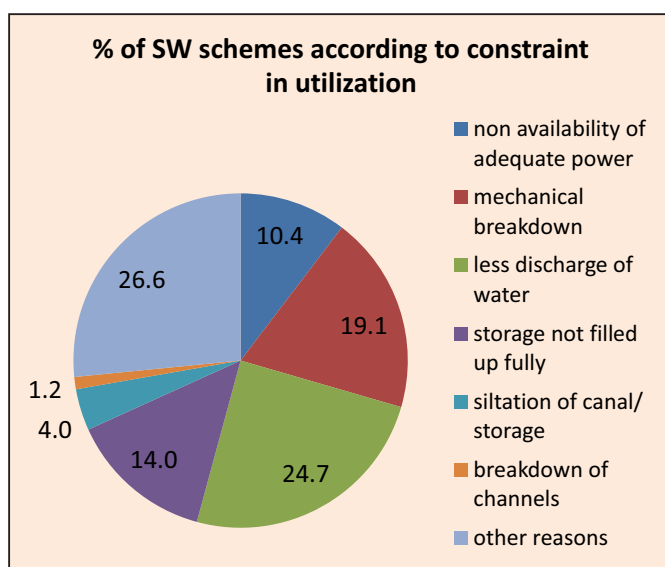
utilization. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.



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, out of 39,29,110 'in Use' schemes in Uttar Pradesh, 72,669 (1.8%) schemes are under-utilised due to several reasons. Remaining 98.2% 'In Use' MI schemes are functioning without any constraints.

Among 72,669 under-utilized schemes, 66,749 are Ground Water schemes and 5,920 are Surface Water schemes. The major factors contributing to constraints in utilization of GW schemes is reported to be non-availability of adequate power, lack of maintenance and mechanical breakdown. The SW schemes are under-utilized mainly due to reasons like 'less discharge of water', mechanical breakdown, storage not filled up fully etc. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.

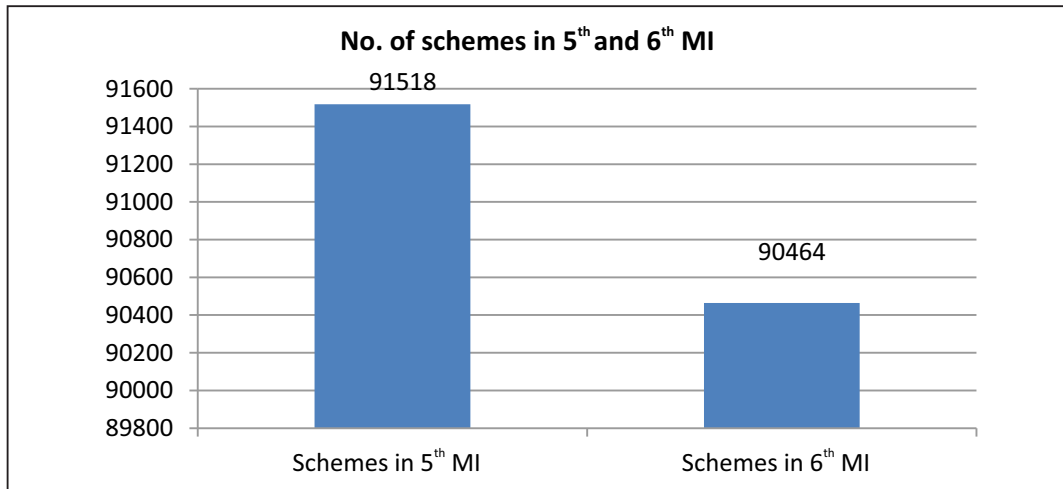


Key Parameters of 6 th MI Census-Uttar Pradesh						
Parameter		Unit	Value			Percentage to Total
Number of schemes	Dugwells	No.	85,224			2.14
	Shallow Tubewell	No.	33,33,679			83.84
	Medium Tubewell	No.	4,18,316			10.52
	Deep Tubewells	No.	1,06,883			2.69
	Ground Water schemes	No.	39,44,102			99.19
	Surface Flow	No.	4,425			0.11
	Surface Lift	No.	27,790			0.70
	Surface Water schemes	No.	32,215			0.81
	Total schemes	No.	39,76,317			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	1,81,21,799	2,11,035	1,83,32,834	
	IPC	Ha	2,24,66,782	2,65,559	2,27,32,341	
	IPU	Ha	1,81,31,151	2,09,262	1,83,40,412	
	IPC of in use schemes	Ha	2,22,89,819	2,61,938	2,25,51,757	
	IPU of in use schemes	Ha	1,79,91,788	2,07,326	1,81,99,114	
	% Ratio of IPU wrt IPC	%	80.70	78.80	80.68	
	Gap in IPC and IPU	Ha	43,35,631	56,297	43,91,929	
Ownership	Individual ownership	No.	39,27,964	21,665	39,49,629	99.33
	Group of Farmers	No.	916	570	1,486	0.04
	Public owned	No.	15,222	9,980	25,202	0.63
	Total	No.	39,44,102	32,215	39,76,317	100.00
Social Status of Individual Owner	SC	No.	7,14,320	4,153	7,18,473	18.19
	ST	No.	67,536	462	67,998	1.72
	OBC	No.	21,78,297	12,001	21,90,298	55.46
	Others	No.	9,67,811	5,049	9,72,860	24.63
	Total Individual	No.	39,27,964	21,665	39,49,629	100.00

Key Parameters of 6 th MI Census-Uttar Pradesh						
Parameter		Unit	Value			Percentage to Total
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	91,191	1,020	92,211	2.35
	Open Water Channel (unlined/ kutchra)	No.	19,44,532	6,376	19,50,908	49.65
	Underground pipe	No.	39,221	333	39,554	1.01
	Surface Pipe	No.	17,75,677	20,890	17,96,567	45.72
	Drip	No.	4,047	198	4,245	0.11
	Sprinklers	No.	12,886	660	13,546	0.34
	Others	No.	31,546	533	32,079	0.82
	Total	No.	38,99,100	30,010	39,29,110	100.00

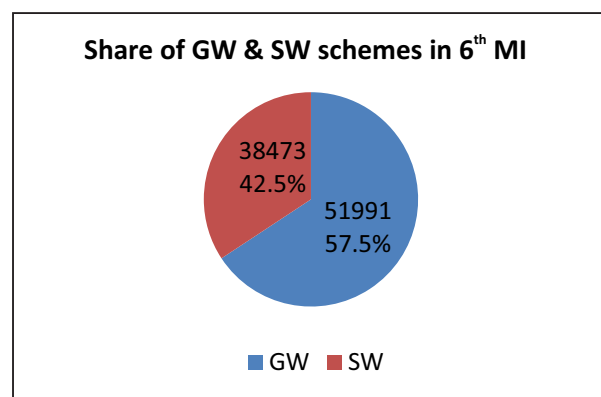
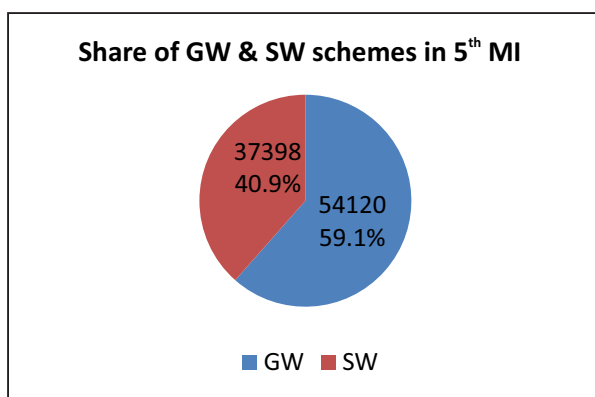
UTTARAKHAND

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Uttarakhand has 90,464 MI schemes comprising of 57.5% (51,991) Ground Water (GW) schemes and 42.5% (38,473) Surface Water (SW) schemes. There is a decline of the tune of 1.2% in 6th MI census as compared to the 91,518 schemes in 5th MI census in the State of Uttarakhand.

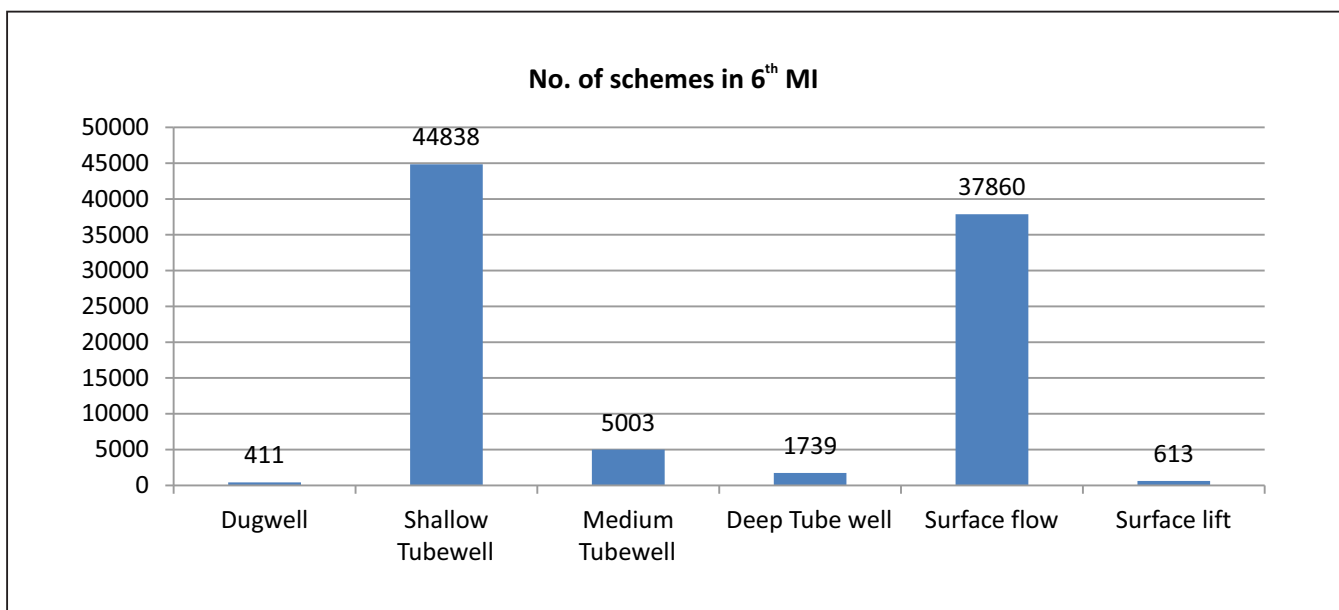


The State Government has reported a decline of 3.9% in GW schemes and increment of 2.9% in SW schemes during 6th MI census as compared to the 54,120 GW schemes and 37,398 SW schemes recorded in 5th census.

Share of GW schemes in the State of Uttarakhand has decreased from 59.1% in 5th MI Census to 57.5% in 6th MI Census whereas share of SW schemes increased from 40.9% in 5th Minor Irrigation Census to 42.5% in 6th MI Census as shown in the pie chart given below.

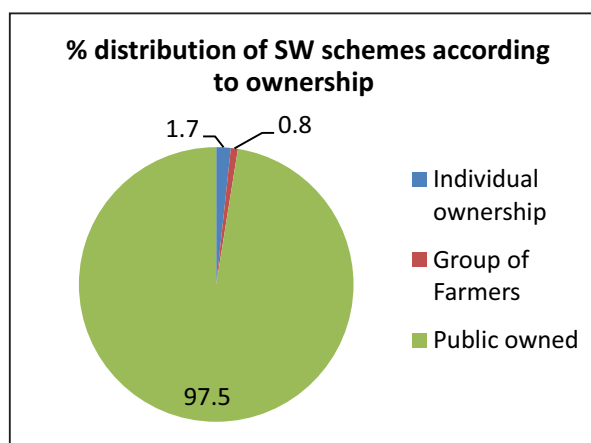
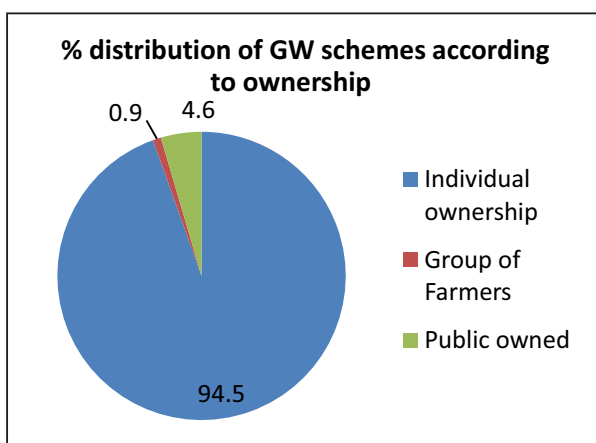


Out of the 90,464 MI schemes reported in Uttarakhand, 49.6% (44,838) are shallow tubewell followed by 41.9% (37,860) surface flow schemes. Distribution of different GW and SW schemes is shown in the chart given below.

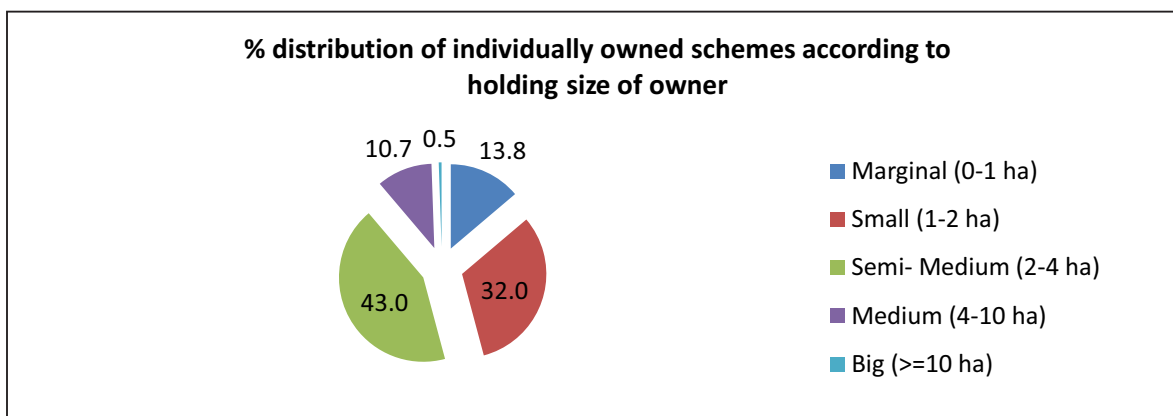


Ownership of MI schemes

Out of 90,464 MI schemes, majority of the schemes i.e. 55.0% (49,802) schemes are under individual ownership, 44.1% (39,870) schemes are public owned and a small chunk of 0.9% (792) schemes are owned by group of farmers. Among 51,991 GW schemes, 94.5% (49,146) schemes are individually owned whereas among 38,473 SW schemes, 97.5% (37,499) are public owned as shown in the figures given below.

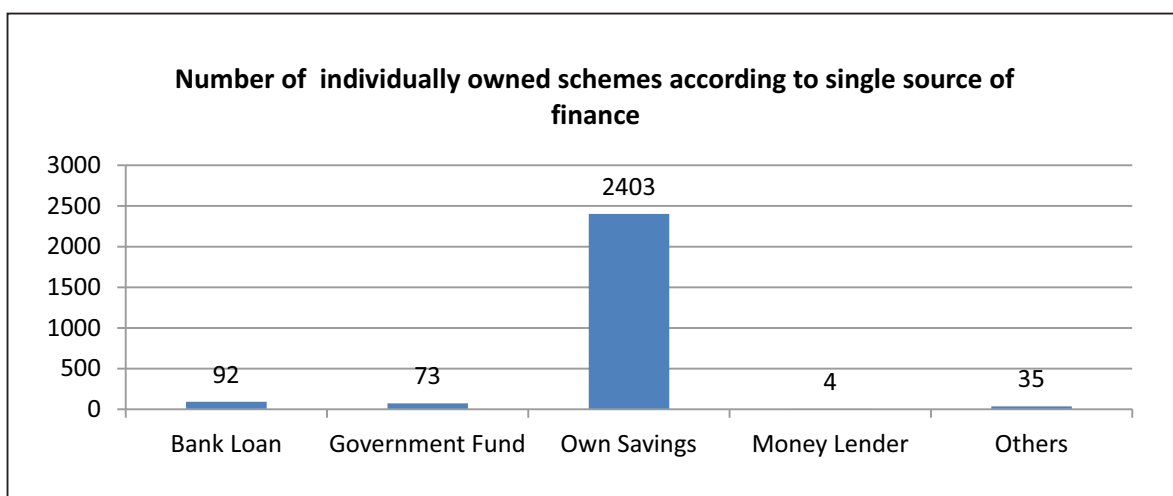


Out of 49,802 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a share of 45.8% (22,829) in MI schemes. Rest of the 54.2% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below.



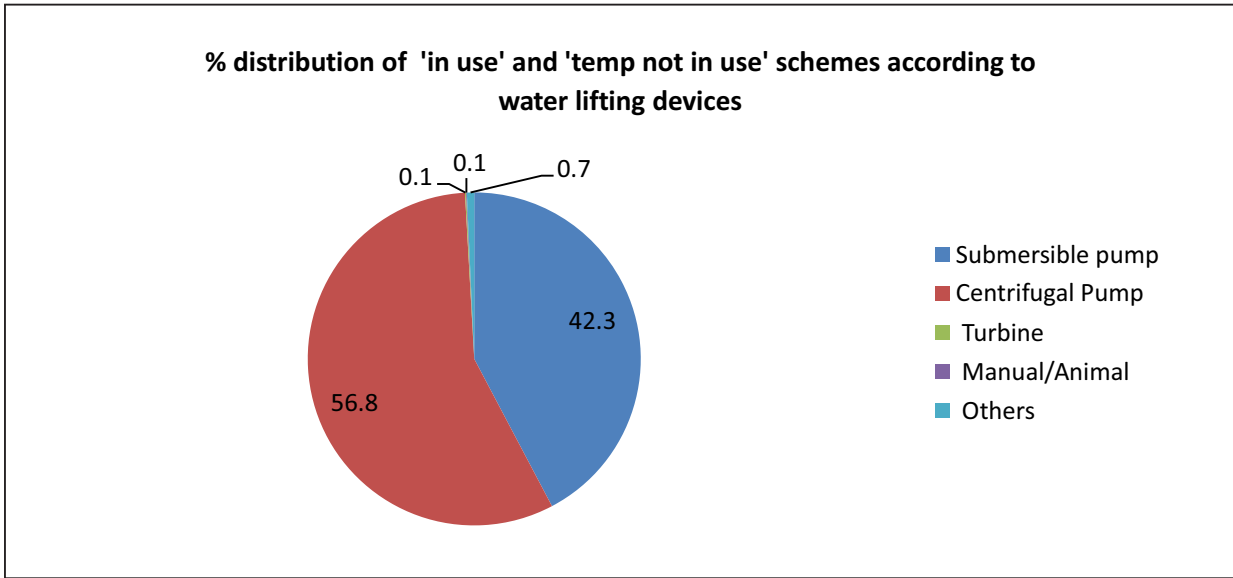
Financing of MI schemes

Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 49,802 individually owned schemes, 5.2% (2,607) have single source of finance whereas 94.8% (47,195) have more than one source of finance. In these schemes with single source of finance (2,607), majority of schemes i.e. 92.2% (2,403) are being financed by own savings of individual farmer. Other reported sources of finance are bank loan 3.5% (92), Government fund 2.8% (73), money lenders 0.2% (4) and others 1.3% (35). Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.



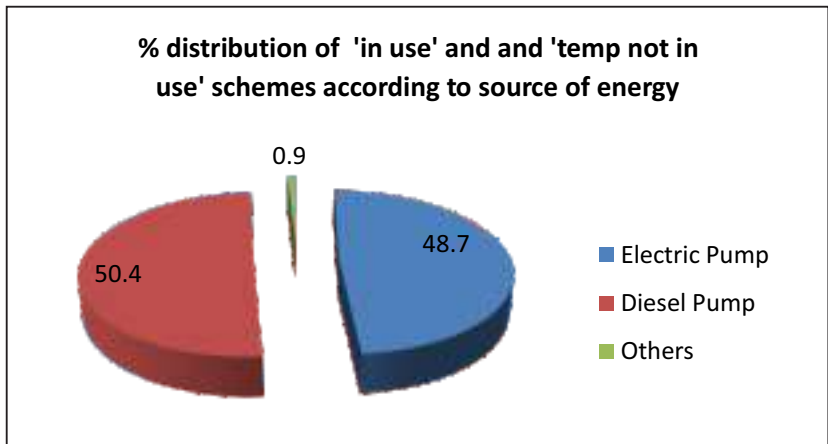
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 52,280 out of 90,464 MI schemes. Out of these (52,280) schemes, majority of schemes i.e. 56.8% (29,716) have centrifugal pump and 42.3% (22,098) schemes have submersible pump as lifting device. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



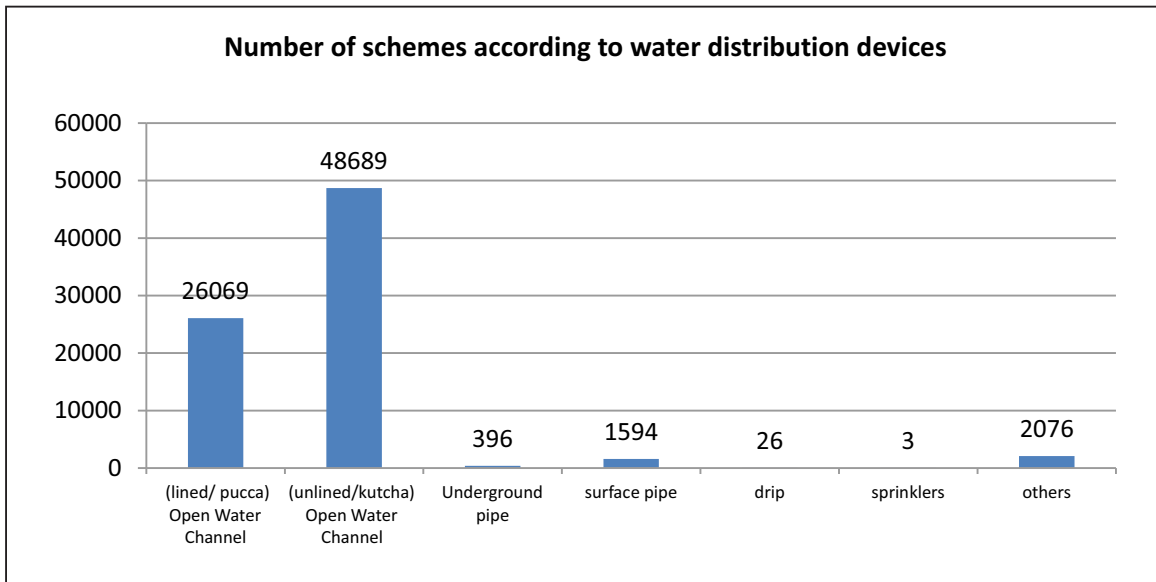
Distribution of source of energy

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 comes under the category of ground water and surface lift schemes. The number of such schemes is 52,280. Out of these schemes, majority of schemes i.e 50.4% (26,343) schemes are using diesel pumps as source of energy followed by electric pumps in 48.7% (25,485) schemes. The remaining 0.9% (452) schemes are using wind mills, solar pumps, manual/animal and other sources of energy. The percentage distribution of schemes according to source of energy is shown in the chart given below.



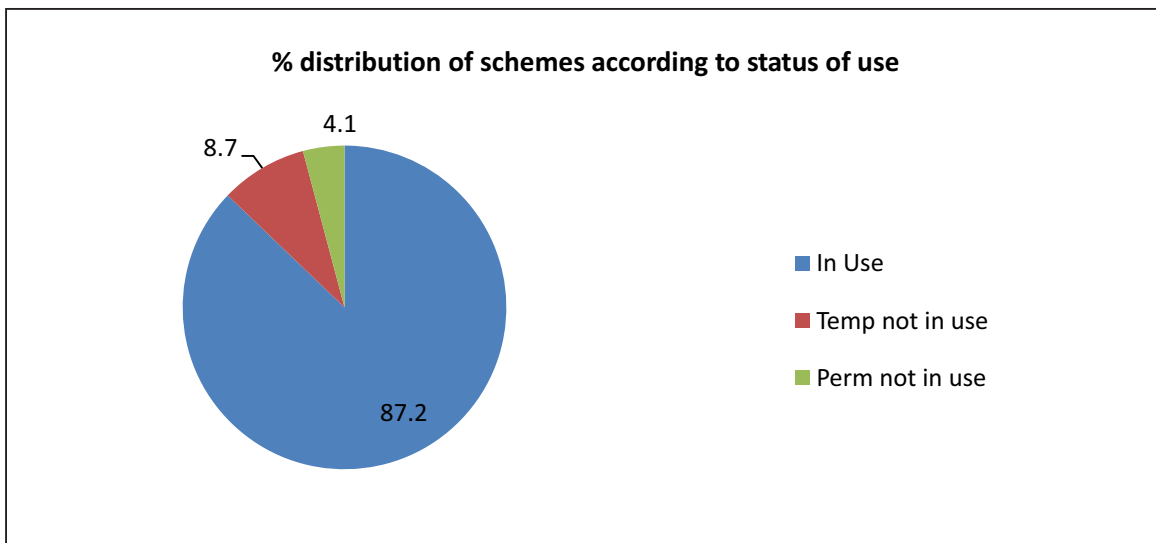
Water distribution device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 61.7% (48,689) followed by 33.1% (26,069) (lined/pucca) open water channel. The remaining 5.2% (4,095) schemes are using other water distribution devices as depicted in the figure given below.

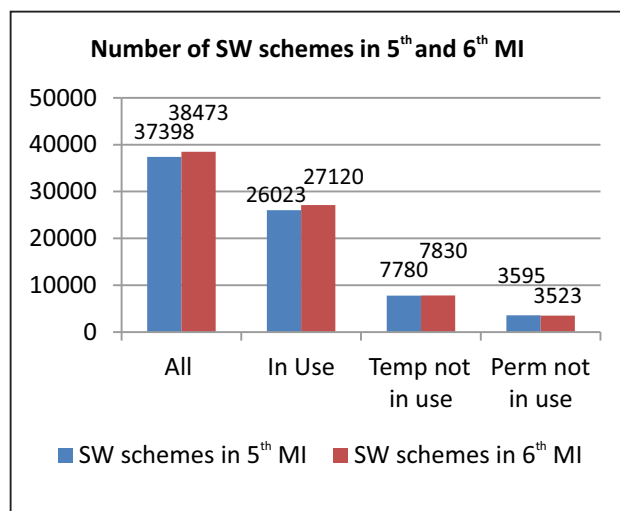
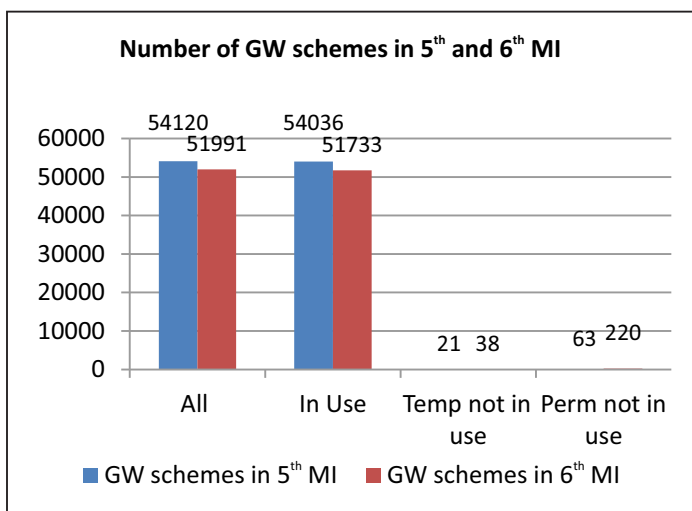


Status of MI schemes

Out of 90,464 MI schemes, 87.2% (78,853) are 'in use', 8.7% (7,868) are 'temporarily not in use' and only 4.1% (3,743) are 'permanently not in use' schemes which is depicted in the pie chart given below.

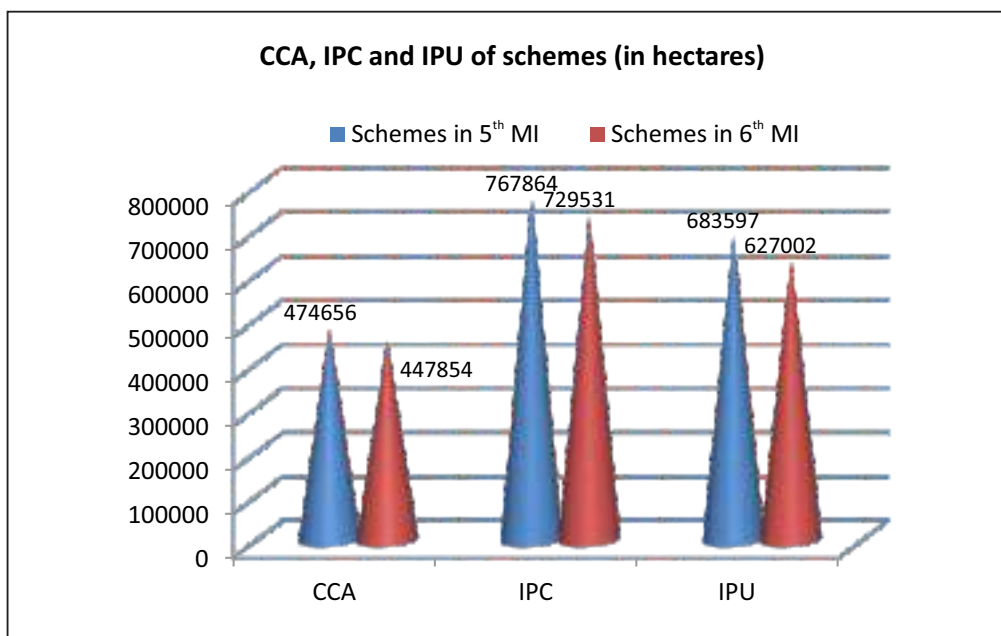


Out of 7,868 'temporarily not in use' schemes, 38 are GW schemes and 7,830 are SW schemes. Among 3,743 'permanently not in use' schemes, 220 are GW schemes and 3,523 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been marginal decline of 5% 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 has declined from 7,67,864 hectares during 5th MI census to 7,29,531 hectares during 6th MI census. Irrigation potential utilized was 6,83,597 hectares during 5th MI Census in Uttarakhand, which has declined by 8.3 % 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.

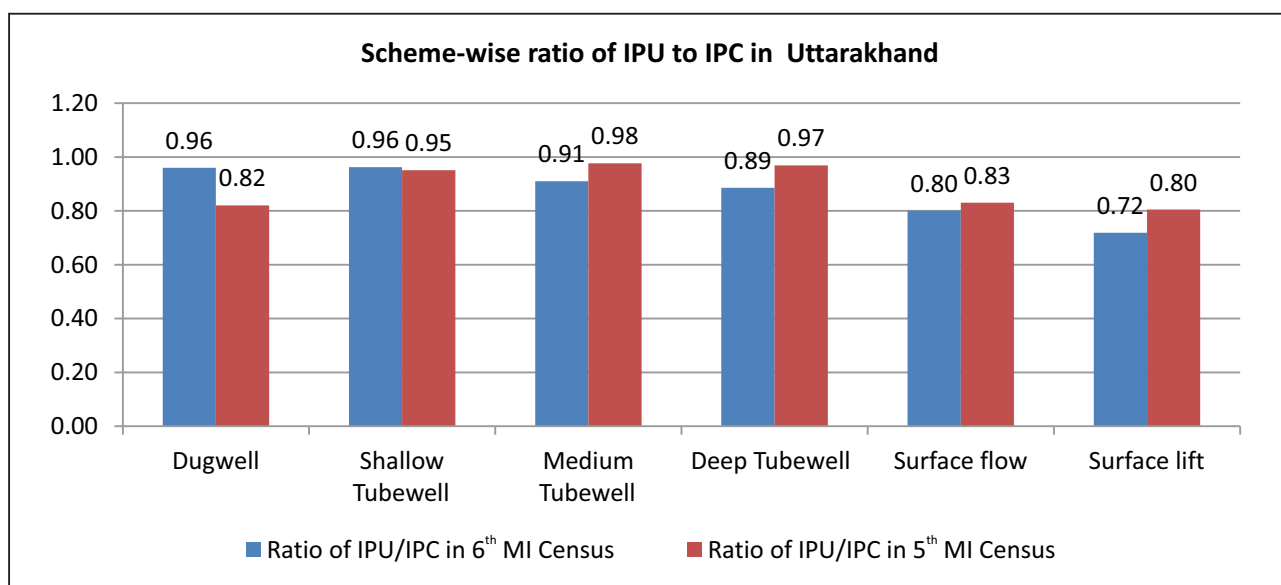


As per 6th MI Census, 3,42,840 hectares irrigation potential is created through GW schemes and 3,86,691 hectares through SW schemes. Irrigation potential utilized is 3,18,407 and 3,08,595 for GW and SW schemes respectively. This shows that 92.9 % of the potential created through GW schemes has been

utilized while percentage utilization in respect of SW schemes is 79.8 %. The scheme-wise ratio of IPU to IPC in Uttarakhand is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Uttarakhand			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	2,154	2,068	0.96
Shallow Tubewell	1,77,145	1,70,482	0.96
Medium Tubewell	40,183	36,582	0.91
Deep Tubewell	1,23,358	1,09,275	0.89
Surface flow	3,73,268	2,98,954	0.80
Surface lift	13,444	9,663	0.72

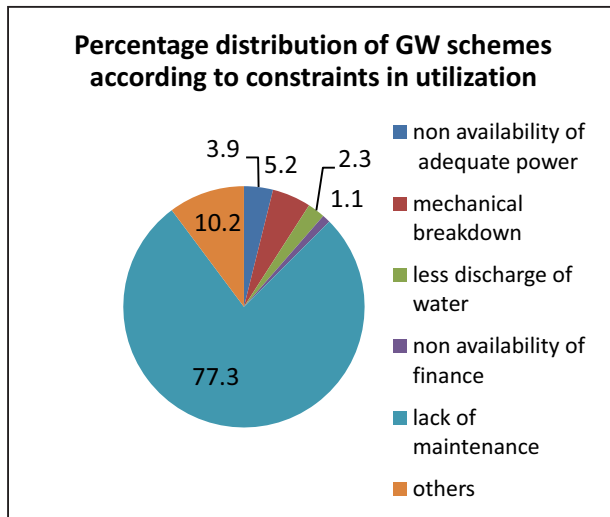
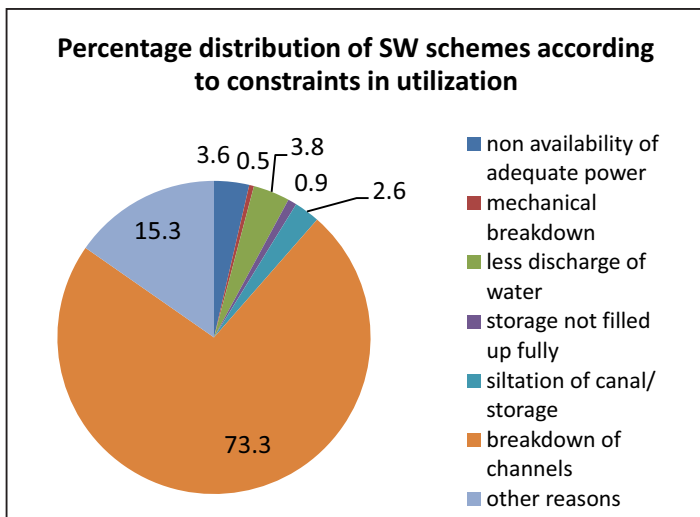
Surface flow have the highest IPC & IPU followed by shallow tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 80% utilization of the potential created except surface lift scheme with a utilization of 72%. A comparative chart showing 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, 10,582 (13.4%) schemes out of 78,853 'in use' schemes in Uttarakhand are under-utilized due to several reasons. Remaining 86.6% 'in use' MI schemes are functioning without any constraints.

Among 10,582 under-utilized schemes, 4,867 are GW schemes and 5,715 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'lack of maintenance' whereas the SW schemes are under-utilized mainly due to 'break-down of channels'. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



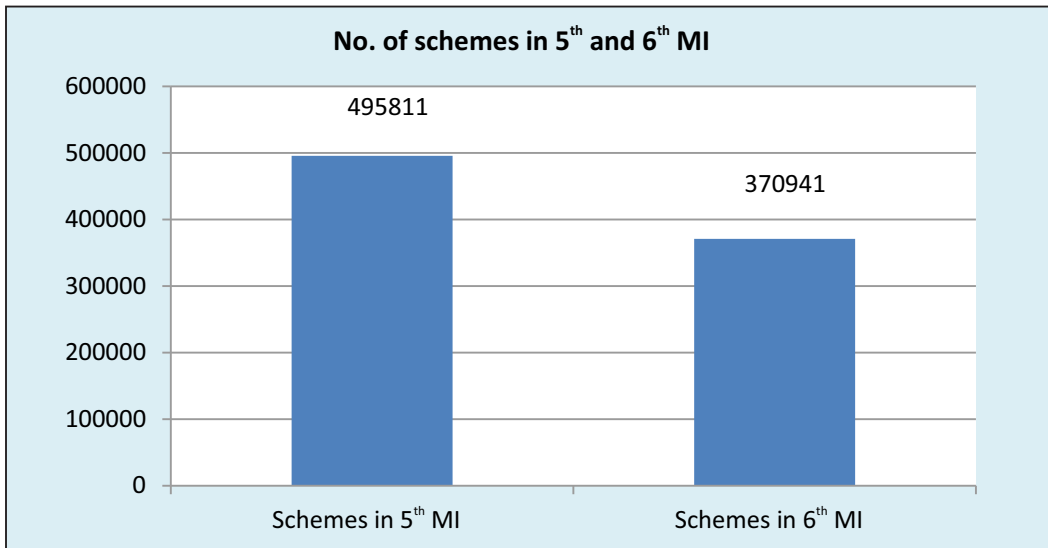
Key Parameters of 6 th MI Census - Uttarakhand						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	411			0.45
	Shallow Tubewell	No.	44,838			49.56
	Medium Tubewell	No.	5,003			5.53
	Deep Tubewells	No.	1,739			1.92
	Ground Water schemes	No.	51,991			57.47
	Surface Flow	No.	37,860			41.85
	Surface Lift	No.	613			0.68
	Surface Water schemes	No.	38,473			42.53
	Total schemes	No.	90,464			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	1,97,374	2,50,480	4,47,854	
	IPC	Ha	3,42,840	3,86,691	7,29,531	
	IPU	Ha	3,18,407	3,08,595	6,27,002	
	IPC of in use schemes	Ha	3,42,037	3,25,215	6,67,253	
	IPU of in use schemes	Ha	3,18,192	2,76,926	5,95,117	
	% Ratio of IPU wrt IPC	%	92.87	79.80	85.95	
	Gap in IPC and IPU	Ha	24,433	78,096	1,02,529	
Ownership	Individual ownership	No.	49,146	656	49,802	55.05
	Group of Farmers	No.	474	318	792	0.88
	Public owned	No.	2,371	37,499	39,870	44.07
	Total	No.	51,991	38,473	90,464	100.00
Social Status of Individual Owner	SC	No.	3,508	119	3,627	7.28
	ST	No.	5,704	43	5,747	11.54
	OBC	No.	28,322	5	28,327	56.88
	Others	No.	11,612	489	12,101	24.30
	Total Individual	No.	49,146	656	49,802	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	4,184	21,885	26,069	33.06
	Open Water Channel (unlined/ kutchra)	No.	47,319	1,370	48,689	61.75

Key Parameters of 6th MI Census - Uttarakhand

Parameter		Unit	Value			%
	Underground pipe	No.	155	241	396	0.50
	Surface Pipe	No.	47	1,547	1,594	2.02
	Drip	No.	1	25	26	0.03
	Sprinklers	No.	0	3	3	0.00
	Others	No.	27	2,049	2,076	2.63
	Total	No.	51,733	27,120	78,853	100.00

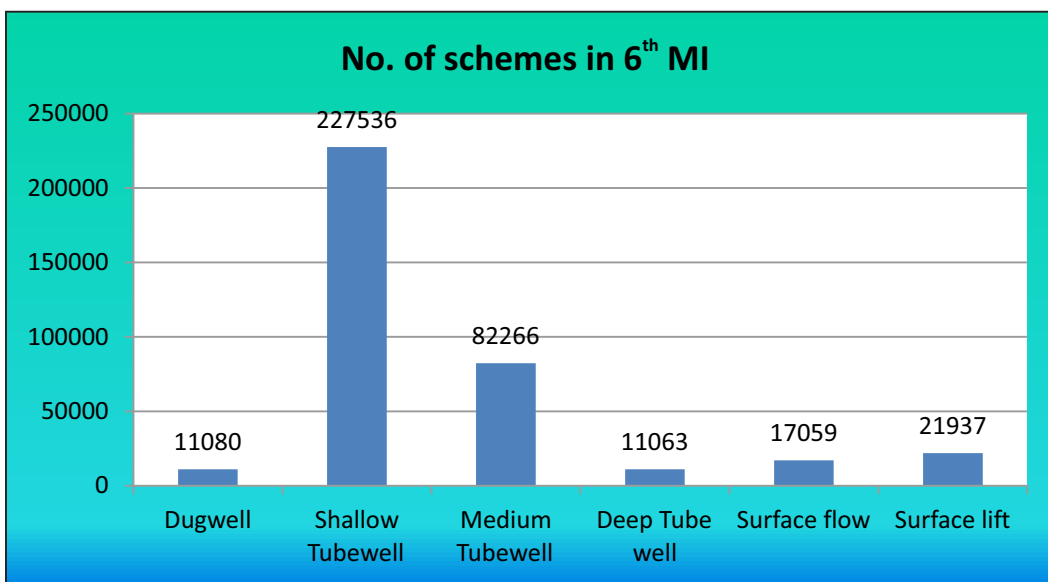
WEST BENGAL

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, West Bengal has 3,70,941 MI schemes comprising of 89.5% (3,31,945) Ground Water (GW) schemes and 10.5% (38,996) Surface Water (SW) schemes. There is a decline to the tune of 25.2% in 6th MI census with 3,70,941 MI schemes as compared to the 4,95,811 schemes in 5th MI census in the State of West Bengal.



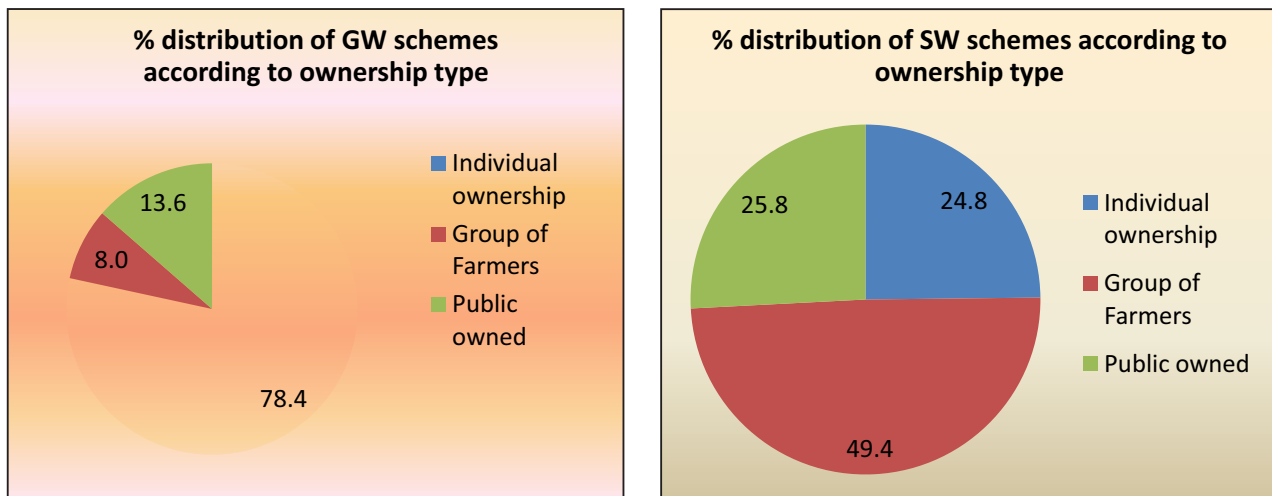
The State Government has reported decline of 22.5% (96,548) in GW schemes and a decline of 42.1% (28,322) in SW schemes during 6th MI census as compared to the 4,28,493 GW schemes and 67,318 SW schemes recorded in 5th census.

Out of the 3,70,941 MI schemes reported in West Bengal, 61.3% (2,27,536) are shallow tubewells and 22.2% (82,266) are medium tubewells. Distribution of different GW and SW schemes is shown in the chart given below.

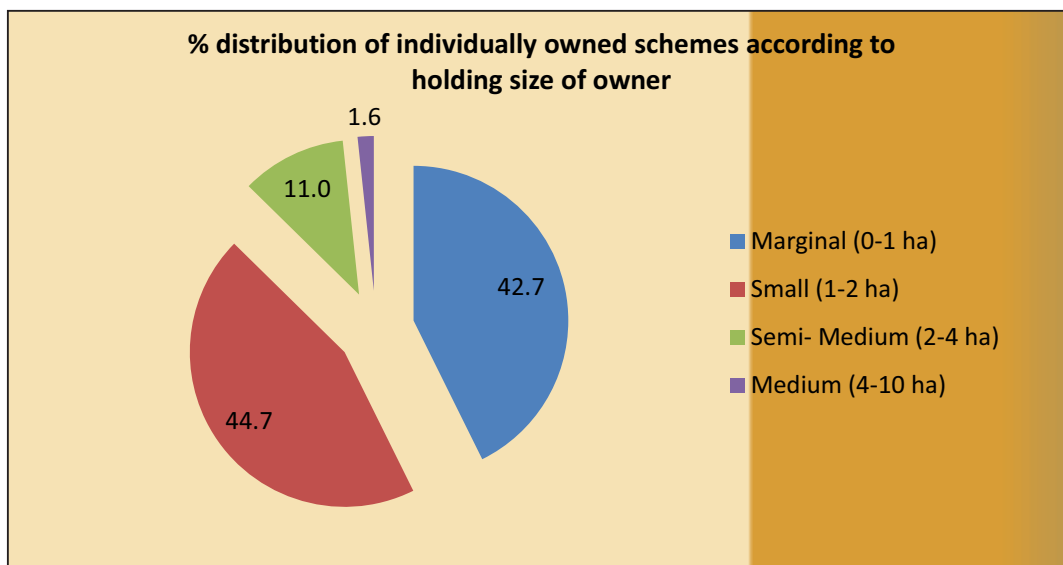


Ownership of MI schemes

Out of 3,70,941 MI schemes, majority of the schemes i.e. 72.8% (2,69,925) continue to remain under individual ownership, 14.9% (55,165) schemes are public owned and 12.3% (45,851) schemes are owned by group of farmers. Most of MI structures in West Bengal are under private ownership. Among 3,31,945 GW schemes, 78.4% (2,60,244) schemes are individually owned whereas among 38,996 SW schemes, 24.8% (9,681) schemes are under individual ownership. Distribution of GW and SW schemes according to ownership type is shown in the pie charts given below.

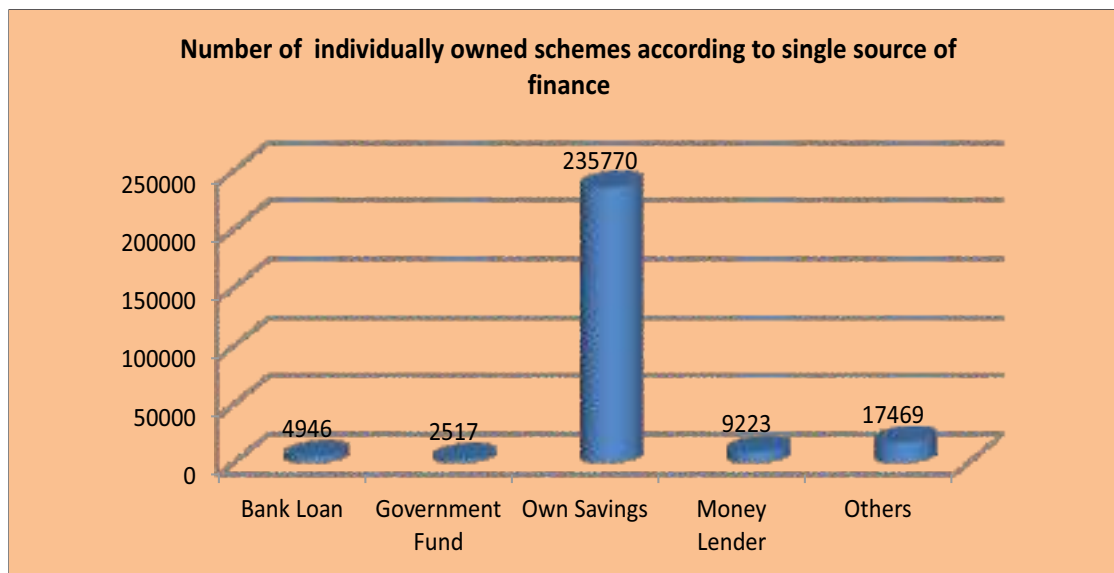


Out of 2,69,925 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) own a major share of 87.4 % (2,35,791) in MI schemes. Rest of the 12.6% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles of improving the livelihood of small and marginal farmers.



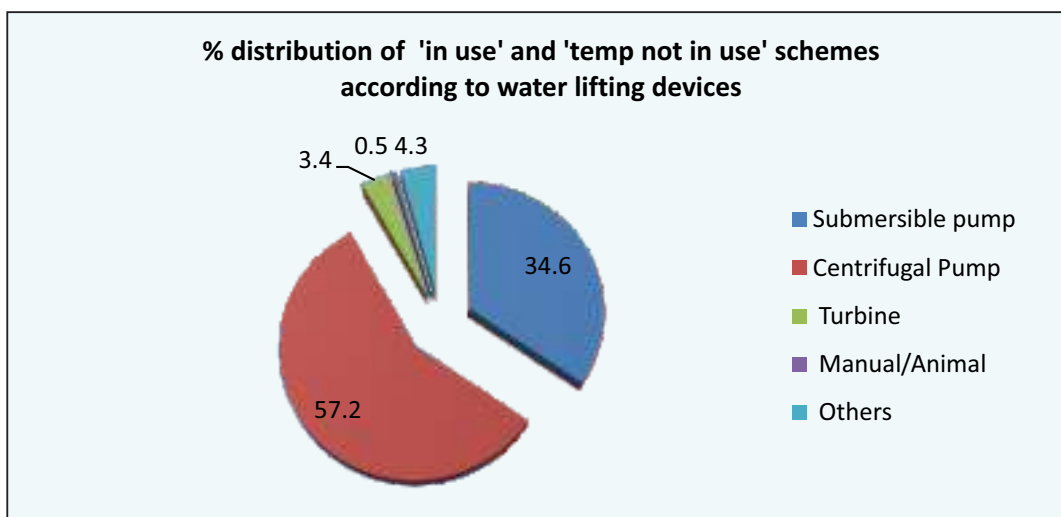
Financing of MI schemes

Information on source of finance has been collected in the census for the schemes owned by individual farmers. Out of 2,69,925 individually owned schemes, majority of schemes i.e. 87.4% (2,35,770) are being financed by own savings of individual farmer. The remaining 12.6% schemes are financed by Government fund, bank loan, money lenders and other sources. Distribution of individually owned MI schemes according to source of finance is depicted in the chart given below.



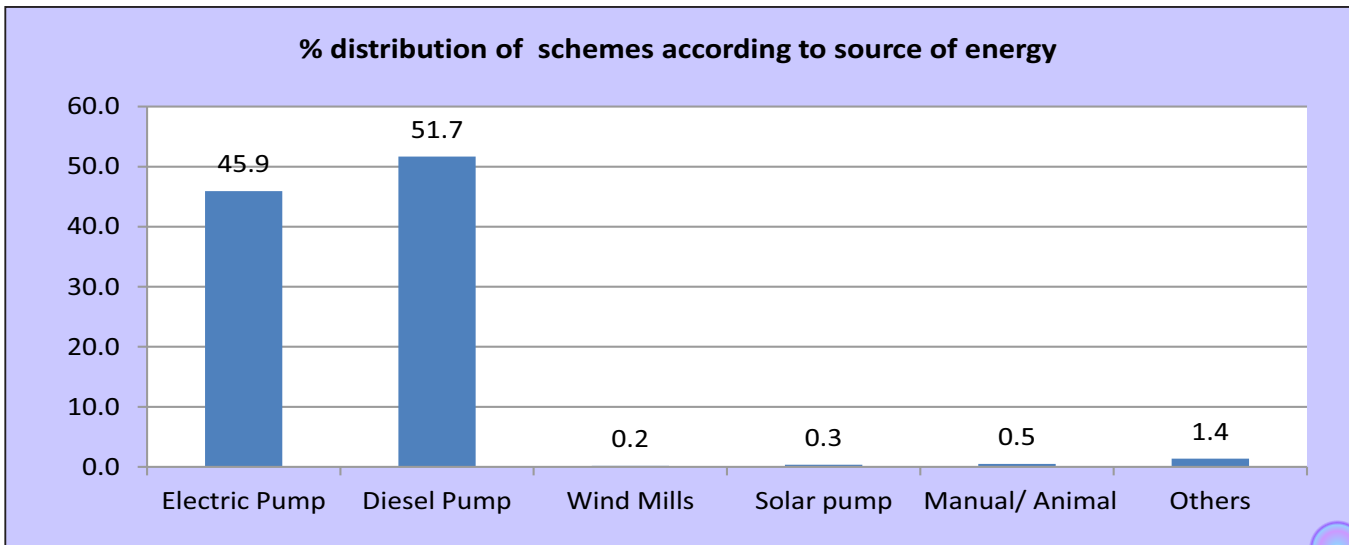
Distribution of lifting devices in MI schemes

During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 3,46,794 out of 3,70,941 MI schemes. Out of these 3,46,794 schemes, majority of schemes i.e. 57.2% (1,98,357) have centrifugal pump and 34.6% (1,20,036) schemes have submersible pump as lifting device. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



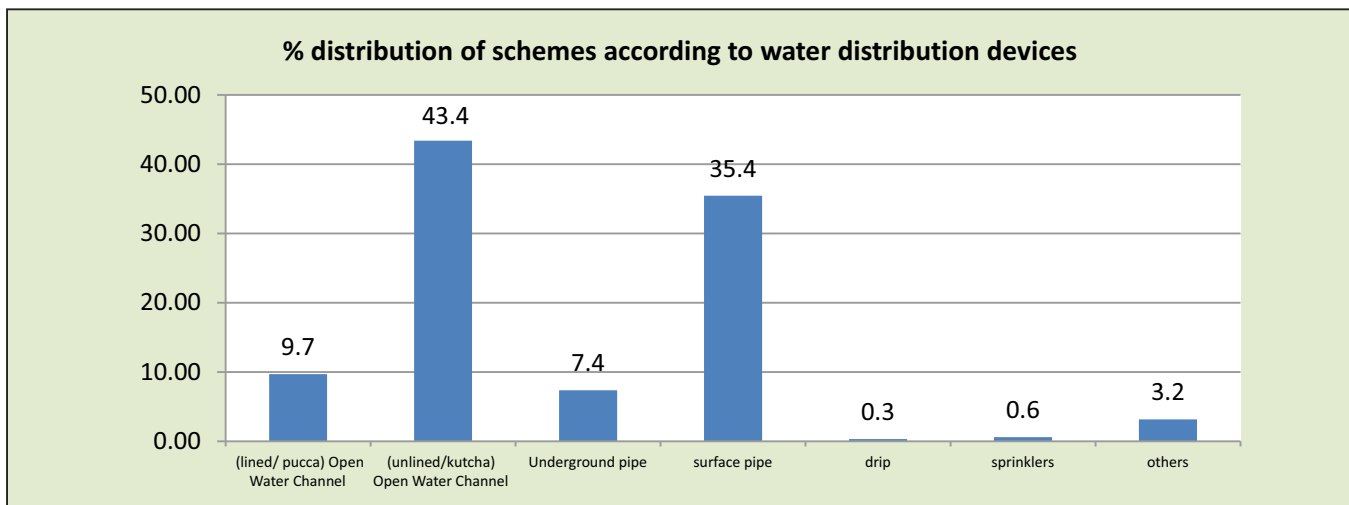
Distribution of source of energy

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 come under the category of ground water and surface lift schemes. The number of such schemes is 3,46,794. Out of these schemes, majority of schemes i.e 51.7% (1,79,247) schemes are using diesel pump as source of energy followed by electric pumps in 45.9% (1,59,315) schemes. Rest of the schemes are using solar pumps, wind mills, manual/animal or other devices as source of energy for lifting water. The percentage distribution of schemes according to source of energy is shown in the chart given below.



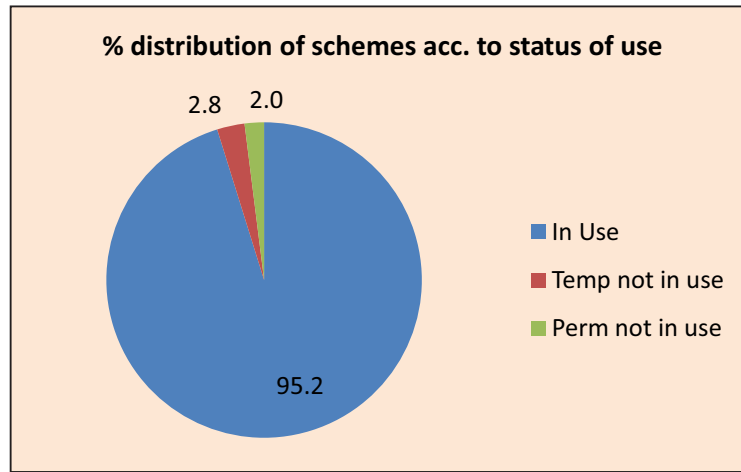
Water Distribution Device

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (unlined/kutchra) is 43.4% (1,53,205) followed by 35.4% (1,25,134) surface pipe and 9.7% (34,300) open water channel (lined/pucca). The water distribution devices used in the rest of the MI schemes are underground pipe, sprinklers, drip and other devices. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

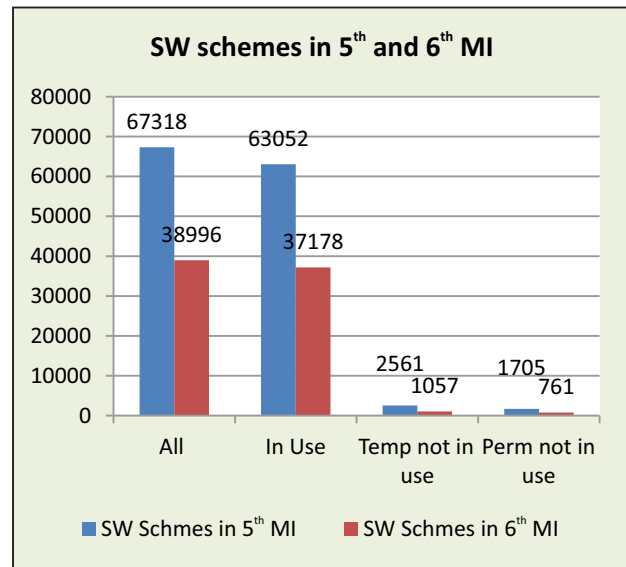
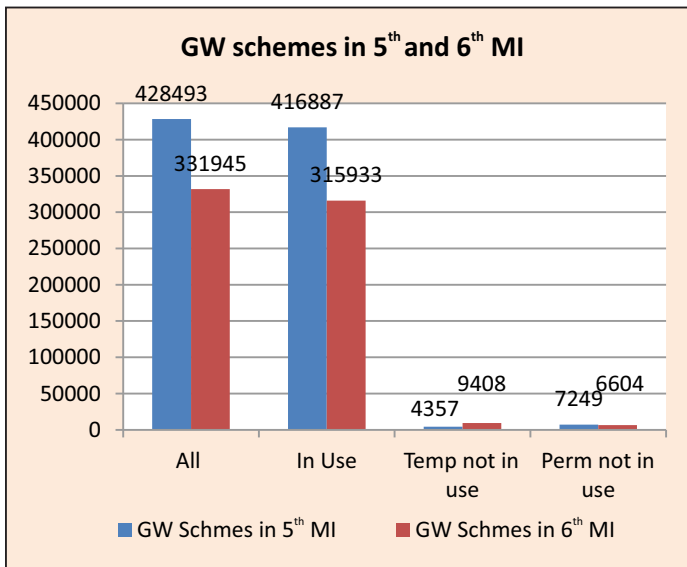


Status of MI schemes

Out of 3,70,941 MI schemes, 95.2% (3,53,111) are 'in use', 2.8% (10,465) are 'temporarily not in use' and only 2.0% (7,365) are 'permanently not in use' schemes which is depicted in the pie chart given below.

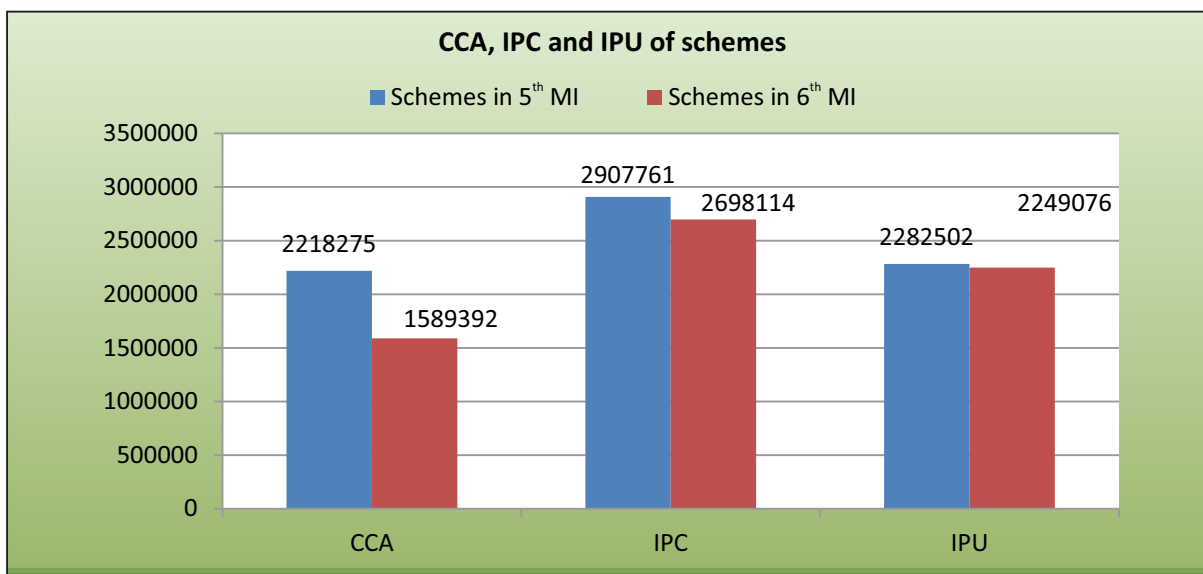


Out of 10,465 'temporarily not in use' schemes, 9,408 are GW schemes and 1,057 are SW schemes. Among 7,365 'permanently not in use' schemes, 6,604 are GW schemes and 761 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

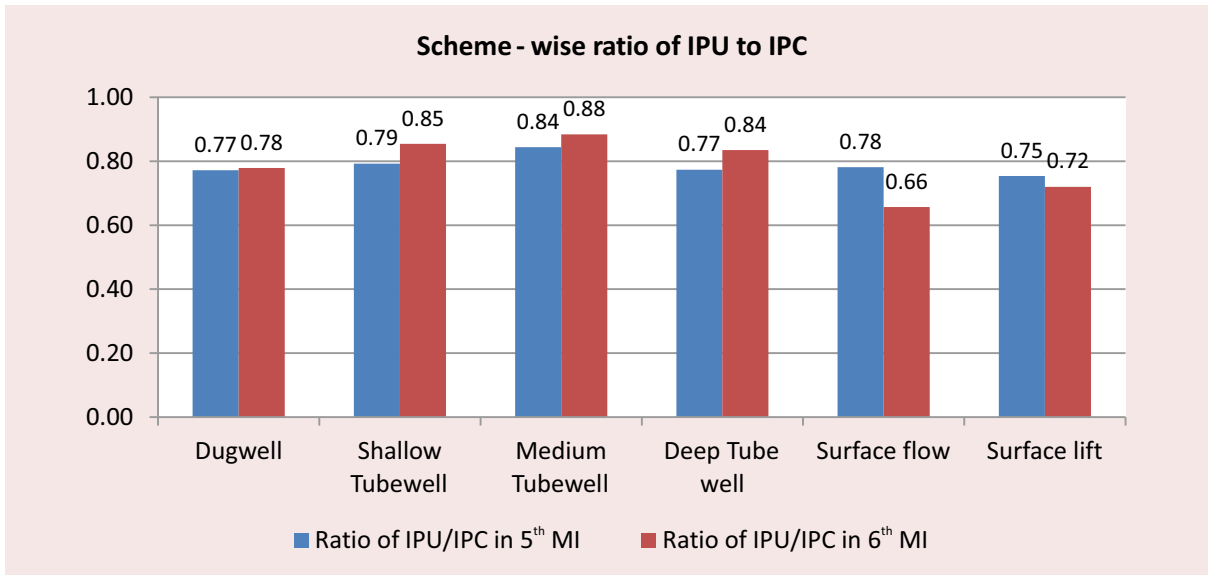
There has been a decline of 7.2% in the irrigation potential created from minor irrigation structures in the State during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC has declined from 29,07,761 hectares during 5th MI census to 26,98,114 hectares during 6th MI census. Irrigation potential utilized was 22,82,502 hectares during 5th MI Census in West Bengal, which has slightly declined to 22,49,076 hectares 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, 22,44,014 hectares irrigation potential is created through GW schemes and 4,54,101 hectares through SW schemes. Irrigation potential utilized is 19,32,939 hectares and 3,16,136 hectares for GW and SW schemes respectively. This shows that 86.1% of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 69.6%. The scheme-wise ratio of IPU to IPC in West Bengal is presented in the table given below.

Scheme-wise ratio of IPU to IPC			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	37,420	29,146	0.78
Shallow Tubewell	10,88,790	9,30,100	0.85
Medium Tubewell	8,24,108	7,28,446	0.88
Deep Tubewell	2,93,695	2,45,248	0.84
Surface flow	1,70,650	1,12,048	0.66
Surface lift	2,83,450	2,04,088	0.72

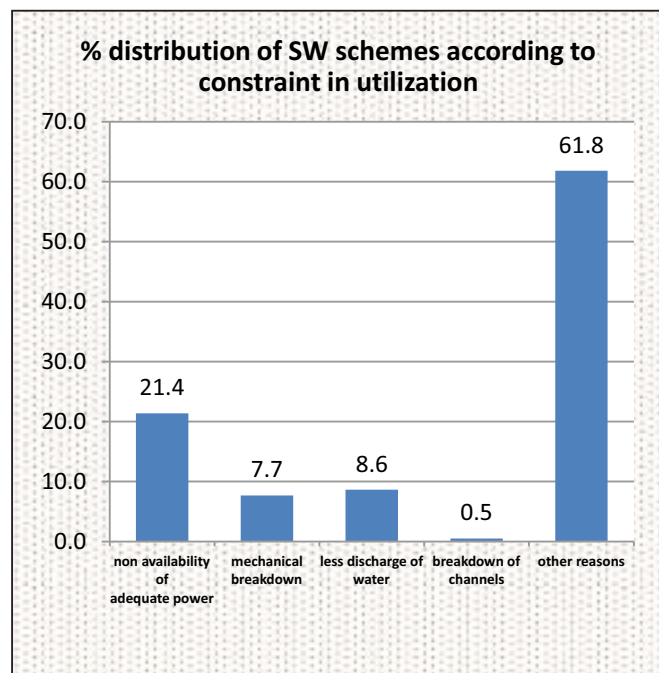
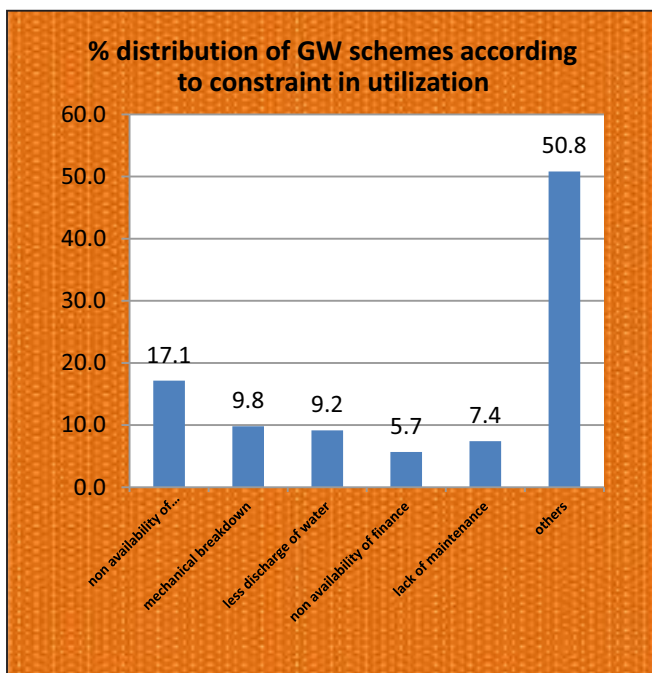
Shallow tubewells have the highest IPC and IPU followed by medium tubewells schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 70% utilization of the potential created except surface flow scheme with a utilization of 66%. A comparative 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, 43,332 (12.3%) schemes out of 3,53,111 'in use' schemes in West Bengal are under-utilised due to several reasons. Remaining 87.7% 'in use' MI schemes are functioning without any constraints.

Among 43,332 under-utilized schemes, 38,168 are GW schemes and 5,164 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in chart given below.

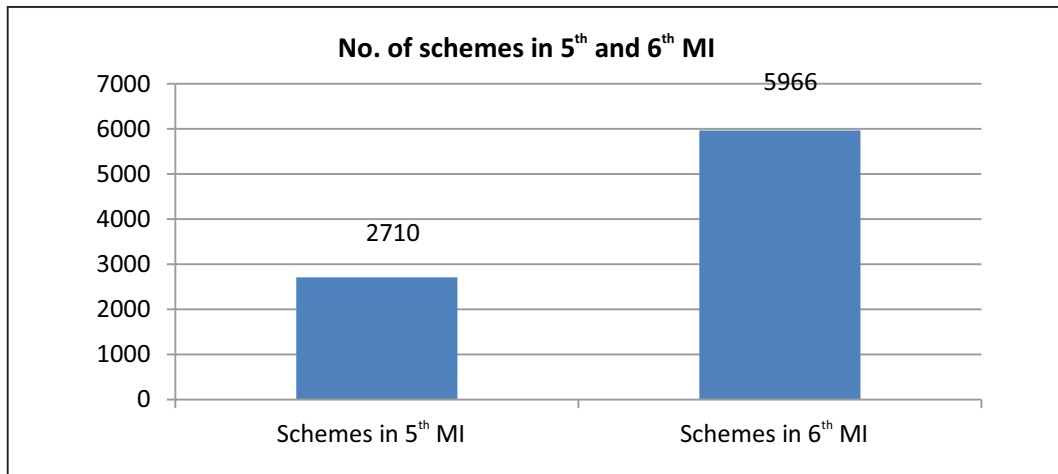


Key Parameters of 6 th MI Census - West Bengal						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.		11,080		2.99
	Shallow Tubewell	No.		2,27,536		61.34
	Medium Tubewell	No.		82,266		22.18
	Deep Tubewells	No.		11,063		2.98
	Ground Water schemes	No.		3,31,945		89.49
	Surface Flow	No.		17,059		4.60
	Surface Lift	No.		21,937		5.91
	Surface Water schemes	No.		38,996		10.51
	Total schemes	No.		3,70,941		100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	12,99,741	2,89,651	15,89,392	
	IPC	Ha	22,44,014	4,54,101	26,98,114	
	IPU	Ha	19,32,939	3,16,136	22,49,076	
	IPC of in use schemes	Ha	21,00,635	4,18,483	25,19,117	
	IPU of in use schemes	Ha	18,72,456	3,05,973	21,78,429	
	% Ratio of IPU wrt IPC	%	86.14	69.62	83.36	
	Gap in IPC and IPU	Ha	3,11,074	1,37,964	4,49,038	
Ownership	Individual ownership	No.	2,60,244	9,681	2,69,925	72.77
	Group of Farmers	No.	26,604	19,247	45,851	12.36
	Public owned	No.	45,097	10,068	55,165	14.87
	Total	No.	3,31,945	38,996	3,70,941	100.00
Social Status of Individual Owner	SC	No.	71,270	1,932	73,202	27.12
	ST	No.	13,832	643	14,475	5.36
	OBC	No.	46,273	2,906	49,179	18.22
	Others	No.	1,28,869	4,200	1,33,069	49.30
	Total Individual	No.	2,60,244	9,681	2,69,925	100.00

Key Parameters of 6 th MI Census - West Bengal						
Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	32,837	1,463	34,300	9.71
	Open Water Channel (unlined/ kutcha)	No.	1,40,807	12,398	1,53,205	43.39
	Underground pipe	No.	23,051	2,962	26,013	7.37
	Surface Pipe	No.	1,08,638	16,496	1,25,134	35.44
	Drip	No.	1,117	42	1,159	0.33
	Sprinklers	No.	1,992	154	2,146	0.61
	Others	No.	7,491	3,663	11,154	3.16
	Total	No.	3,15,933	37,178	3,53,111	100.00

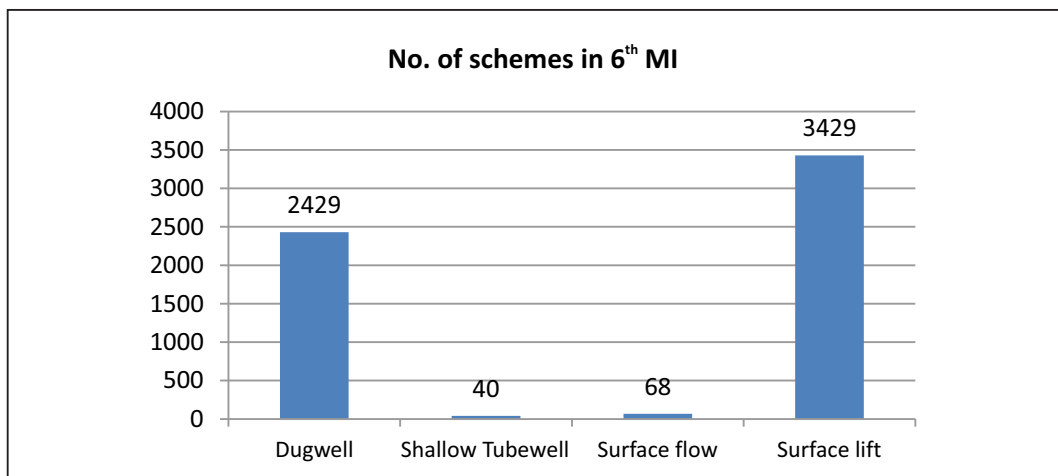
ANDAMAN & NICOBAR

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Andaman & Nicobar has 5,966 MI schemes comprising of 41.4% (2,469) Ground Water (GW) schemes and 58.6% (3,497) Surface Water (SW) schemes. There has been an increase to the tune of 120.1% in 6th MI census as compared to the 2,710 schemes in 5th MI census in the UT of Andaman & Nicobar.



The Union Territory has reported growth of 81.9% (1,112) in GW schemes and 158.5 % (2,144) in SW schemes during 6th MI census as compared to the 1,357 GW schemes and 1,353 SW schemes recorded in 5th MI census.

Out of the 5,966 MI schemes reported in Andaman & Nicobar, 57.5% (3,429) are surface lift followed by 40.7% (2,429) dugwell, 1.1% (68) surface flow and 0.7% (40) shallow tubewell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

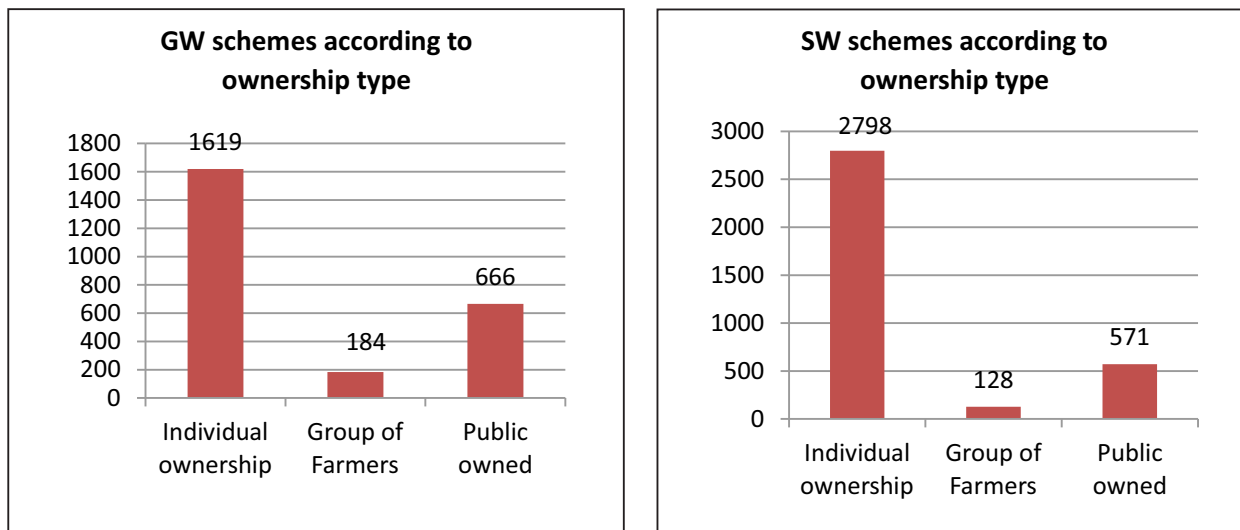


Ownership of MI schemes

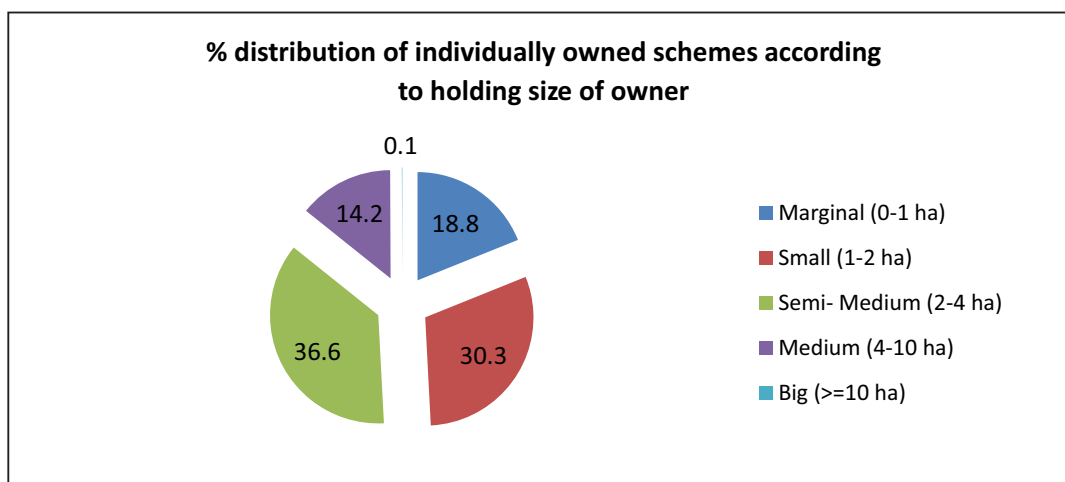
Out of 5,966 MI schemes, majority of the schemes i.e. 74.1% (4,417) are under individual ownership, 20.7% (1,237) schemes are public owned and 5.2% (312) schemes are with group of farmers. Among 2,469

GW schemes, 65.6% (1,619) schemes are under individual ownership and among 3,497 SW schemes, 80.0% (2,798) are under individual ownership.

Most of MI structures in Andaman & Nicobar are owned by individual farmers which is also shown in the figure given below.



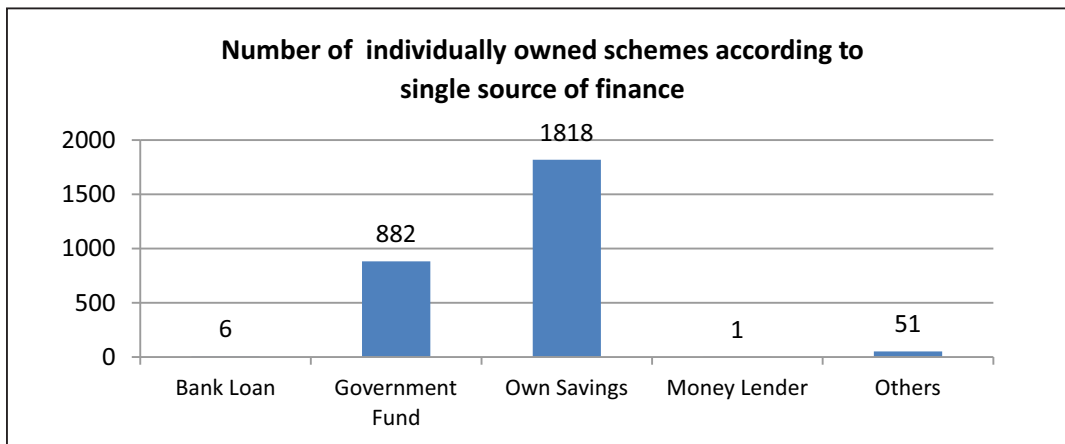
Out of 4,417 individually owned schemes, based on holding size of owner, marginal to semi-medium farmers (having less than 4 hectares) own a major share of 85.7% (3,787) in MI schemes. Rest of the 14.3% schemes are owned by medium and big farmers which is shown in the chart given below.



Financing of MI schemes

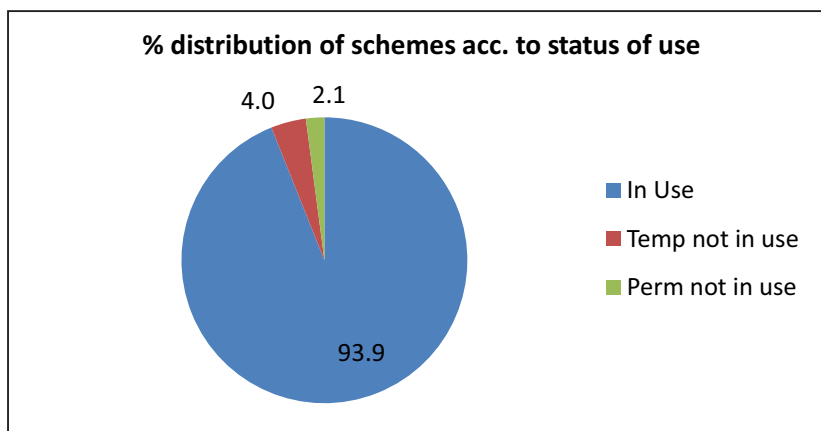
Source of finance has been collected in the census for the schemes owned by individual farmers. Out of 4,417 individually owned schemes, 62.4% (2,758) have single source of finance whereas 37.6% (1,659) have more than one source of finance. In these schemes with single source of finance (2,758), majority of schemes i.e. 65.9% (1,818) are being financed by own savings of individual farmer followed by 32.0% (882)

Government fund. Remaining 2.1% (58) schemes are funded by bank loan, money lender and other sources. Distribution of individually owned MI schemes according to single source of finance is depicted in the chart given below.

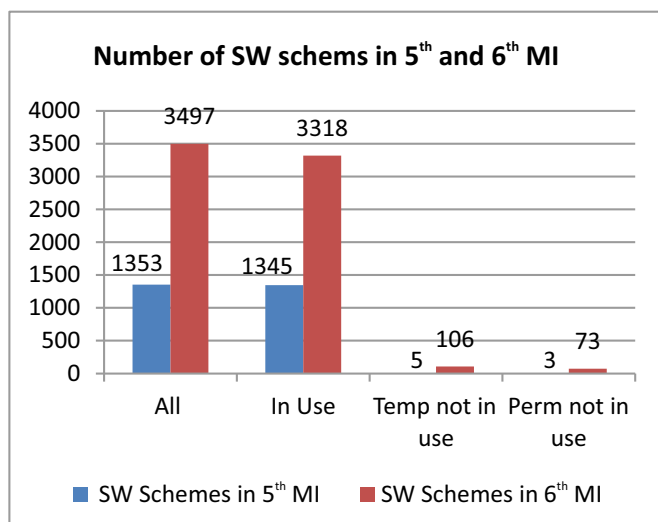
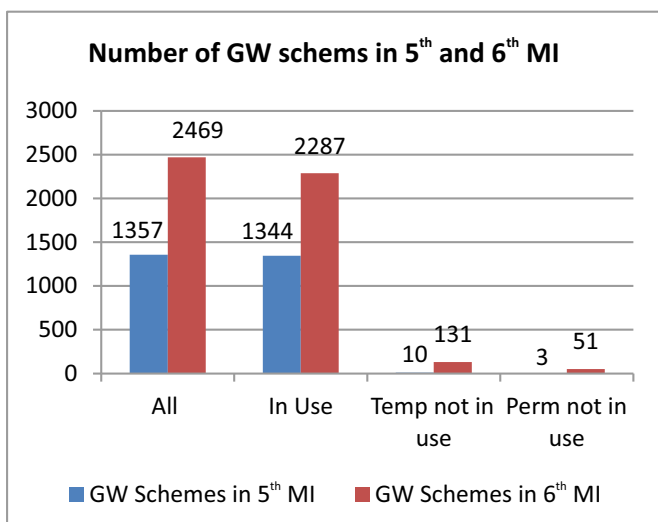


Status of MI schemes

Out of 5,966 MI schemes, 93.9% (5,605) are 'in use', 4.0% (237) are 'temporarily not in use' and only 2.1 % (124) are 'permanently not in use' schemes which is depicted in the pie chart given below.

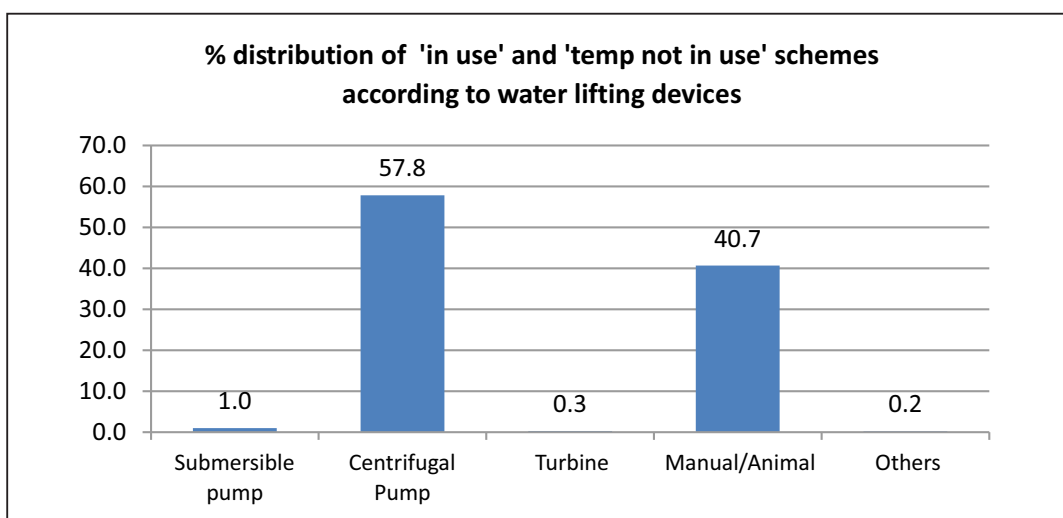


Out of 237 'temporarily not in use' schemes, 131 are GW schemes and 106 are SW schemes. Among 124 'permanently not in use' schemes, 51 are GW schemes and 73 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



Distribution of lifting devices in MI schemes

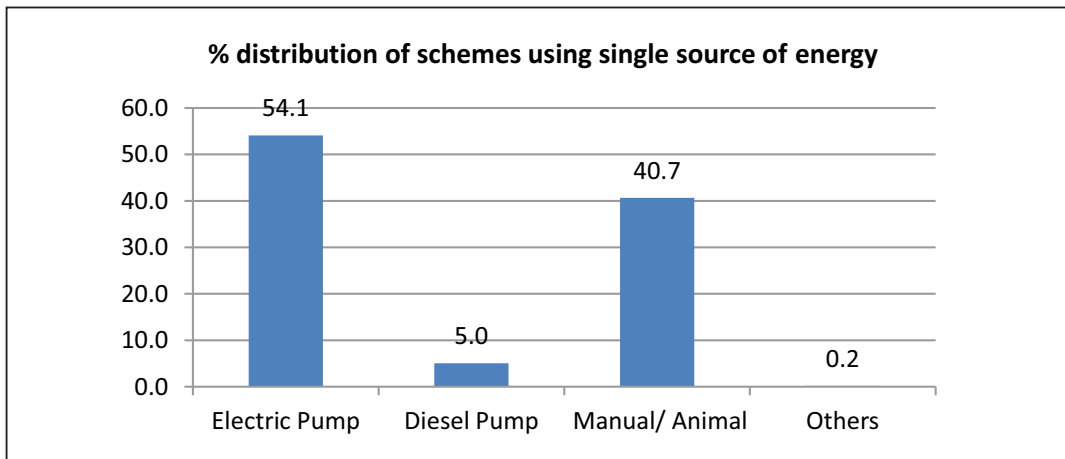
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 5,776, out of 5,966 MI schemes. Out of these (5,776) schemes, majority of schemes i.e 57.8% (3,341) have centrifugal pump, 40.7% (2,349) are operated with manual or animal lifting devices, 1.0% (58) schemes are operated by submersible pump for water lifting purposes, 0.3% (16) schemes have turbines as lifting devices and rest 0.2% (12) 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

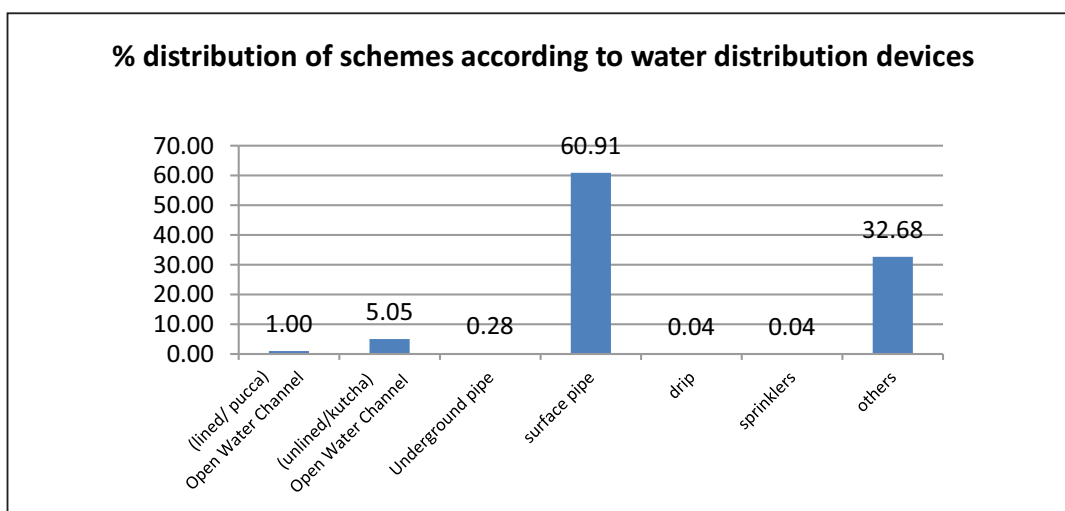
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 5,776. Out of these schemes, majority of schemes i.e 54.1% (3,124) schemes are using electric pumps as source of energy followed by manual/animal sources

in 40.7% (2,349) schemes, diesel pump in 5.0% (291) schemes whereas remaining 0.2% (12) use energy generated through wind mills, solar pump and other devices. The percentage distribution of schemes according to source of energy is shown in the chart given below.



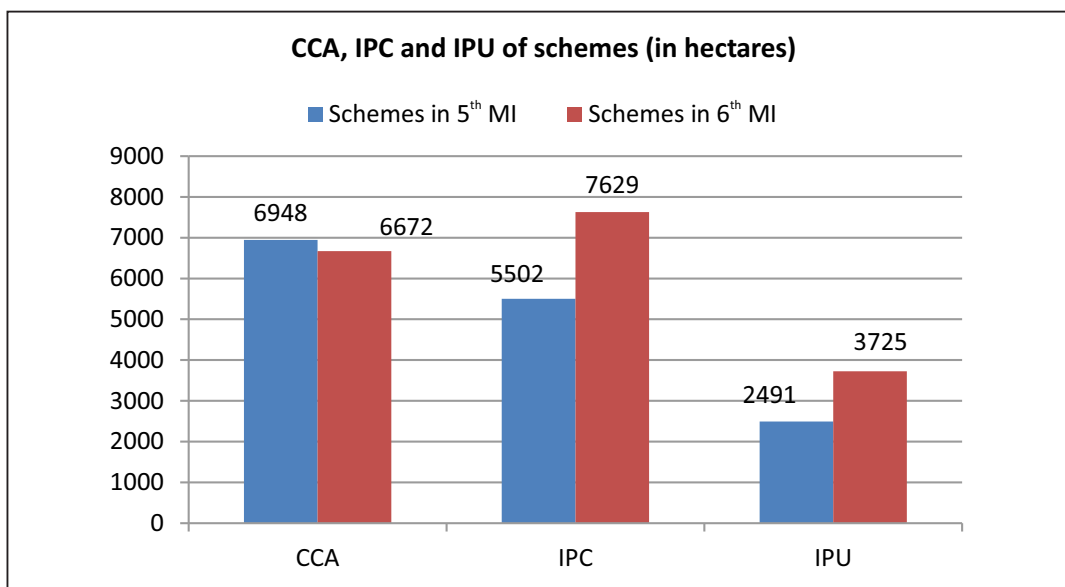
Water distribution device

As per the 6th MI Census, 60.9% (3,414) schemes use surface pipe for distribution of water. The water distribution devices used in the rest of the 39.1 % (2,191) MI schemes are open water channel, underground pipe, drip, sprinklers and other devices as depicted in the figure given below.



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

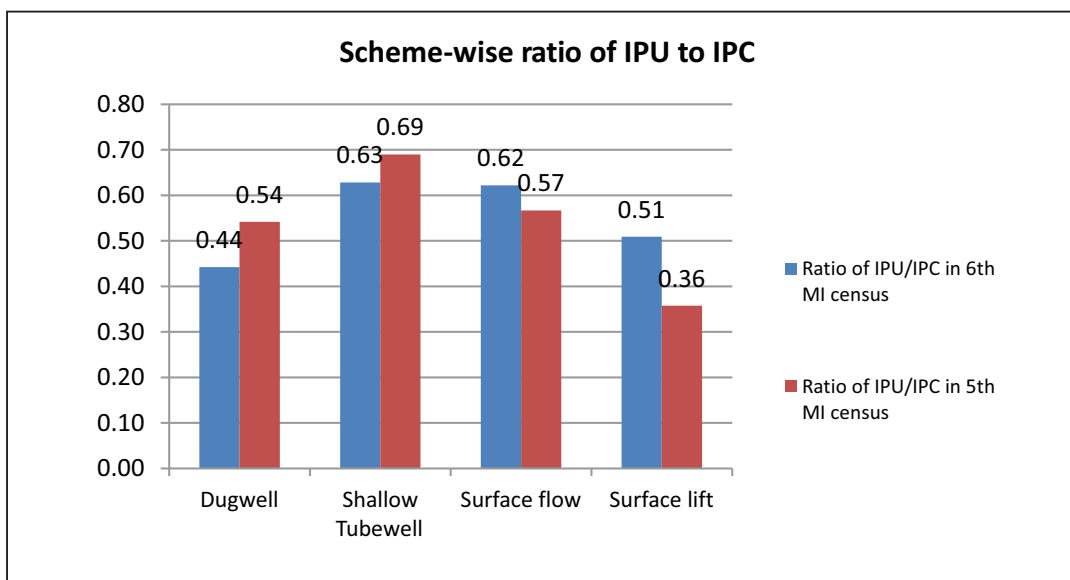
There has been increase of 38.6% in the irrigation potential created from minor irrigation structures in the UT during 6th Minor Irrigation Census as compared to 5th Minor Irrigation Census since IPC is increased from 5,502 hectares during 5th MI census to 7,629 hectares during 6th MI census. Irrigation potential utilized was 2,491 hectares during 5th MI Census in Andaman & Nicobar, which has increased by 49.5% 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, 2,677 hectares irrigation potential is created through GW schemes and 4,952 hectares through SW schemes. Irrigation potential utilized is 1,192 hectares and 2,533 hectares for GW and SW schemes respectively. This shows that 44.5 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 51.1%. The scheme-wise ratio of IPU to IPC in Andaman & Nicobar is presented in the table given below.

Scheme-wise ratio of IPU to IPC in Andaman & Nicobar			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	2,630	1,163	0.44
Shallow Tubewell	47	30	0.63
Surface flow	108	67	0.62
Surface lift	4,844	2,466	0.51

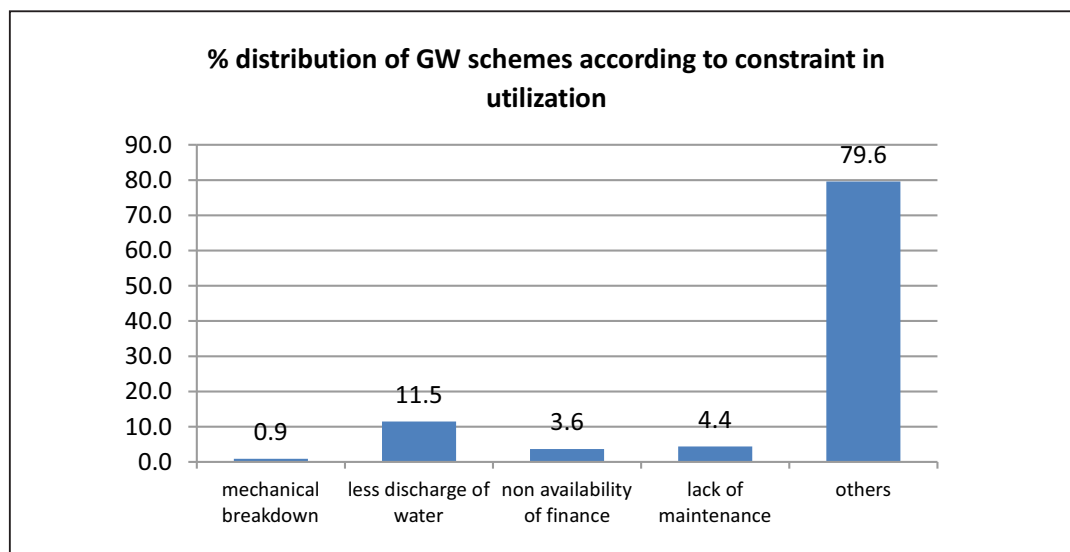
Surface lift schemes have the highest IPC & IPU followed by dugwell schemes. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 50% utilization of the potential created except dugwells where it is 44%. A comparative chart showing scheme-wise ratio of IPU/IPC in the 6th and 5th MI census is given below.

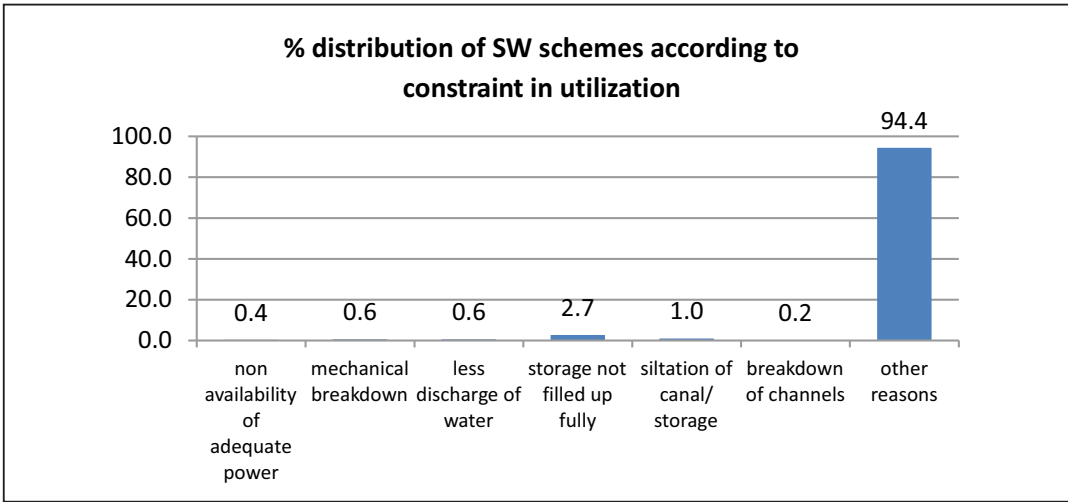


Underutilization of In Use schemes

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, 1,028 (18.3%) schemes out of 5,605 'in use' schemes in Andaman & Nicobar are under-utilized due to several reasons. Remaining 81.7 % 'in use' MI schemes are functioning without any constraints.

Among 1,028 under-utilized schemes, 549 are GW schemes and 479 are SW schemes. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in graph given below.





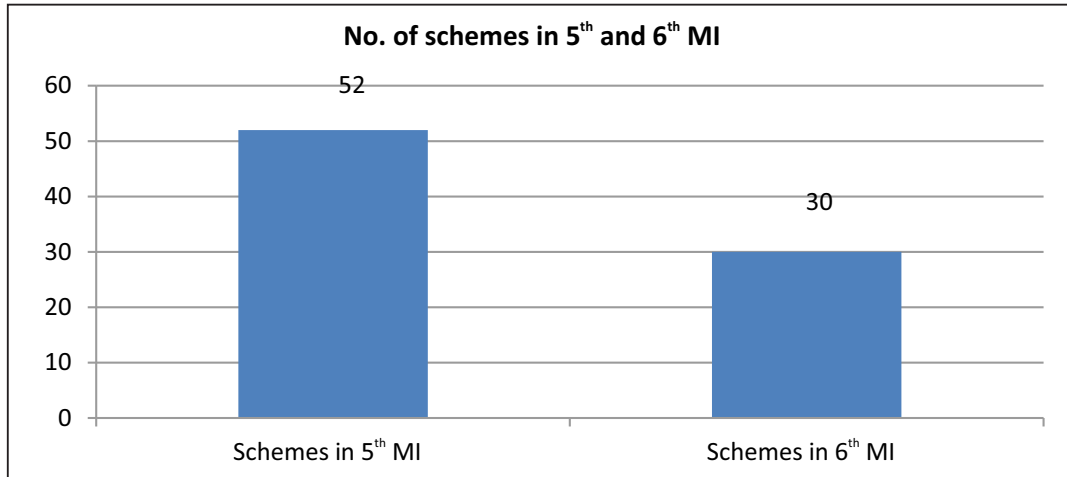
Key Parameters of 6 th MI Census - Andaman & Nicobar						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	2,429			40.71
	Shallow Tubewell	No.	40			0.67
	Medium Tubewell	No.	0			0.00
	Deep Tubewells	No.	0			0.00
	Ground Water schemes	No.	2,469			41.38
	Surface Flow	No.	68			1.14
	Surface Lift	No.	3,429			57.48
	Surface Water schemes	No.	3,497			58.62
	Total schemes	No.	5,966			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	2,404	4,268	6,672	
	IPC	Ha	2,677	4,952	7,629	
	IPU	Ha	1,192	2,533	3,725	
	IPC of in use schemes	Ha	2,566	4,786	7,352	
	IPU of in use schemes	Ha	1,157	2,514	3,671	
	% Ratio of IPU wrt IPC	%	0.45	0.51	0.49	
	Gap in IPC and IPU	Ha	1,485	2,419	3,904	
Ownership	Individual ownership	No.	1,619	2,798	4,417	74.04
	Group of Farmers	No.	184	128	312	5.23
	Public owned	No.	666	571	1,237	20.73
	Total	No.	2,469	3,497	5,966	100.00
Social Status of Individual Owner	SC	No.	0	0	0	0.00
	ST	No.	187	1	188	4.26
	OBC	No.	591	1,861	2,452	55.51
	Others	No.	841	936	1,777	40.23
	Total Individual	No.	1,619	2,798	4,417	100.00

Key Parameters of 6th MI Census - Andaman & Nicobar

Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	47	9	56	1.00
	Open Water Channel (unlined/ kutchha)	No.	260	23	283	5.05
	Underground pipe	No.	11	5	16	0.29
	Surface Pipe	No.	985	2,429	3,414	60.91
	Drip	No.	0	2	2	0.04
	Sprinklers	No.	0	2	2	0.04
	Others	No.	984	848	1,832	32.69
	Total	No.	2,287	3,318	5,605	100.00

CHANDIGARH

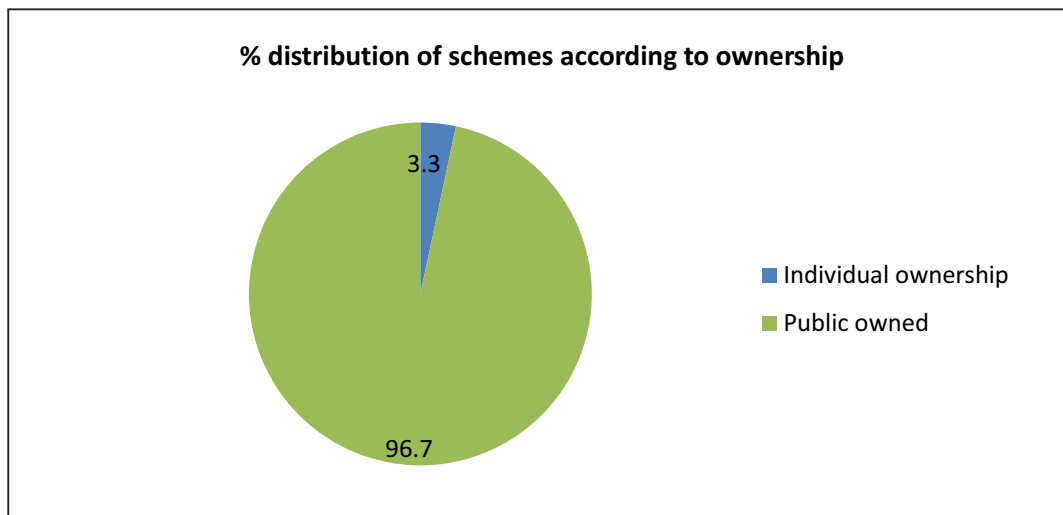
As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Chandigarh has 30 MI schemes. All 30 schemes are Ground Water (GW) schemes. There is a decline to the tune of 42.3% in 6th MI census as compared to the 52 schemes in 5th MI census in the State of Chandigarh.



All 30 MI schemes reported in Chandigarh are deep tubewells and all of them are reported to be in use.

Ownership of MI schemes

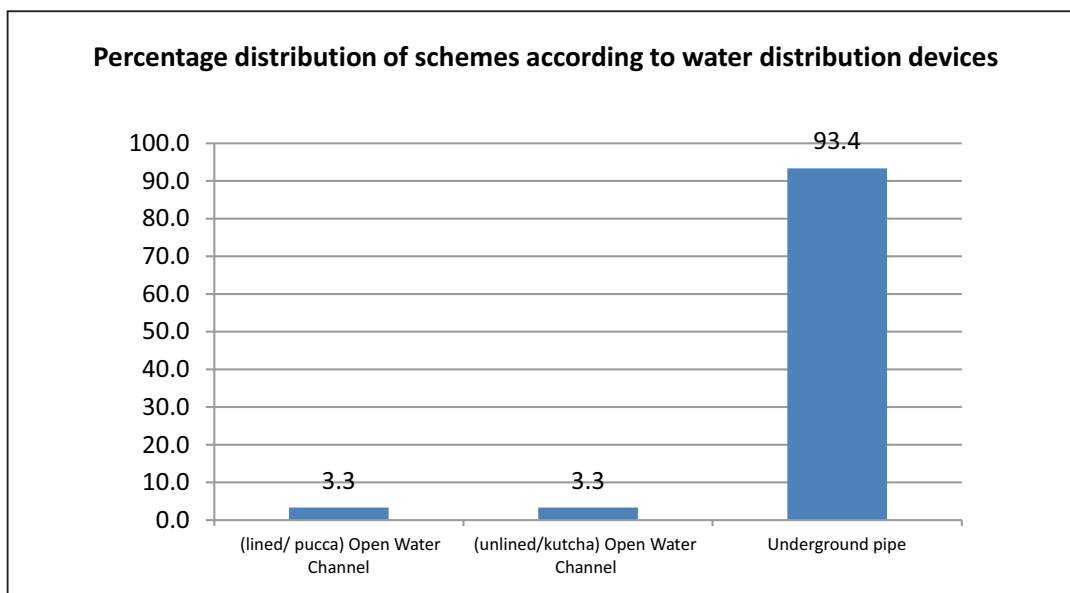
Out of 30 MI schemes, majority of the schemes i.e. 96.7% (29) are public owned. Remaining 3.3% (1) scheme is under individual ownership



Lifting devices, source of energy & Water distribution devices

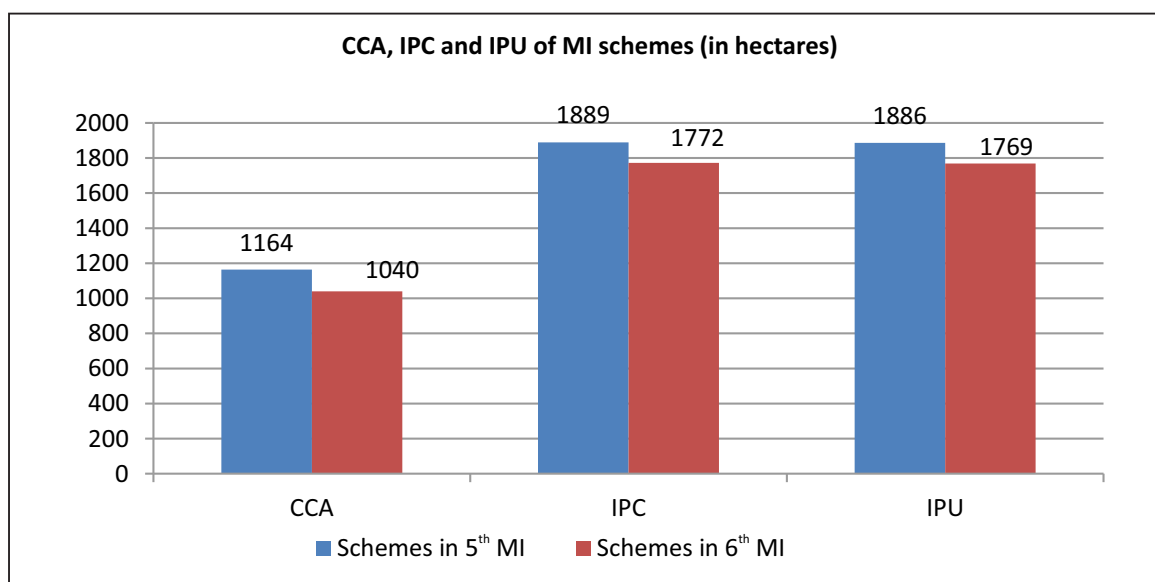
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. In Chandigarh, all schemes are GW schemes (deep tubewells). All (30) schemes have submersible pump as lifting device and

all of them are using electricity (electric pump) as source of energy. Majority of the MI schemes i.e., 93.4 % (28) distribute water through underground pipe. The percentage share of schemes according to water distribution devices is depicted in the figure given below.



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

There has been decline of 6.2% 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 has decreased from 1,889 hectares during 5th MI census to 1,772 hectares during 6th MI census. Irrigation potential utilized was 1886 hectares during 5th MI Census in Chandigarh, which has declined by 6.2% 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.



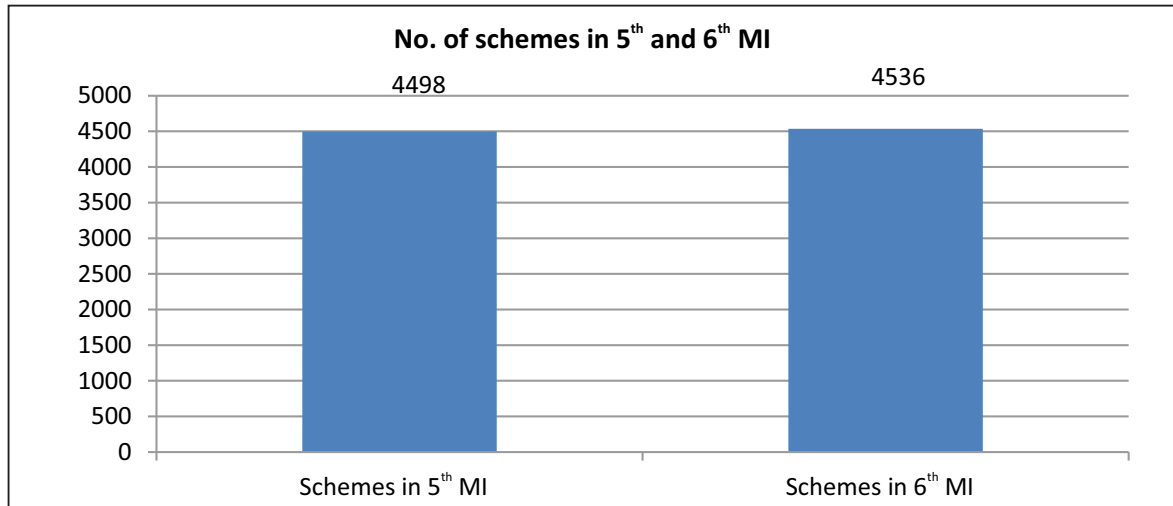
Underutilization of In Use schemes

It is observed in the previous rounds of MI censuses that many 'in use' schemes were under-utilized due to various constraints. All the 30 GW schemes in Chandigarh are reported to be under-utilized. 'Non-availability of adequate power' is the single reported factor contributing to constraints in utilization of all the deep tubewells in Chandigarh.

Key Parameters of 6 th MI Census - Chandigarh					
Parameter		Unit	Value		%
	Deep Tubewells	No.	30		100.00
	Ground Water schemes	No.	30		100.00
	Total schemes	No.	30		100.00
			GW	Total	
CCA, IPC and IPU	CCA	Ha	1,040	1,040	
	IPC	Ha	1,772	1,772	
	IPU	Ha	1,769	1,769	
	IPC of in use schemes	Ha	1,772	1,772	
	IPU of in use schemes	Ha	1,769	1,769	
	% Ratio of IPU wrt IPC	%	99.83	99.83	
	Gap in IPC and IPU	Ha	3	3	
Ownership	Individual ownership	No.	1	1	3.33
	Group of Farmers	No.	0	0	0.00
	Public owned	No.	29	29	96.67
	Total	No.	30	30	100.00
Social Status of Individual Owner	SC	No.	0	0	0.00
	ST	No.	0	0	0.00
	OBC	No.	0	0	0.00
	Others	No.	1	1	100.00
	Total Individual	No.	1	1	100.00
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	1	1	3.33
	Open Water Channel (unlined/ kutcha)	No.	1	1	3.33
	Underground pipe	No.	28	28	93.33
	Surface Pipe	No.	0	0	0.00
	Drip	No.	0	0	0.00
	Sprinklers	No.	0	0	0.00
	Others	No.	0	0	0.00
	Total	No.	30	30	100.00

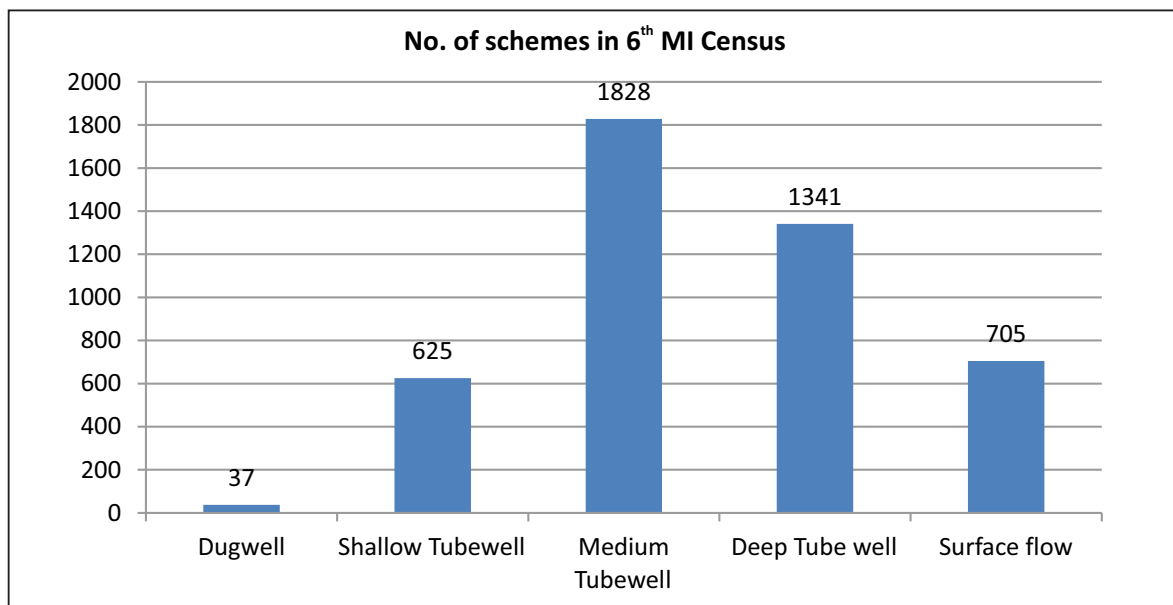
PUDUCHERRY

As per the 6th Census of Minor irrigation (MI) schemes with reference year 2017-18, Puducherry has 4,536 MI schemes comprising of 84.5% (3,831) Ground Water (GW) schemes and 15.5% (705) Surface Water (SW) schemes. There is a marginal increase to the tune of 0.8% in 6th MI census as compared to the 4,498 schemes in 5th MI census in Puducherry.



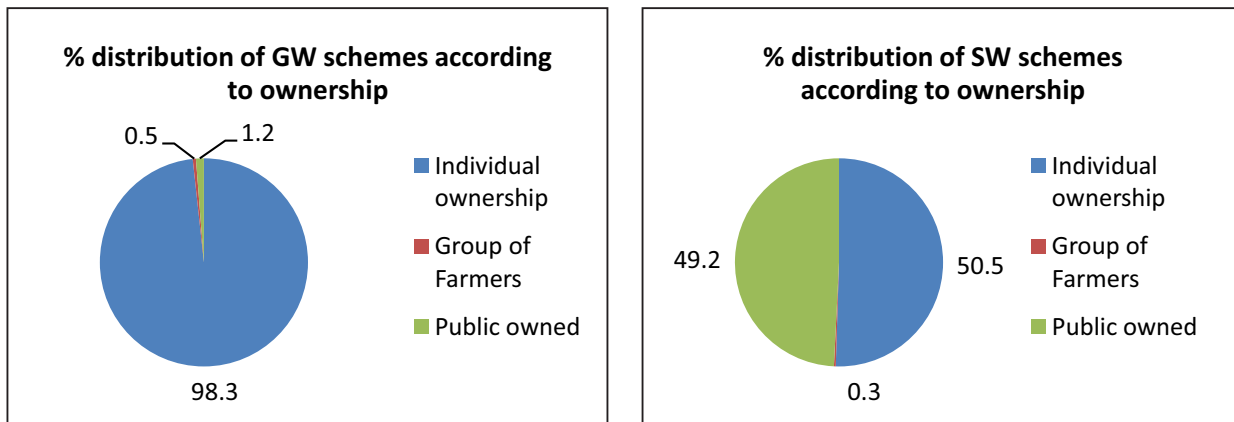
The State Government has reported a marginal increase of 0.4% (17) in GW schemes and 3.1% (21) in SW schemes during 6th MI census as compared to the 3,814 GW schemes and 684 SW schemes recorded in 5th MI census.

Out of the 4,536 MI schemes reported in Puducherry, 40.3% (1,828) are medium tubewells followed by 29.6% (1,341) deep tubewells, 15.5% (705) surface flow, 13.8% (625) shallow tubewell and 0.8% (37) are dugwell schemes. Distribution of different GW and SW schemes is shown in the chart given below.

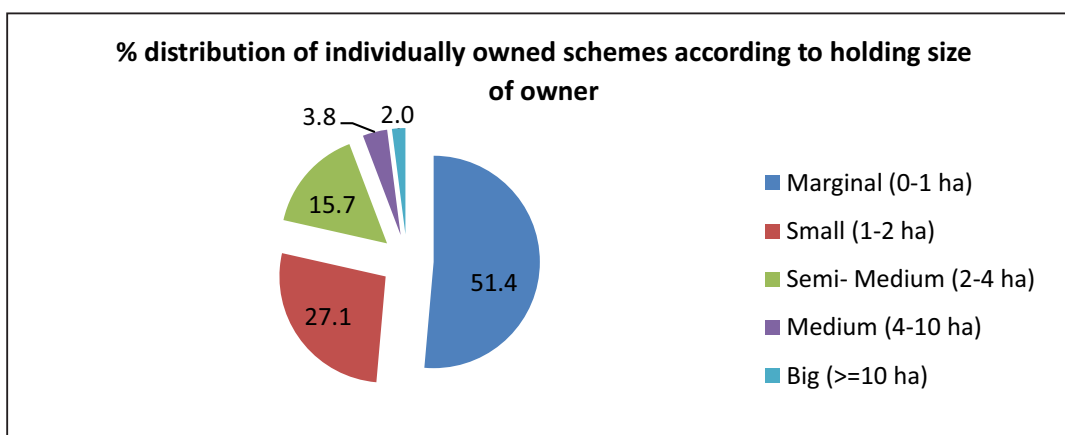


Ownership of MI schemes

Out of 4,536 MI schemes, majority of the schemes i.e. 90.8% (4,121) continue to remain under individual ownership, 0.5% (21) schemes are owned by group of farmers and 8.7% (394) schemes are public owned. Among 3,831 GW schemes, 98.3% (3,765) schemes are individually owned and among 705 SW schemes, 50.5% (356) are owned by individual farmers. Most of GW schemes in Puducherry are owned by individual farmers as brought out in the figure given below. This shows that individual farmers are getting maximum benefit from GW schemes for minor irrigation.

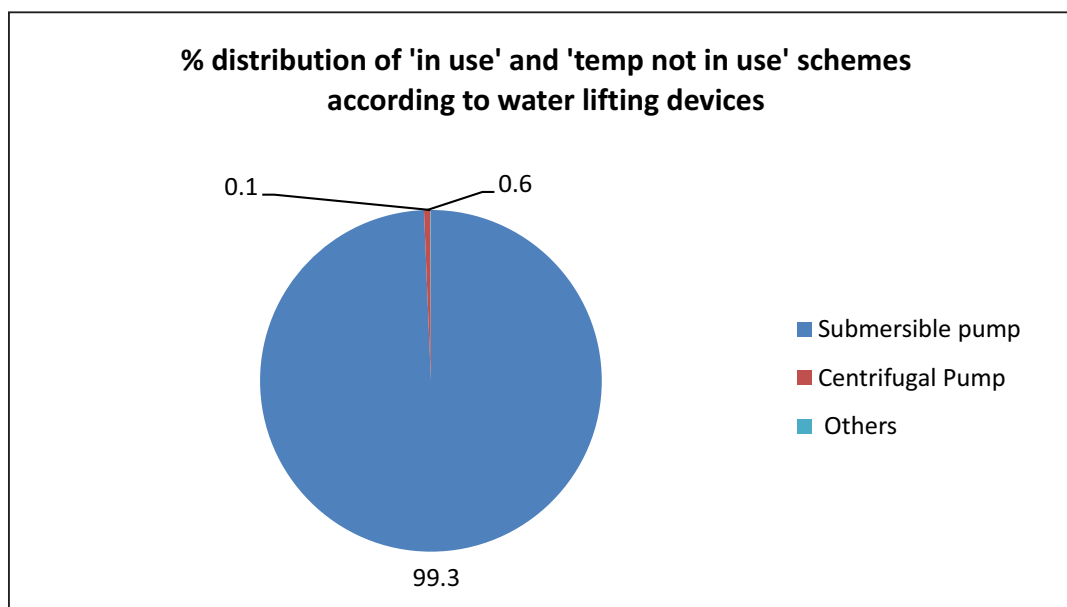


Out of 4,121 individually owned schemes, based on holding size of owner, small and marginal farmers (having less than 2 hectares) still own a major share of 78.5% (3,236) in MI schemes. Rest of the 21.5% schemes are owned by semi-medium farmers to big farmers with holding size more than 2 hectares which is shown in the pie chart given below. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial role of improving the livelihood of small and marginal farmers.



Distribution of lifting devices in MI schemes

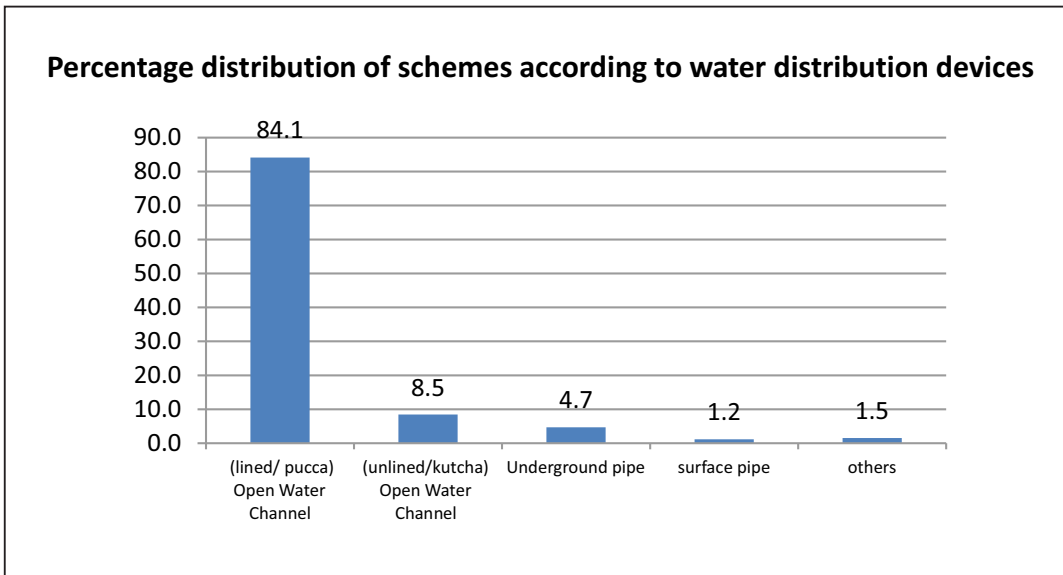
During 6th MI census, the information on lifting device was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 3,704, out of 4,536 MI schemes. Out of these (3,704) schemes, majority of schemes i.e. 99.3% (3,680) have submersible pump as lifting device and 0.6% (22) schemes have centrifugal pump as lifting device. Only 0.1% (2) scheme has some other lifting device. The percentage distribution of schemes according to lifting devices is depicted in the figure given below.



Source of energy & Water distribution device

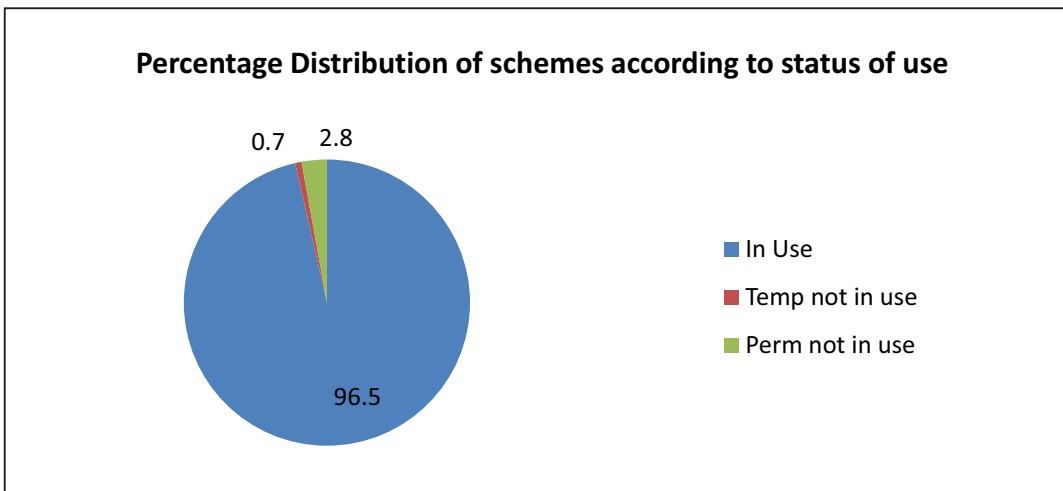
The information on source of energy used for operating lifting device for lifting water from the source was collected for 'in use' and 'temporarily not in use' schemes which comes under the category of ground water and surface lift schemes. The number of such schemes is 3,704. Out of these (3,704) schemes, majority of schemes i.e. 99.9% (3,700) schemes are using electricity as source of energy. Rest 0.1% (4) schemes are using diesel pumps and other sources of energy.

As per the 6th MI Census, the percentage share of MI schemes which distribute water through open water channel (lined/pucca) is 84.1% (3,680) followed by 8.5% (370) open water channel (unlined/kutchra). The water distribution devices used in the rest of the MI schemes are 4.7% (205) underground pipe, 1.2% (51) surface pipe and 1.5% (68) others. The percentage share of schemes according to water distribution devices is depicted in the figure given below.

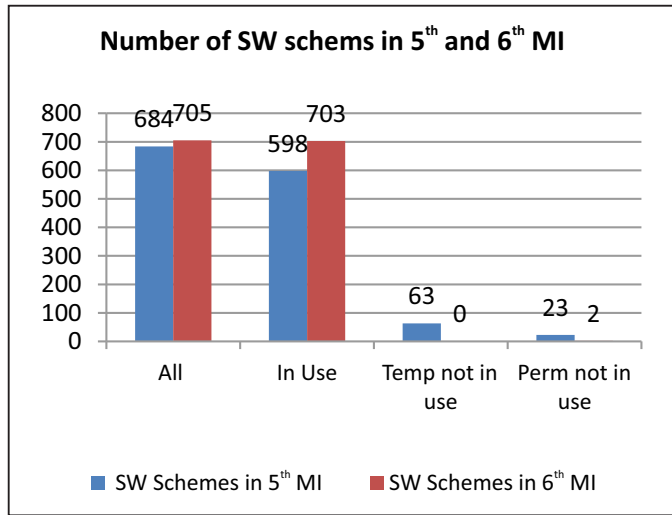
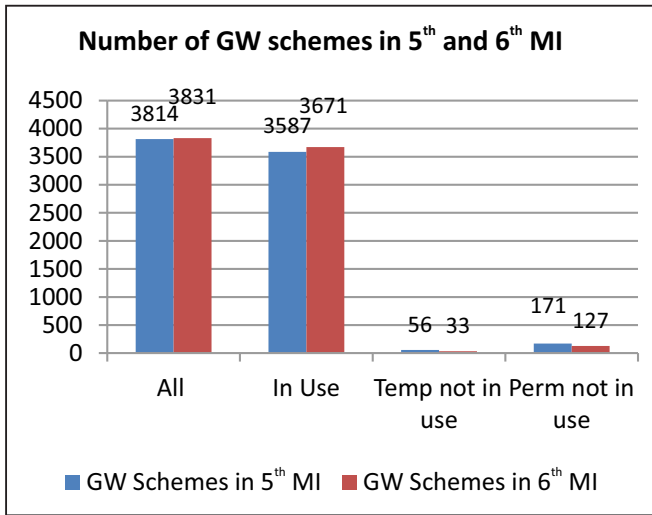


Status of MI schemes

Out of 4,536 MI schemes, 96.5% (4,374) are 'in use', 0.7% (33) are 'temporarily not in use' and 2.8% (129) are 'permanently not in use' schemes which is depicted in the pie chart given below.

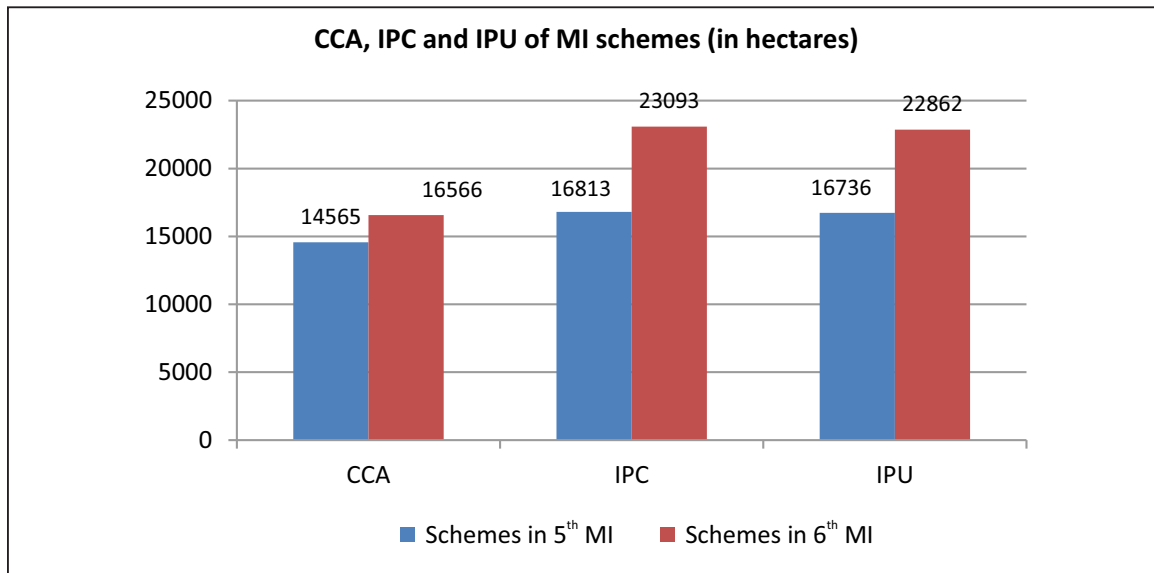


All 33 'temporarily not in use' schemes are GW schemes. Among 129 'permanently not in use' schemes, 127 are GW schemes and 2 are SW schemes. Status of GW and SW schemes during 5th and 6th MI census is shown in the graphs given below:



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

There has been increase of 37.4 % 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 has increased from 16,813 hectares during 5th MI census to 23,093 hectares during 6th MI census. Irrigation potential utilized was 16,736 hectares during 5th MI Census in Puducherry, which has increased by 36.6% 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, 8,327 hectares irrigation potential is created through GW schemes and 14,766 hectares through SW schemes. Irrigation potential utilized is 8,275 hectares and 14,588 hectares for GW and SW schemes respectively. This shows that 99.4 % of the potential created through GW schemes has been utilized while percentage utilization in respect of SW schemes is 98.8 %. The scheme-wise ratio of IPU to IPC in Puducherry is presented in the table given below.

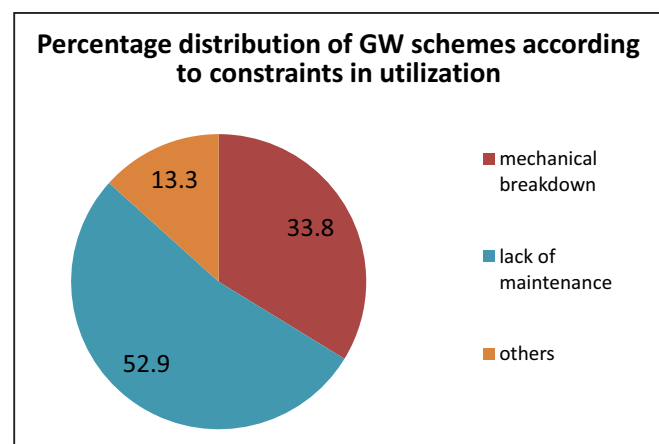
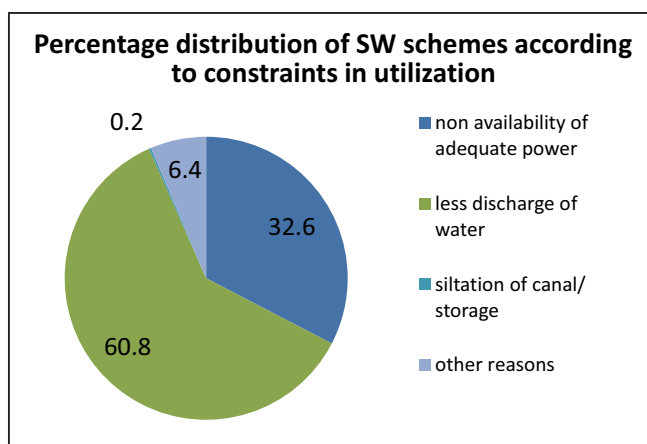
Scheme-wise ratio of IPU to IPC in Puducherry			
	IPC	IPU	Ratio of IPU/IPC
Dugwell	37	37	1
Shallow Tubewell	867	852	0.98
Medium Tubewell	4,013	3,995	0.99
Deep Tube well	3,409	3,391	0.99
Surface flow	14,766	14,588	0.99

Surface flow schemes have the highest IPC & IPU followed by medium tubewells. If we see ratio of IPU to IPC in 6th MI census in different type of schemes, all the schemes show more than 98% utilization of the potential created.

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, 663 (15.2%) schemes out of 4,374 'in use' schemes in Puducherry are under-utilised due to several reasons. Remaining 84.8% 'in use' MI schemes are functioning without any constraints.

Among 663 under-utilized schemes, 240 are GW schemes and 423 are SW schemes. The major factor contributing to constraints in utilization of GW schemes is reported to be 'Lack of maintenance' followed by mechanical breakdown. On the other hand, the SW schemes are underutilized mainly due to 'less discharge of water'. The percentage distribution of reasons of under-utilization of GW and SW schemes is shown in pie charts given below.



Key Parameters of 6 th MI Census - Puducherry						
Parameter		Unit	Value			%
Number of schemes	Dugwells	No.	37			0.82
	Shallow Tubewell	No.	625			13.78
	Medium Tubewell	No.	1,828			40.30
	Deep Tubewells	No.	1,341			29.56
	Ground Water schemes	No.	3,831			84.46
	Surface Flow	No.	705			15.54
	Surface Lift	No.	0			0.00
	Surface Water schemes	No.	705			15.54
	Total schemes	No.	4,536			100.00
			GW	SW	Total	
CCA, IPC and IPU	CCA	Ha	4,786	11,780	16,566	
	IPC	Ha	8,327	14,766	23,093	
	IPU	Ha	8,275	14,588	22,862	
	IPC of in use schemes	Ha	8,212	14,682	22,895	
	IPU of in use schemes	Ha	8,206	14,588	22,794	
	% Ratio of IPU wrt IPC	%	99.38	98.79	99.00	
	Gap in IPC and IPU	Ha	52	178	231	
Ownership	Individual ownership	No.	3,765	356	4,121	90.85
	Group of Farmers	No.	19	2	21	0.46
	Public owned	No.	47	347	394	8.69
	Total	No.	3,831	705	4,536	100.00
Social Status of Individual Owner	SC	No.	140	234	374	9.08
	ST	No.	7	0	7	0.17
	OBC	No.	3,008	31	3,039	73.74
	Others	No.	610	91	701	17.01
	Total Individual	No.	3,765	356	4,121	100.00

Key Parameters of 6 th MI Census - Puducherry						
Parameter		Unit	Value			%
Water Distribution Devices	Open Water Channel (Lined/ Pucca)	No.	3,203	477	3,680	84.13
	Open Water Channel (unlined/ kutchra)	No.	212	158	370	8.46
	Underground pipe	No.	205	0	205	4.69
	Surface Pipe	No.	51	0	51	1.17
	Drip	No.	0	0	0	0.00
	Sprinklers	No.	0	0	0	0.00
	Others	No.	0	68	68	1.55
	Total	No.	3,671	703	4,374	100.00



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