



GOVERNMENT OF KERALA

**REPORT ON 6th CENSUS
OF
MINOR IRRIGATION SCHEMES
(2017-18)**

**Irrigation Department
RMIS Cell
Government of Kerala**

&

**Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Minor Irrigation (Statistics) Wing**

PREFACE

Most of the rain water received during monsoon period flows to sea within 48 hours of rainfall due to the character of the geographic terrain of the state and rainfall here is seasonal in nature. Hence, irrigation is a must for the successful cultivation of crops in Kerala. It helps to grow crops, maintain landscape and revegetate disturbed soils in dry area and during times of below average rainfall. Minor irrigation plays an important role in the development of agriculture and livelihoods particularly in drought prone areas and areas outside command of Major and Medium projects. This requires smaller investment, have the advantage of short gestation period and its benefits reach the farmers immediately.

The Centrally Sponsored Plan Scheme "Rationalisation of Minor Irrigation Statistics (RMIS)" was launched in 1987 with 100% central assistance to the state. The major activity under the scheme is All India Census of Minor Irrigation Schemes conducted quinquennially in the states covering all ground water and Surface water Minor Irrigation Schemes. The 6th MI Census with reference year 2017-18 along with the census of 1st Water Bodies was conducted under RMIS, Ministry of Water Resources GOI. The main purpose of the census was to collect comprehensive information of the status of MI Schemes, their working condition, mode of irrigation, irrigation potential created and utilized in each scheme. The primary data was collected in prescribed schedules by the Overseers and Draftsmen and supervised by the Assistant Engineers and Assistant Executive Engineers of Irrigation Department.

The report provides results at the district and state level by the way of integrated tables supported by statistical charts and graphs. District wise census data by specific types of schemes- dug wells, shallow, medium and deep tube wells, surface flow and lift schemes along with specific features have also been presented.

At this juncture, I would like to thank the Additional Chief Secretary of Water Resources, Principal Secretary to Government, Department of Irrigation, Principal Secretary to Government, Planning and Economic

Affairs Department and Director of Economics and Statistics, and Deputy Chief Engineer (Irrigation & Administration) who gave their full support and guidance in successful completion of the Minor Irrigation Census 2017-18.

I would like to thank the Executive Engineers (Minor Irrigation) in all districts who regularly monitored the field work and personally review the progress made till the end of census operations.

I register my appreciation to the primary workers, overseers and draftsmen of Minor Irrigation Department who did the field work in collecting the qualitative information and completed it within the prescribed time schedule and the Assistant Engineers, Assistant Executive Engineers and their team who provided all necessary information required by the field functionaries and supervised the work rigorously till the end of the census duty.

I also comment the responsibility and zeal with which the RMIS Cell of this department and their staffs, who right from the stage of imparting the training to the primary workers, regular supervision of the field work, through scrutiny of the data schedules, until preparing the report had done excellent job in smooth conduct of the census work.

This report will help policy makers, planners, research scholars, academicians, administrators, scientists, ground water users, agriculturists and all other stake holders in this field.

Thiruvananthapuram
06/02/2024



Priyesh. R
Chief Engineer (I&A)
(FAC)

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HIGHLIGHTS

- As per the 6th Census of Minor Irrigation (MI) Schemes with reference year 2017-18, Kerala has 92,574 Minor Irrigation 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 the 6th MI census as compared to the 1, 03,657 schemes in the 5th MI census in the State of Kerala.
- The State has reported a decline of 24.3% (20,015) in GW schemes and a growth of 42.2% (8,932) in SW schemes during the 6th MI census as compared to the 82,468 GW schemes and 21,189 SW schemes recorded in the 5th census.
- Out of the 92,574 MI schemes reported in the State of Kerala, 56.32% (52,135) are dug well schemes followed by 23.6% (21,852) surface lift, 8.93% (8,269) surface flow, 5.73% (5,301) medium tube well, 3.4% (3,146) shallow tube well and 2.02% (1,871) deep tube well schemes.
- Out of 92,574 MI schemes, the 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 groups 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 the MI structures in Kerala are owned by individual farmers/public.
- Out of 80,011 individually owned schemes, based on the holding size of the owner, marginal farmers own a major share of 82.5% (65,995) in MI schemes. The rest of the 17.5% schemes are owned by small farmers, semi- medium, medium and big farmers. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which will play crucial roles in improving the livelihood of marginal farmers.

- The 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 a single source of finance whereas 25.4% (20,330) have more than one source of finance. In these schemes with a single source of finance (59,681), the majority of schemes i.e. 91.3% (54,511) are being financed by own savings of individual farmers. Other reported sources of finance are Bank Loan 1.9% (1,156), Government funds 1.1% (633), money lender 0.4% (211) and others 5.3% (3,170).
- Out of a 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.
- 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.
- During the 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, the majority of schemes i.e. 70.0% (58,921) have a centrifugal pump, 22.1% (18,557) are operated with a 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 information on the source of energy used for operating the 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 84,168. Out of these (84,168) schemes, the majority of schemes i.e., 89.4% (75,211) schemes are using an electric pump as a source of energy followed by diesel pump in 5.1% (4,263) schemes whereas the remaining 5.5% (4,694) use energy generated through manual/animal sources, wind mills, solar pump and other devices.

- As per the 6th MI Census, the percentage share of MI schemes that distribute water through an open water channel (unlined/ kutchra) is 22.6% (20,815) followed by 7.4% (6,848) through an underground pipe and 4.6% (4,241) through an 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.
- There has been a decrease of 26.9% in the irrigation potential created from minor irrigation structures in the State during the 6th Minor Irrigation Census as compared to the 5th Minor Irrigation Census since IPC is decreased from 2,44,705 hectares during the 5th MI census to 1,81,611 hectares during the 6th MI census. Irrigation potential utilized was 2, 25,872 hectares during the 5th MI Census in Kerala, which has decreased by 23.4% during the 6th MI Census.
- As per the 6th MI Census, 35,346 hectares of 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%.
- Surface flow has the highest IPC & IPU followed by surface lift schemes. If we see the ratio of IPU to IPC in the 6thMI census in different types of schemes, all the schemes show more than 95% utilization of the potential created.
- 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. The 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.

Key Parameters of 6th Minor Irrigation Census

	Parameter	Unit	Value	Percentage
Number of Schemes	Dug well	No.	52135	56.32
	Shallow Tube well	No.	3146	3.4
	Medium Tube well	No.	5301	5.73
	Deep Tube well	No.	1871	2.02
	Ground Water Schemes	No.	62453	67.46
	Surface Flow	No.	8269	8.93
	Surface Lift	No.	21852	23.6
	Surface water Schemes	No.	30121	32.54
	Total Schemes	No.	92574	100

	Parameter	Unit	Ground Water	Surface Water	Total
CCA, IPC & IPU	CCA	Ha	33883	138320	172203
	IPC	Ha	35346	146265	181611
	IPU	Ha	34449	140550	174999
	IPC of in use Schemes	Ha	35189	144584	179773
	IPU of in use Schemes	Ha	34321	139241	173562
	% Ratio of IPU wrt IPC	%	97.46	96.09	96.36
	Gap in IPC & IPU	Ha	897	5715	6612

Parameter		Unit	Value			Percentage
Ownership	Individual Ownership	No	59799	20212	80011	86.43
	Group of Farmers	No	928	3482	4410	4.76
	Public Owned	No	1726	6427	8153	8.81
	Total	No	62453	30121	92574	100
Social Status of Individual Owner	SC	No	1258	446	1704	2.13
	ST	No	352	212	564	0.7
	OBC	No	26347	7262	33609	42.01
	Others	No	31842	12292	44134	55.16
	Total Individual	No	59799	20212	80011	100
Water Distribution Devices	Open Water Channel (Lined/Pucca)	No	2146	2095	4241	4.62
	Open Water Channel (Unlined/Kutchra)	No	12222	8593	20815	22.65
	Underground Pipe	No	5613	1235	6848	7.45
	Surface Pipe	No	36553	13202	49755	54.15
	Drip	No	1271	261	1532	1.67
	Sprinklers	No	2091	1548	3639	3.96
	Others	No	2304	2747	5051	5.5
	Total	No	62200	29681	91881	100

CHAPTER I

GENERAL BACKGROUND

1.1 Introduction

Considering the huge population, Agriculture with its allied sectors are the largest livelihood provider in India. The agriculture sector also contributes a significant figure to the Gross Domestic Product (GDP). Agriculture also acts as a supplier of raw materials for various industries. While the agriculture sector in Kerala has much potential, it is facing many challenges concerning growth. Kerala is characterized by the existence of a series of micro environments suited to diverse kinds of agriculture and related activity. It is our task to translate the potential of Kerala's biodiversity into income for our people.

Irrigation mainly refers to the application of the required amount of water to the plants at required intervals. It is necessary for both farming and increasing the yield from the farm. It also benefits by providing moisture for the germination of seeds, making the soil more fertile and facilitating proper growth and development. Various irrigation schemes in India were classified by the erstwhile planning commission into three parts viz. Minor, Medium and Major Irrigation schemes. Minor irrigation projects have both surface and groundwater as their source, while major and medium projects mostly exploit surface water resources. Minor irrigation schemes contribute a major share in the growing irrigation across the country.

1.2 Minor Irrigation Schemes

Irrigation schemes using either in groundwater or in surface water and having a Cultivable Command Area up to 2000 hectares individually are categorized as Minor Irrigation (M.I) Schemes. The schemes have been categorized broadly into six major types (1) Dug well (2) Shallow Tube well(3) Medium Tube well (4) Deep Tube well (5)Surface flow schemes and (6) Surface lift schemes.

The surface water schemes comprise surface flow schemes and surface lift irrigation schemes. The surface flow schemes consist of tanks, check dams and structures and can serve as water conservation cum ground water recharge scheme. Surface lift schemes are generally built in regions where topography does not permit direct flow irrigation from rivers and

streams and hence water has to be lifted into irrigation channels. These works are similar to diversion schemes but in addition, pumps are installed and pump houses are also constructed.

The ground water schemes comprise dug well, dug cum bore wells, shallow, medium and deep tube wells. Dug wells cover ordinary open wells of varying dimensions. The tube wells may be categorized as shallow whose depth does not exceed 35 meters, medium whose depth is between 35-70 meters and deep tube well whose depth is more than 70 meters.

1.3 Sources of Data

The main sources of Minor Irrigation data are

(a) Land Use Statistics of Ministry of Agriculture & Farmers Welfare

The Department of Economics And Statistics, Government of Kerala collects, compiles and publishes the net area irrigated by the Government canals, Private canals, tanks, tube wells, other wells and other sources for Blocks/ Districts and State level. The Primary data for land use statistics are collected by Statistical Investigators in prescribed forms and are estimated based on sample surveys. However these data do not give information on the number of Minor irrigation structures.

(b) Periodical Progress Reports

Minor irrigation programs in the state are dealt with different departments under different development sectors. Periodical progress reports from these departments provide financial provisions for the construction of M I schemes in the public sector and the number of M I Structures by Government or local bodies. The structures installed by the farmers from their efforts are generally not recorded.

(c) Administration Report

Since M I Programme is dealt by more than one department, the annual administration report of the irrigation department gives the statistics of that department only.

(d) Adhoc Reports

Adhoc reports prepared by various agencies based on sample surveys of M I Works have a definite purpose and accordingly, the priorities and weightage given to the irrigation data suffer from several deficiencies. They are sometimes intended to throw light upon the socio-economic impact in certain areas.

(e) Agriculture Census

Department of Economics & Statistics, Government of Kerala, provides information on the number of irrigation sources by type of social class and size class of farmers owning these assets through the Agriculture Census of the Ministry of Agriculture and Farmers Welfare. The Census also provides data on area irrigated by the different sources of irrigation by social classes as well as by size class holding of farmers once in five years.

(f) Cost of Cultivation Survey

Cost of Cultivation Survey by Agriculture Universities and Department of Economics & Statistics, Government of Kerala provides some information on the use of Minor Irrigation Schemes and crop- wise cost of irrigation by different sources.

CHAPTER II

Development of Minor Irrigation and its Organizations

2.1 Development of Minor Irrigation

In Government of India, the Minor Irrigation section is handled by the Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD&GR), Agriculture & Farmers Welfare, Rural Development and the Ministry of Tribal Affairs. At the state level, respective Ministries and Departments of Water Resources, Agriculture and Rural Development deal with the sector. The augmentation, conservation and efficient management of water resources are primarily undertaken by the State Government and the Central Government provides technical and financial assistance to the state through various schemes and programs for the development of the sector.

Central government provides financial assistance to states for constructing MI Schemes either through the Department of Irrigation/MI, Water Resources Development or under PWD/local bodies. In the state, subsidy is being provided for the construction of MI schemes for drilling/boring of tube wells, for digging of wells, purchasing of water distribution devices and micro irrigation equipment like pipes, drip, sprinklers, etc.

No single State Government Department is involved in the development of MI works and a large number of private works are being constructed with or without the support of the Government. Hence at the state level, coordination and monitoring of MI Schemes become difficult. The National Commission on Agriculture examined the status of MI Schemes in India and recommended that a census of irrigation sources be carried out once in five years. A detailed Census of MI works was first recommended by the Planning Commission in 1970.

A central scheme “Rationalization of Minor Irrigation Statistics (RMIS)” was launched in 1987-88 with 100% central assistance to States/UTs. The RMIS Scheme became part of the Central Sector Scheme “Development of Water Resources Information System (DWRIS)” during the XI th Five Year Plan. During XII plan, RMIS was a subcomponent of “The Irrigation Census” component of plan scheme DWRIS.

Currently Irrigation Census is a standalone component under the umbrella scheme – Pradhan Mantri Krishi Sinchai Yojana (PMKSY) and other schemes. PMKSY has been formulated with the vision of extending the coverage of irrigation “Har khait ko pani”

and improving water use efficiency “more crop per drop” in a focused manner with end to end solutions on source creation, distribution, management, field applications and extension activities. PMKSY not only focuses on creating water resources for assured irrigation, but it is also creating protective irrigation by harnessing rain water at the micro level- “Jal Sanchay” & “Jal Sinchan”.

2.2 Rationalisation of Minor Irrigation Statistics (RMIS)

The main objective of the RMIS scheme is to build up a comprehensive and reliable database in the MI sector for future planning. The major activity under the scheme is the All India Census of Minor Irrigation Schemes conducted quinquennially in the States/UTs covering all ground water and surface water schemes. MI Census collects detailed information on various parameters like irrigation sources, irrigation potential created, potential utilizes, ownership, holding the type of land by owner , devices used for lifting water, sources of energy, energy conserving devices such as sprinkler and drip irrigation, use of non-conventional energy sources such as solar pumps, windmills, etc.

The first minor Irrigation census was conducted with the reference year 1986-87, the second with the reference year 1993-94, the third in 2000-2001, the fourth with 2006-2007 and the fifth census was conducted with reference year 2013-2014. The sixth MI Census with reference year 2017-18 along with the Census of Water Bodies is being conducted during 2017-18 to 2019-20. The scope of the “Irrigation Census” scheme has been enlarged by the launch of the First Census of Water Bodies in convergence with the 6th Minor Irrigation Census to develop a national database for all water bodies. The convergence of the 6th MI Census and Census of Water Bodies offers substantial savings in resources on planning, training of field staff, field work, scrutiny, data entry, validation, etc. because the coverage area of both the censuses in rural areas is the same.

For the implementation of the scheme, each State/UT identifies a Nodal Department for the collection, compilation and dissemination of information for the State. State Statistical Cells are generally created within the Nodal Department and identified by the State Government. These Cells assist the Head of the Nodal Department or Census Commissioner in the State in organizing, coordinating and supervising the Census as and when planned by the Ministry. In Kerala, RMIS cell in irrigation department is the nodal department.

CHAPTER III

CENSUS OF MINOR IRRIGATION SCHEMES

3.1 MINOR IRRIGATION SCHEMES

All ground water schemes and surface water schemes (both flow and lift) having a Cultivable Command Area (CCA) of less than 2000 hectares individually are classified as minor irrigation schemes. Minor irrigation schemes are categorized into six types: (1) Dug wells/dug-cum-bore wells (2) Shallow Tube wells (3) Medium Tube wells and (4) Deep tube wells come under the category of Ground water schemes whereas (5) Surface flow schemes and (6) Surface lift schemes come under the category of Surface water schemes.

The need for conducting the census of minor irrigation arose as it was felt that a database of these schemes would serve the planning, development and management needs of irrigation in the country which contributes to the growth of agriculture in a big way. For effective implementation of policy and planning, a sound database regarding the minor irrigation sector is a must. So far five minor irrigation censuses have been conducted to meet this objective.

3.2 MINOR IRRIGATION CENSUS - CHRONOLOGY

- ❖ The 1st Census of minor irrigation schemes was conducted with reference year 1986-87 and the report was published in November 1993.
- ❖ The 2nd MI census with reference year 1993-94 was initiated in September 1994 and the report was published in March 2001. The information with respect to the adoption of newly developed technology of Water and Energy Conserving Devices such as Sprinkler and Drip Irrigation Systems and the use of Non-Conventional Energy sources such as Solar Pumps and Windmills were collected in this Census. For the first time, the census data was computerized with the help of the National Informatics Centre and the results were put on the website of the Ministry.
- ❖ The 3rd census of M.I. schemes with reference year 2000-2001 was conducted in 33 States/UTs. The report was released in November 2005. Data entry was initiated at the district level in States as against State Headquarters during the 3rdMI census.

- ❖ The 4th Census of MI schemes was conducted with reference year 2006-07 and the number of schedules was reduced from 6 to 3 in this Census –one village schedule, one ground water schedule covering all types of ground water schemes and one surface water schedule for surface water schemes. This Census also saw the introduction of new items of data collection like cost and source of funding of MI schemes, sources used to energize these schemes, etc. The national report of the 4th MI census was published in 2014.
- ❖ The 5th Census of minor irrigation schemes was conducted with the reference year 2013-14. For the first time, a new category of MI scheme namely- A Medium tube well (with a depth ranging from 35 to 70 m) was introduced under Ground water MI scheme, as per the needs of the State Government to capture the rapid changes in the ground water sector. New items of data collection like the number of lifting devices, more than one source of energy and source of finance were added to the scheme schedules to capture the diversities in the types of lifting devices, funding patterns, subsidies and sources of energy employed by the owners of minor irrigation schemes.

A dedicated online portal for the 5th MI Census was designed and maintained by the National Informatics Centre. In the 5th MI Census, online data entry and validation was attempted for the first time using this portal which facilitated real time progress monitoring of data entry/validation both by Central and State Governments. The national report of 5th MI census was published in 2017.

3.3 6th MINOR IRRIGATION CENSUS

The 6th Census of minor irrigation schemes was conducted with reference year 2017-18. Three schedules namely village schedule, ground water schedule and surface water schedule were canvassed in this census. The First Census of Water Bodies was conducted in convergence with the 6th Minor Irrigation schemes, for which two additional schedules namely the urban schedule and water body schedule were canvassed. The report of the First Census of Water Bodies has been published.

The changes which were incorporated in the 6th MI census as compared to the 5th MI census are as follows:

- The information about the gender of the owner of the MI scheme was also collected in the case of individual ownership, along with the social status of the owner.

- In the 5th Census, only the pre-monsoon average ground water level in a village was taken. In the 6th Census, the post-monsoon average ground water level was also canvassed in the village schedule.

- If an MI scheme is in the command area of any Major/Medium Irrigation scheme, the name of the Major/ Medium Scheme was also collected in the 6th census along with its reasons.

- The schemes meant only for the recharge of the Ground water was also covered in the 6th MI Census.

The fieldwork of the minor irrigation census was commenced in 2018-19. Training was imparted to State Government Officials in Regional Data processing Workshops and States/UTs started data entry and validation work on the online portal. Meanwhile tabulation plan was prepared by the MI-Statistics Wing was shared with National Informatics Centre. After completion of data entry and validation by the States/UTs, comments of the States/UTs on certain broad parameters were sought after scrutiny and thorough consistency checking of data emerging from the tabulation reports at the Central level. After rectification, if any, by State Governments, data on the online portal was freezed to generate the final tables on various parameters. After receiving comments on final tables from all States, the State level reports were generated and State level data was aggregated to finalize the National level report in its present form. The following tables have been generated from the 6th MI Census.

Integrated Tables:-

These tables contain district wise aggregate data for the reference year 2017-18 for all types of schemes on key items viz. Number, Irrigation Potential Created, Irrigation Potential Utilized for MI schemes, Crop-wise irrigation, Sources of finance for construction of schemes in the private sector, Distribution of MI schemes- by social category, Type of farmers, e.g., marginal, small, big farmers, Use of distribution devices, Constraints in utilization of MI schemes.

Scheme-wise tables:-

These contain detailed tables on other important aspects of ground water and surface water MI schemes separately by each type of scheme. The items covered are ownership of the

scheme, cost of construction, distribution device, social status of owner, type and status of the scheme, source of finance and water lifting device. The scheme-wise tables also provide data for each district separately on each item. Block & Village level data is available on the website of the Ministry and will also be made available in the Open Government Data (OGD) platform (<http://data.gov.in>) as per the National Data Sharing & Accessibility Policy (NDSAP), Government of India.

CHAPTER IV

METHODOLOGY OF MINOR IRRIGATION CENSUS

4.1 METHODOLOGY OF DATA COLLECTION

In the 6th MI Census, the traditional methodology i.e. canvassing paper based schedules for capturing the village level data and the MI scheme data from the rural areas was used.

The MI Census data was collected through canvassing different schedules for the village and minor irrigation schemes. The village schedule was canvassed from revenue / land records maintained in the office of Government authorities and enquiries from village level workers/gram pradhans etc. Scheme related schedules were canvassed by the enumerators through enquiries from the owners of the schemes. In the case of institutional schemes, the information was collected through available records. The schedules of enquiry along with instructions/ guidelines for filling them were provided separately.

Along with the field work, supervision and checking were done by:-(i) Enumerator's supervisor (ii) Block level officers (iii) District level officers (iv) State level officers as per the prescribed norms. After thorough scrutiny of the schedule, the data entry was done at State level on the online portal developed by NIC. The validated data was again examined at the Central Level before the generation of the final table.

4.2 COORDINATION MECHANISM

A Steering Committee was constituted at the Central level under the Chairmanship of the Secretary and members from NITI Aayog, Central line Ministries like the Ministry of

Agriculture, Rural Development, Panchayati Raj, Housing and Urban Affairs, Home Affairs, Statistics and Programme Implementation, State Governments of Rajasthan, Uttar Pradesh, Telangana, Haryana, West Bengal and Sikkim apart from Central Water Commission and Central Ground Water Board to guide and advise about the conduct of 6th MI Census. The methodology of the Census, schedules, etc. were finalized by the Steering Committee.

Steering Committees was also formed in the State with the Secretary of Water Resources Department as Chairman and members from the State Departments of Revenue, Irrigation, Panchayati Raj, State Planning, Directorate of Economics and Statistics, Rural Development and State head of National Sample Survey Office (Field Operations Division) to provide technical inputs and guide the State Nodal Statistical Cell during the Census operations. The Regional Chief Engineer of Central Water Commission and a representative from regional office of the Central Ground Water Board were also members of this Committee. Teams were also formed at the State level which included officers of the State Statistical Cell (RMIS cell) for conduct of census in the State. These teams were entrusted with the work of training, monitoring, coordination and supervision of the Census exercise in the State. Thus the technical staffs of the State Statistical Cells were trained during the State level trainings organized by the Centre.

4.3 FIELDWORK

The 6th Minor Irrigation Census was conducted under the overall charge of the Census Commissioner- Chief Engineer, Irrigation & Administration, and the Nodal department of the State. The fieldwork was also undertaken by the Nodal department itself. The primary work of collection of data was carried out by the enumerators –draftsman/overseers of irrigation department. The work of supervision was entrusted to Assistant Engineers, Assistant Executive Engineers and Executive Engineers in concerned Panchyath, Block and District level. In addition, Central team along with the State Statistical Cell officials conducted field visits in the State and checked the quality of field work.

The primary enumerators were required to take along-with them the list of all schemes covered in the last census while going for field work. He was supposed to visit and cover all these schemes again. He was also required to find out from village officials/knowledgeable people, any new MI schemes that had started functioning after last census. The primary enumerators, while canvassing the schedules, visited the owner of the minor irrigation

schemes or its next neighbour and collected information based on personal enquiry from him. The physical verification of the schemes was also done by the enumerators. The purpose of the Census was explained to the farmers/owners to win over their confidence in revealing the specific information in respect of minor irrigation schemes as the case may be with the assurance that the data furnished by them would be kept confidential.

After filling up the schedules, the enumerators were required to deposit all completed schedules to their immediate supervisor for scrutiny. The enumerators were also required to prepare the summary of all village schedules, schemes schedules in the prescribed format and submit it to his immediate supervisor.

4.4 SUPERVISION AND INSPECTION

Primary enumerators for field work were either village level workers or village accountants or Lekhpals or Patwaries or any other official designated by the State/UT Government. The work of supervision was entrusted to higher supervisor level officers of the field agency. However the overall quality of field work was monitored by Block/District/State level officers, who in order to ensure the correctness of data conducted frequent site visits of the schemes as per prescribed norms and checked the entries made by primary enumerators. In addition, Central team along with the State Statistical Cell officials conducted field visits in the States/UTs and checked the quality of field work

4.5 SAMPLE CHECK

The block level officer were required to visit at least 5 villages in his block and physically verify the schemes, quality of census and the extent of coverage of schemes in the village and scrutinize 35% of MI scheme schedules and 100% village schedule. This was introduced in the 6th MI Census for ensuring better quality of data. This scrutiny was done for just 10% of scheme schedules during 5th MI Census. This was to be carried out by the immediate supervisory officer of the enumerator in the field agency.

On completion of the scrutiny and after the field visits; block level officer was required to fill up the supervisor's report form and submit all the schedules to the district level officer concerned. At least 1% of the total schedules or 100 schedules, whichever is maximum, were supposed to be selected at random and scrutinized by the district level officer. The district level officer was advised to visit at least 5 villages in 5 separate blocks to physically verify the

quality and coverage of the MI schemes schedules. After the completion of inspection of the field work and scrutiny of the schedules; the supervisor's report form was to be filled up by the district level officer and submitted to the State Nodal office.

The Monthly Progress Reports on the Census were sent by the State adequately reflecting the scrutiny /inspection details sent by Block/ District level officer along with progress of field work and data entry. The filled up schedules were handed over by the State Nodal Office to the NIC. For the processing of data, the web based online software developed by Central NIC, was used for data entry, validation, tabulation etc.

Frequent inspections and sample checks were conducted by officers from the State Statistical cells for ensuring data quality. Field visits were also done by the Central team from the Department of Water Resources, RD & GR.

4.6 COMPUTERISATION OF CENSUS DATA

NIC had developed the online software for computerization of data of 6th MI Census and provided technical support along with training in the Regional Data Processing Workshops organized by the Ministry in association with the host States.

This was followed by State level trainings organized by the State Census Commissioner. The user ID and password for accessing the online portal were provided to the State nodal officers by the time. Online data entry, validation etc. were done by the State.

The Census data entered in the online portal by the State was again scrutinized at the Central level and observations/queries thereon were referred to State for possible corrections/clarification. On-line tables were generated on the portal on the basis of data fed by State. After receipt of comments from States and due rectification, the online tables generated through portal were analyzed and aggregated for compiling National Level Report and State Level Report. The State Census Commissioner can use the data as available on the online portal for generating micro level tables as per their requirement.

4.7 TRAINING AND CAPACITY BUILDING FOR DATA COLLECTION

The Training for the 6th MI Census commenced formally with the organization of the All India Training Workshop for the Trainers at New Delhi in which officers from each State/UT participated. In addition, Six Regional Training Workshops were conducted for Northern, Southern, Eastern, Western, Central and the North Eastern regions covering all

States/UTs. Apart from training on concepts, definitions, schedules and instruction manual, field training was also imparted to officials from State Governments/UT Administration in these Workshops. These Workshops were attended by 3-4 participants from each State/UT who imparted the next level State trainings organized by the Minor Irrigation Census Commissioners at the State and District Headquarters in which the district level officers and block level officers/enumerators respectively were trained. A representative from the Centre generally participates as an Observer in some of such State level trainings. In addition, the District level officers from all the districts, State level NIC officers, State Agricultural Statistical Agency/Directorate of Economics and Statistics Head attended the State trainings. The details of the methodology adopted for the census, its procedure, concepts and definitions etc. were discussed thoroughly and necessary clarifications were also given in such trainings.

Four Regional Data Processing Workshops were also organized in which officers from all State/UTs were imparted detailed training on various modules of the online web-based software developed by NIC for 6th census. Suggestions/feedback received from the States/UTs in these workshops was also incorporated in the software. The State /UT level officers trained in these Workshops imparted further training in their respective States/UTs.

4.8 FINANCIAL ASPECTS

As a token of appreciation of work entrusted to various officials in addition to their normal duties and not as compensation or remuneration for additional work, the officials who are involved in the inspection of field work and schedules at the District/Block levels were paid suitable honorarium which was drawn from the grants released to the States by the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti for the 6th MI Census. Funds for contingency were also provided for various trainings/meetings or any other unforeseen miscellaneous expenditure of contingent nature which can arise during the conduct of the Census.

4.9 MONITORING PROCESS

The State Governments was required to submit Monthly Progress Report regarding the various phases of Census work in the prescribed Performa to the Ministry by email/ by post or by Fax. Further, Progress Monitoring module available in the online web based software developed by NIC also enabled to view the real-time progress in data entry and validation phases of Census work. The key issues related to progress are also taken up with

senior officers of State through Video Conferences and visits to State, apart from review meetings with officers of State in the Ministry. This helped in monitoring the progress of Census work and ensuring remedial measures wherever called for.

CHAPTER V

ANALYSIS AND KEY FINDINGS

The 6th Census of minor irrigation schemes with reference year 2017-18 was conducted across the state covering 14 districts. It involved large scale collection of data of minor irrigation structures and was completed by primary workers in the state under the overall supervision of RMIS Cell in Irrigation Department for compilation of minor irrigation statistics under 'Irrigation Census' scheme. 6th minor irrigation census report covers important information on all ground water and surface water schemes in the state.

5.1 KEY FINDINGS:-

Key findings of this Census, parameter wise analysis, scheme wise analysis and the comparison with 5th Census are summarized as under:-

- ❖ Ground water accounts for major share (67.5%) of all the minor irrigation schemes in the state. Among Ground water schemes, dug well and shallow tube well are declining whereas an increase has been observed in medium and deep tube well. Among surface water schemes, both surface lift schemes and surface flow schemes are increasing.
- ❖ Irrigation Potential Created (IPC) and Irrigation Potential Utilized (IPU) from Ground water schemes and Surface water schemes have declined in the 6th MI Census.
- ❖ 91.2% of minor irrigation schemes continue to remain under private ownership whereas 8.8% are under public ownership. Most MI structures are owned by individual farmers and hence it has maximum outreach for irrigation purposes. Within this, small and marginal farmers (having less than 2 ha of land) still own a

major share of minor irrigation schemes. This emphasizes the need for strengthening the network of MI structures for irrigation purposes which, in turn, will play a crucial role in improving the livelihood of these farmers.

- ❖ Own saving of the farmers continues to be the major source of financing for installation of minor irrigation schemes, pointing out the need for more financial support to the farmers by the financial institutions.
- ❖ Though the share of open channels for conveying water to the fields has reduced in 6th MI census, it still remains the major mode of water distribution. Correspondingly, the share of efficient water distribution systems like surface pipe, drip and sprinklers has increased, while underground pipe has declined. Surface pipe has recorded the highest increase, followed by sprinkler and drip.
- ❖ Total number of MI schemes in the state has shown a decrease of 11083 in 6th MI Census as compared to 5th MI Census. Scheme wise analysis reveals an increase in the number of medium tube wells, deep tube wells, surface flow schemes and surface lift schemes. Number of dug wells, and shallow tube wells in the state have recorded a decline in 6th MI Census.
- ❖ 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. Majority of schemes i.e. 70% have centrifugal pump, followed by 22% submersible pump 2.5% turbine whereas 4.3% are operated by manual/animal lifting and the rest other devices.
- ❖ 89% schemes are using electricity as source of energy followed by diesel pumps in 5% schemes.

Number of Ground Water Schemes & Surface Water Schemes from 1st to 6th MI Census

(In No. s)

Schemes	1 st Census (1986-87)	2 nd Census (1993-94)	3 rd Census (2000-01)	4 th Census (2006-07)	5 th Census (2013-14)	6 th Census (2017-18)
Dug Well	124021	89849	165956	162826	74258	52135
Shallow Tube Well	-	2006	4680	5913	4503	3146
Medium Tube Well	-	-	-	-	1939	5301
Deep Tube Well	-	79	227	1050	1768	1871
Surface Flow Schemes	9223	8091	10957	8580	7406	8269
Surface Lift Schemes	52461	8722	13493	15027	13783	21852
Total	185705	108747	195313	193396	103657	92574

Irrigation Potential Created/ Utilized under MI Schemes in use in 5th & 6th MI Census

(Area in Ha)

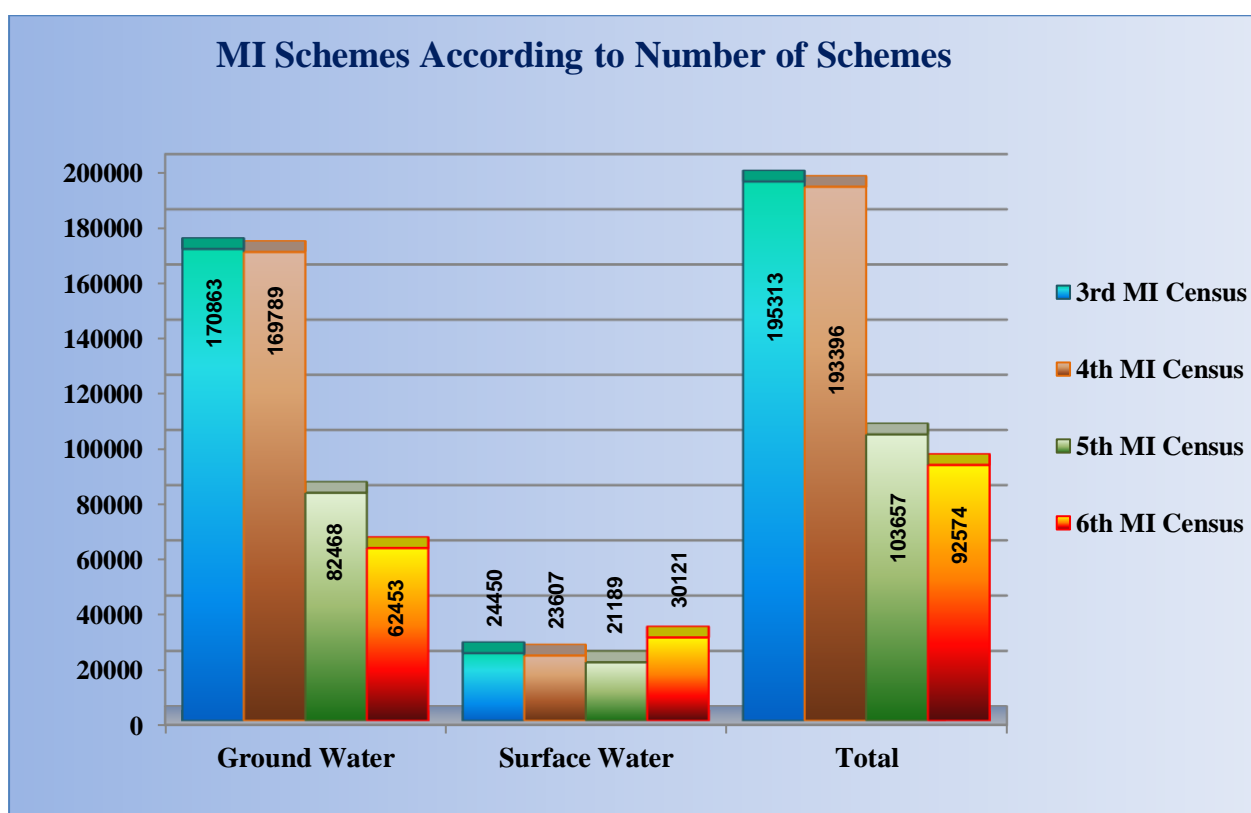
Schemes	5 th Census (2013-14)			6 th Census (2017-18)		
	Irrigation Potential Created	Irrigation Potential Utilized	Irrigation Potential Loss	Irrigation Potential Created	Irrigation Potential Utilized	Irrigation Potential Loss
Ground Water Schemes	46710	44433	2277	35345.91	34449.45	896.46
Surface Water Schemes	197995	181439	16556	146264.64	140549.90	5714.74
Total	244705	225872	18833	181610.55	174999.35	6611.2

5.2 Diagrammatic Analysis of 6th MI Census with 3rd, 4th & 5th MI Census

i) MI Schemes According to Number of Schemes

(In No's)

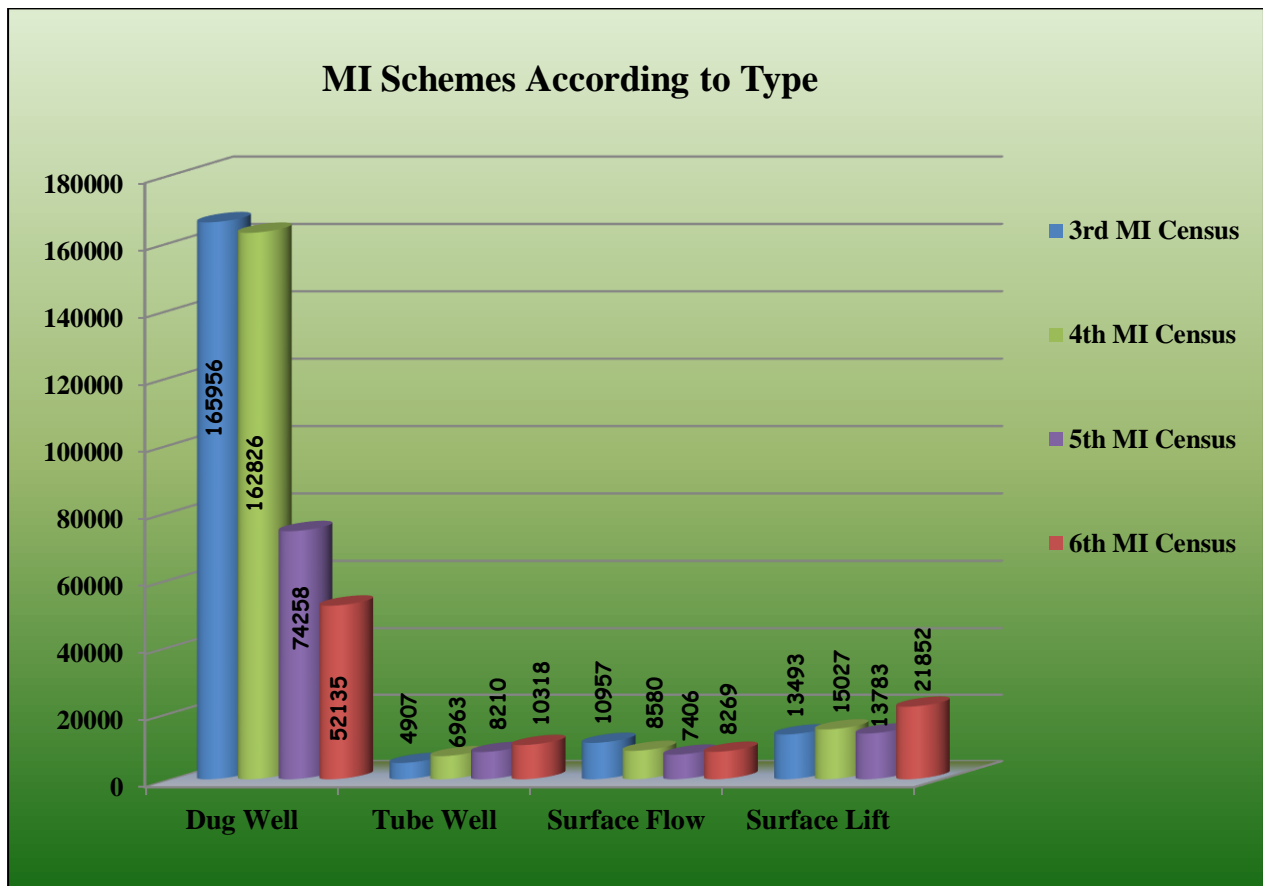
Schemes	3 rd MI Census	4 th MI Census	5 th MI Census	6 th MI Census
Groundwater	170863	169789	82468	62453
Surface Water	24450	23607	21189	30121
Total	195313	193396	103657	92574



ii) MI Schemes According to Type

(In No. s)

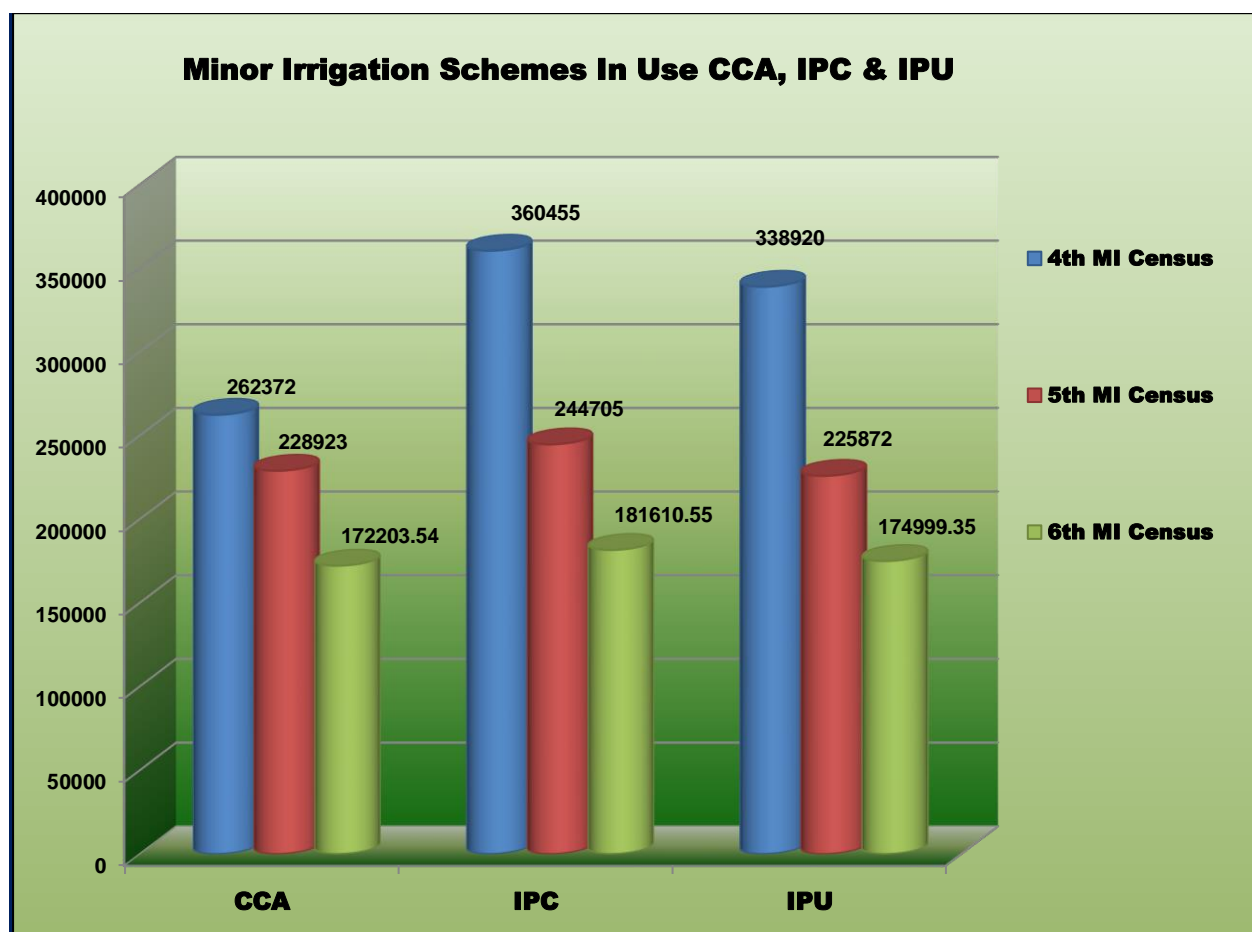
Schemes	3 rd MI Census	4 th MI Census	5 th MI Census	6 th MI Census
Dug Well	165956	162826	74258	52135
Tube Well	4907	6963	8210	10318
Surface Flow	10957	8580	7406	8269
Surface Lift	13493	15027	13783	21852



iii) Minor Irrigation Schemes in use CCA,IPC & IPU

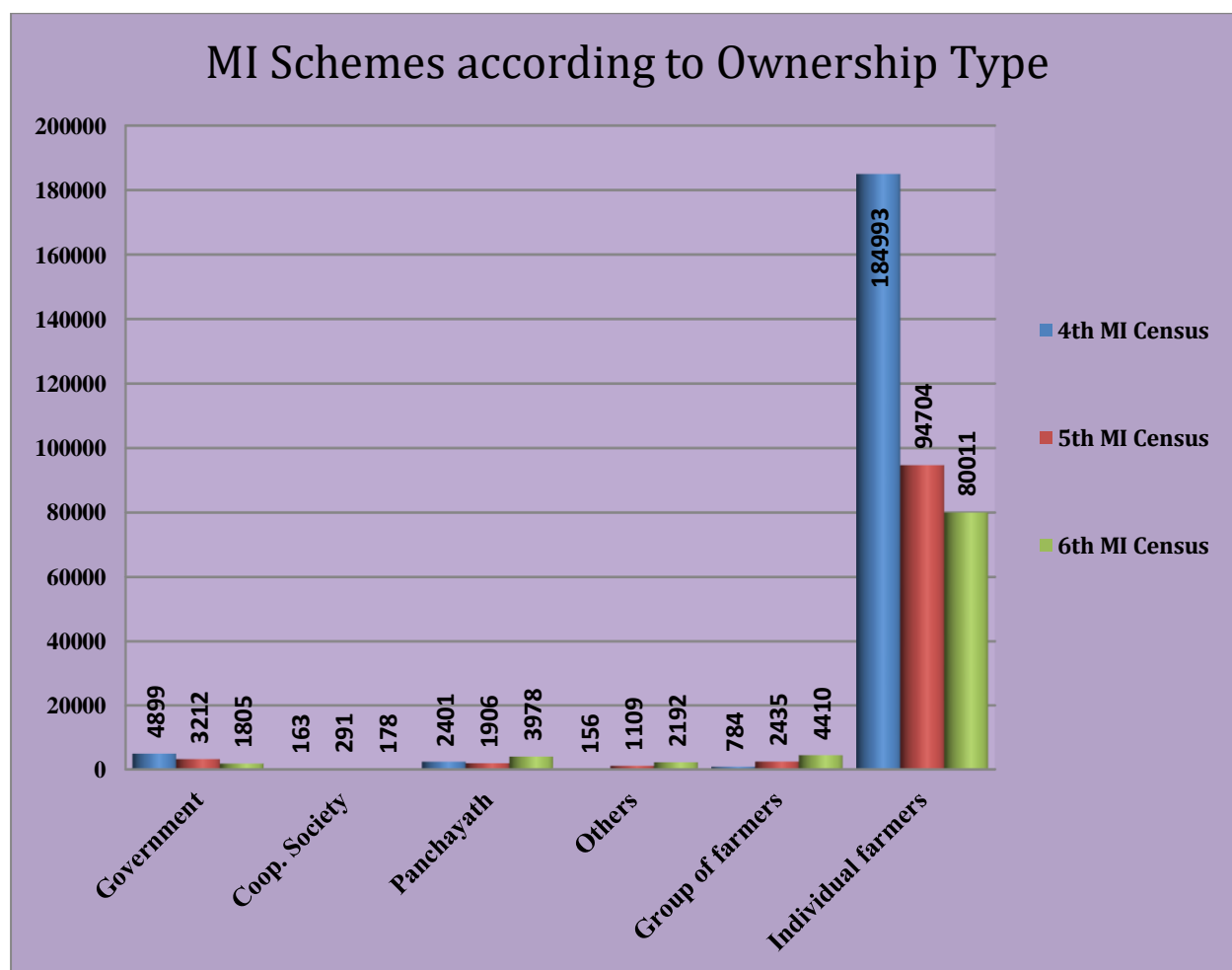
(Area in Ha)

MI Census	CCA	IPC	IPU
4 th	262372	360455	338920
5 th	228923	244705	225872
6 th	172203.54	181610.55	174999.35



iv) MI Schemes according to Ownership Type

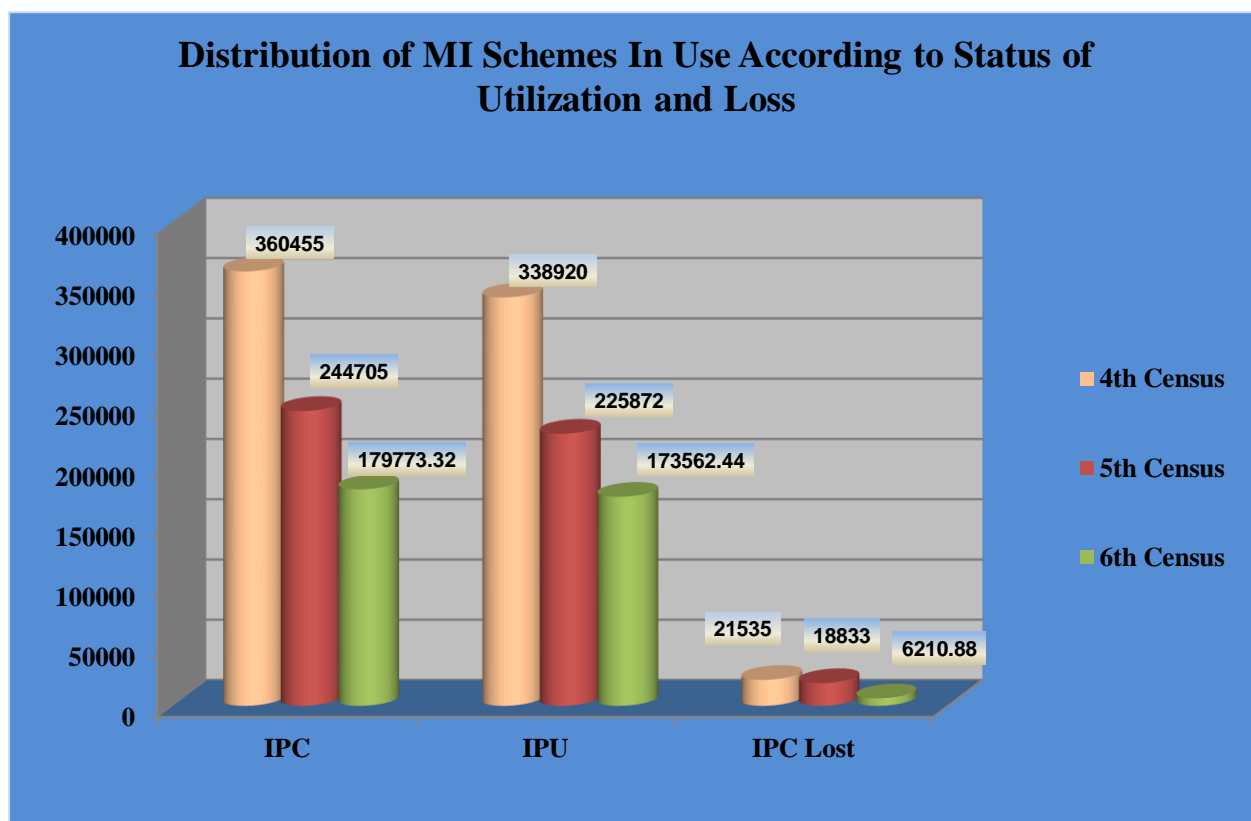
Ownership	4 th MI Census	5 th MI Census	6 th MI Census
Government	4899	3212	1805
Coop. Society	163	291	178
Panchayath	2401	1906	3978
Others	156	1109	2192
Group of farmers	784	2435	4410
Individual farmers	184993	94704	80011



v) **Distribution of MI Schemes in use according to status of utilization and loss**

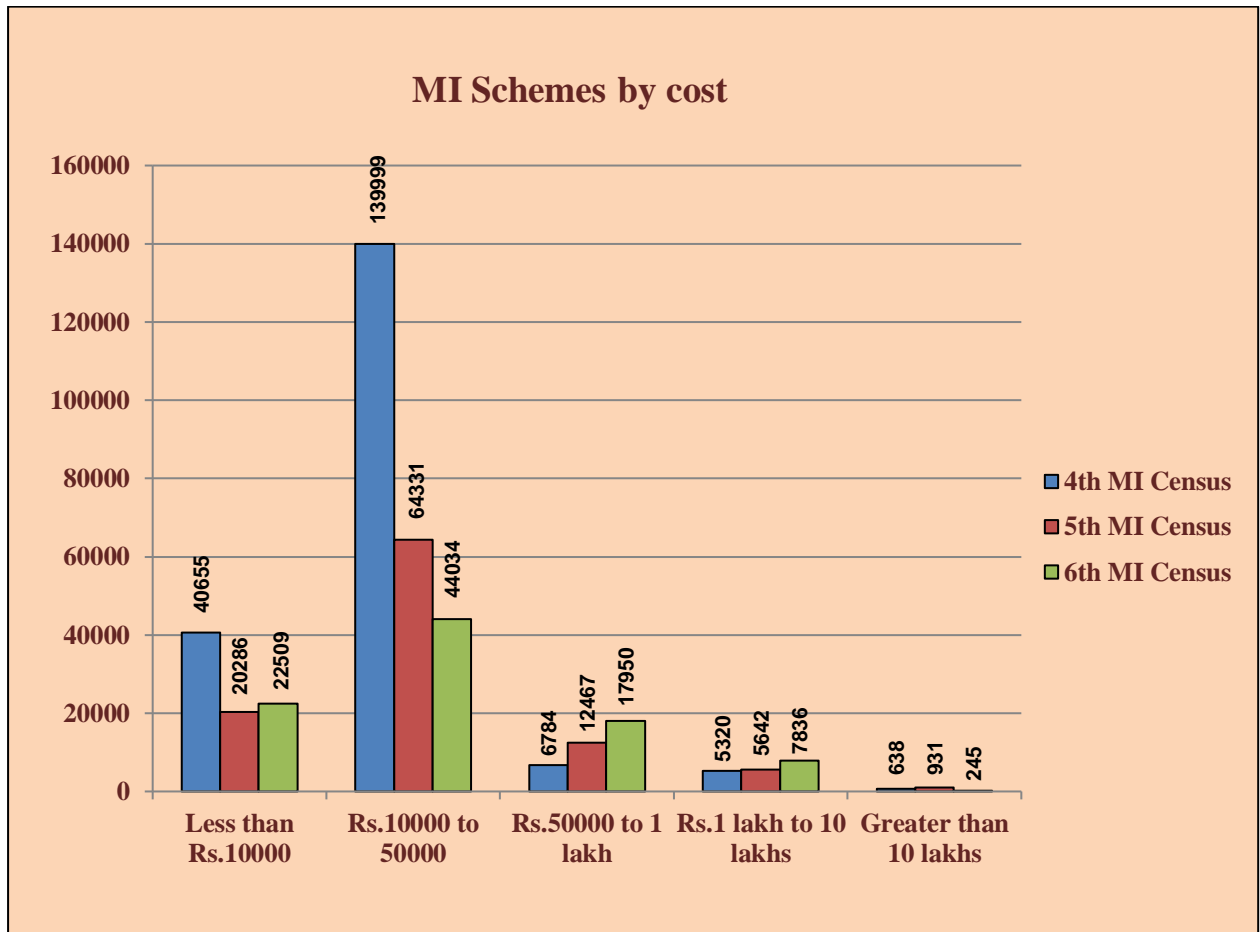
(Area in Ha)

MI Census	In Use Schemes				
	Number	IPC	IPU	IPC lost	% of IPU to IPC
4 th	191947	360455	338920	21535	94.02
5 th	103220	244705	225872	18833	92.30
6 th	91881	179773.32	173562.44	6210.88	96.55



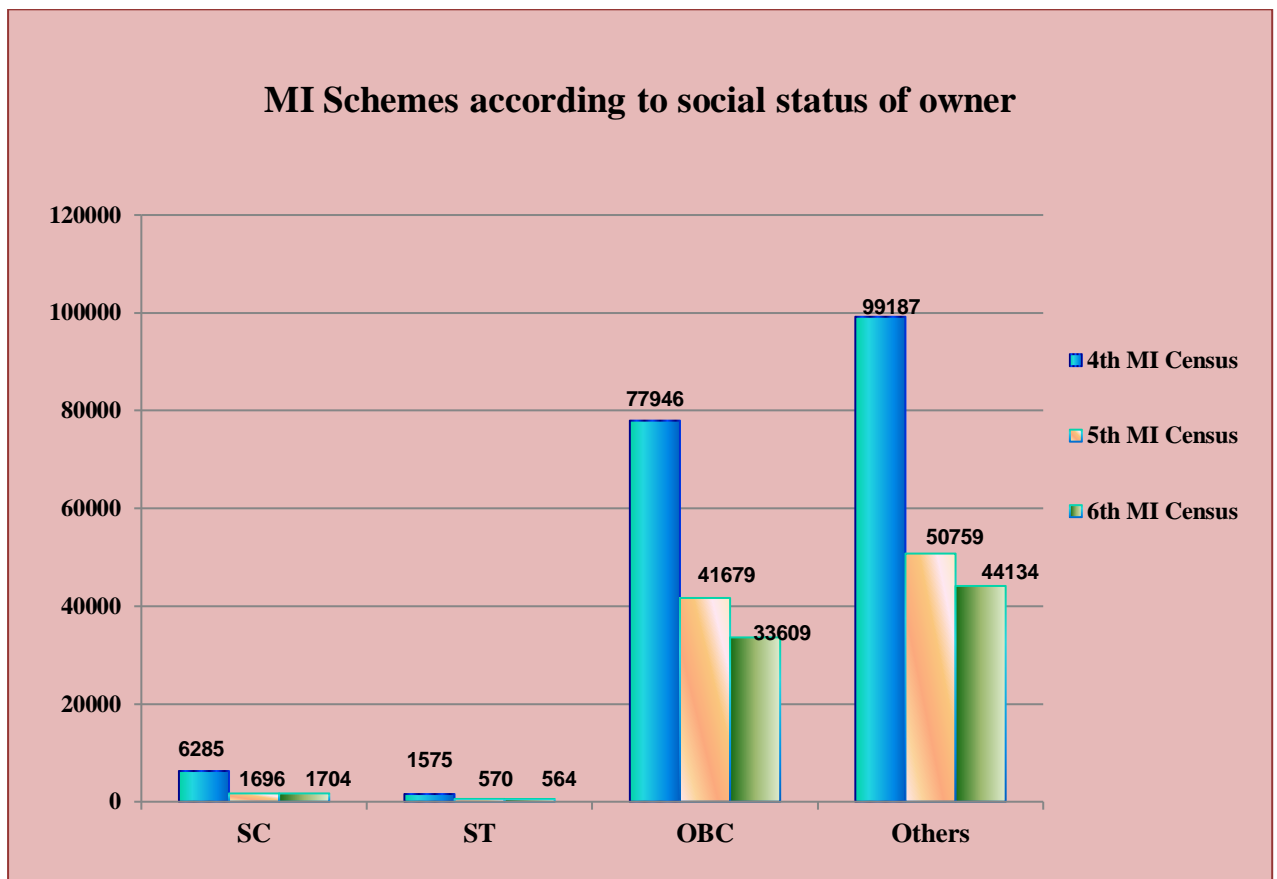
vi) MI Schemes by cost

MI Census	Less than Rs.10000	Rs.10000 to 50000	Rs.50000 to 1 lakh	Rs.1 lakh to 10 lakhs	Greater than 10 lakhs
4 th	40655	139999	6784	5320	638
5 th	20286	64331	12467	5642	931
6 th	22509	44034	17950	7836	245



vii) MI Schemes according to Social Status of Owner

MI Census	SC	ST	OBC	Others
4 th	6285	1575	77946	99187
5 th	1696	570	41679	50759
6 th	1704	564	33609	44134



5.3 ANALYSIS OF KEY PARAMETERS DURING 6th MI CENSUS

5.3.1 Number of Minor Irrigation schemes:

Name of Schemes		No. of Schemes	Percentage
Ground Water Schemes	Dug Well	52135	56.32
	Shallow Tube Well	3146	3.4
	Medium Tube Well	5301	5.73
	Deep Tube Well	1871	2.02
	Total	62453	67.46
Surface Water Schemes	Surface Flow	8269	8.93
	Surface Lift	21852	23.6
	Total	30121	32.54
Total Schemes		92574	100

There has been decrease in the number of minor irrigation structures in the state as observed during the 6th MI Census as compared to that in the 5th Census. In all 92574 MI structures were enumerated in 6th Census as against 103657 found during the 5th census which shows a decrease of about 10.7% in total number of MI structures in Kerala. Thrissur possesses the largest number of MI schemes in the state (25.5%) followed by Malappuram (15.5%), Ernakulam (8.78%) and Palakkad (8.57%). These four districts contribute 58% of the total MI schemes in the state.

District	Total no. of Schemes								Grand Total
	Ground Water					Surface Water			
	Dug Well	Shallow Tube well	Medium Tube well	Deep Tube well	Total	Surface Flow Scheme	Surface Lift Scheme	Total	
ALAPPUZHA	1149	662	145	1	1957	629	841	1470	3427
ERNAKULAM	4896	176	332	13	5417	502	2209	2711	8128
IDUKKI	763	9	368	276	1416	365	2284	2649	4065
KANNUR	3687	52	132	28	3899	559	2058	2617	6516
KASARGOD	1635	143	610	452	2840	314	2310	2624	5464
KOLLAM	1281	11	50	9	1351	400	598	998	2349
KOTTAYAM	1208	23	86	9	1326	692	1900	2592	3918
KOZHIKODE	3838	48	84	18	3988	196	1183	1379	5367
MALAPPURAM	9257	331	592	117	10297	1048	3016	4064	14361
PALAKKAD	3121	270	1322	636	5349	948	1634	2582	7931
PATHANAMTHITTA	1633	8	16	4	1661	302	344	646	2307
THIRUVANANTHAPURAM	1583	6	107	4	1700	1429	553	1982	3682
THRISSUR	18036	1407	1428	301	21172	427	1992	2419	23591
WAYANAD	48	0	29	3	80	458	930	1388	1468
Total	52135	3146	5301	1871	62453	8269	21852	30121	92574

Percentage distribution of MI Schemes by type

There has been significant decline of 24.3 % in Ground Water schemes from 82468 to 62453 during the period 2013-14 to 2017-18 whereas significant growth of 42% has been observed in Surface Water schemes from 21189 to 30121 in the same period.

In Ground Water schemes, Thrissur possesses largest number of schemes followed by Malappuram , Ernakulam and Palakkad.

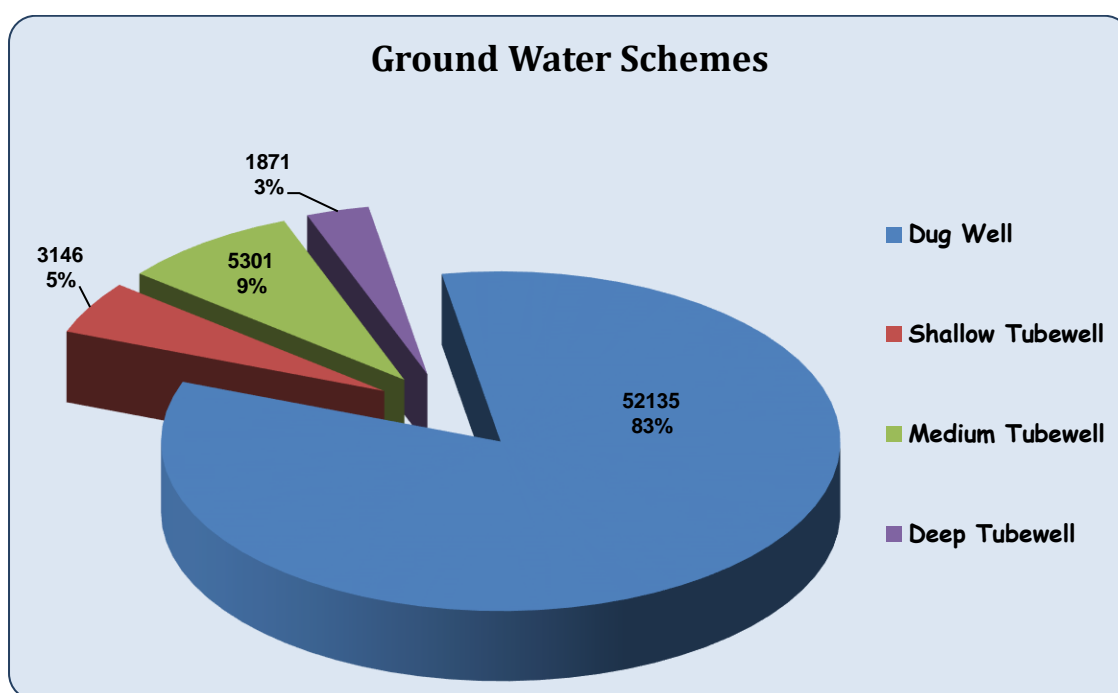
In Surface Water schemes, Malappuram possesses largest number of schemes followed by Ernakulam, Idukki, Kasargod and Kannur.

During 6th MI Census, Dug wells schemes have major share followed by shallow tube wells.

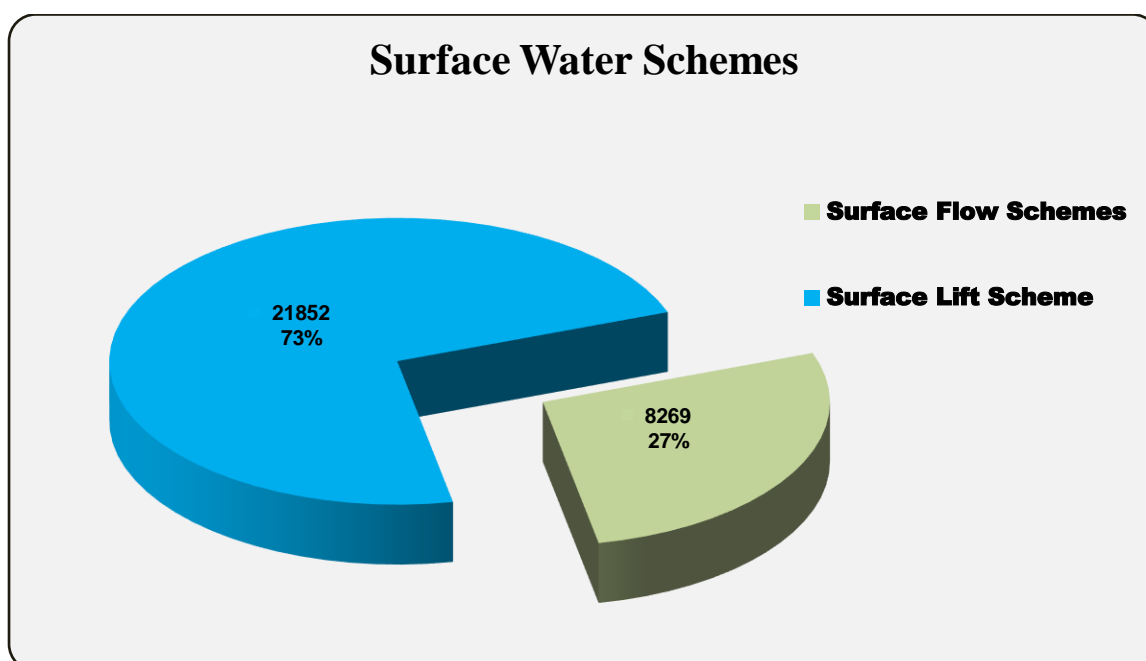
Leading Districts in Number of MI Schemes by type

Dug Well	Shallow Tube Well	Medium Tube Well	Deep Tube Well	Surface Flow	Surface Lift
Thrissur	Thrissur	Thrissur	Palakkad	Thiruvananthapuram	Malappuram
Malappuram	Alappuzha	Palakkad	Kasargod	Malappuram	Kasargod
Ernakulam	Malappuram	Kasargod	Thrissur	Kottayam	Idukki
Kozhikkode	Palakkad	Malappuram	Idukki	Alappuzha	Ernakulam
Kannur	Ernakulam	Idukki	Malappuram	Kannur	Kannur

It is observed that for each type of MI scheme, different districts are leaders (in terms of largest number of MI schemes of a particular type) indicating the varying topography of different districts. Thrissur is the leading district in dug wells, shallow tube well and medium tube well whereas Palakkad, Thiruvananthapuram and Malappuram are the leading districts in deep tube wells, surface flow schemes and surface lift schemes respectively.



Share of ground water in minor irrigation sector has decreased. Almost 67.46% schemes in 6th MI Census are Ground Water schemes and predominance of the medium and deep tube wells has been observed during 6th MI census. However, there has been decline of about 29.8% in the number of dug wells from 74258 to 52135 from 5th MI census to 6th MI census respectively. There is a marginal increase of 5.8% in number of deep tube wells from 1768 to 1871.



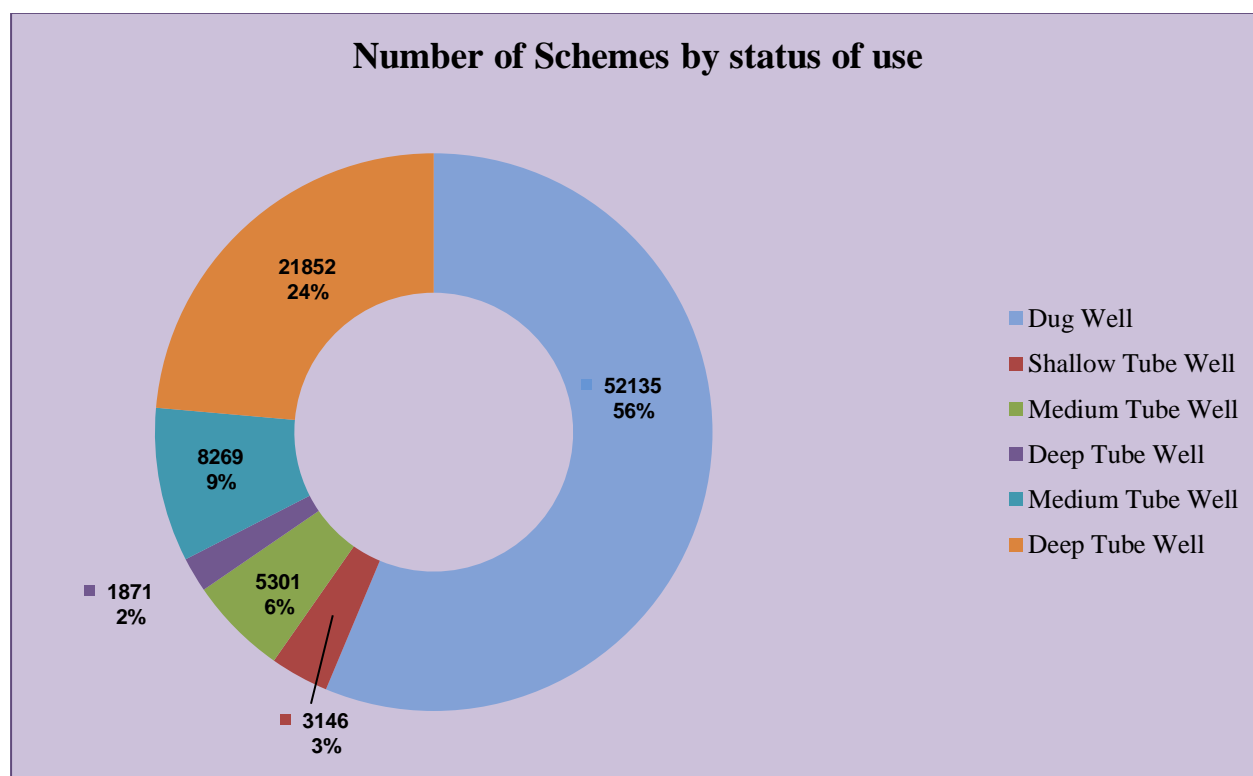
Share of Surface water in minor irrigation sector has increased. 32.54% of the MI Schemes are Surface water schemes. Surface flow schemes have also increased by 11.7% from 7406 to 8269 and surface lift schemes have increased by 58.5% from 13783 to 21852. While the share of Ground Water schemes in minor irrigation sector has decreased, the share of dug wells has also decreased from 90% to 83.5%.

Number of Schemes by status of use:

During 6th MI census, share of total 'In use' schemes has marginally declined whereas the share of both 'Temporarily not in use' and 'Permanently not in use' schemes has slightly increased as compared to 5th MI census. From the table and chart given below, the status of use of various schemes are dug well -99.6%, shallow tube well - 99.1%, medium tube well - 99.5%, deep tube well - 99.1%, surface flow schemes - 97.6%, surface lift schemes

– 98.9%.Surface Flow Schemes have highest percentage of ‘temporary not in use schemes’ 1.79% and ‘permanently not in use’ 0.64%.

Type of Scheme	No. of Schemes				Percentage		
	In use	Temporary not in use	Permanently not in use	Total	In use	Temporary not in use	Permanently not in use
Dug Well	51952	146	37	52135	99.65	0.28	0.07
Shallow Tube Well	3118	11	17	3146	99.11	0.35	0.54
Medium Tube Well	5275	12	14	5301	99.51	0.23	0.26
Deep Tube Well	1855	11	5	1871	99.14	0.59	0.27
Total Ground Water	62200	180	73	62453	99.59	0.3	0.11
Surface Flow Schemes	8068	148	53	8269	97.57	1.79	0.64
Surface Lift Schemes	21613	175	64	21852	98.91	0.80	0.29
Total Surface Water	29681	323	117	30121	98.54	1.07	0.39
Grand Total	91881	503	190	92574	99.25	0.54	0.21



As per the definition used in the census, the schemes which were not in use during last two year before the reference year due to temporary reason but was also not being abandoned for use were categorized as 'temporarily not in use'. The remaining schemes i.e. the schemes excluding 'in use' and 'temporary not in use' were classified as 'permanently not in use'. Number of 'not in use' schemes reported in 5th and 6th MI censuses are given below.

	Temp. not in use	Prem .not in use	Total not in use
5th MIC(2013-14)	321	116	437
6th MIC(2017-18)	503	190	693

5.3.2 Irrigation Potential Created (IPC) and Utilized (IPU) by MI schemes:

Overall IPC figure shows significant decrease of 63094 Ha as compared to 5th MI census. The IPC has decreased from 46710 Ha to 35346 Ha in case of GW schemes and 197995 Ha to 146265 Ha in the case of SW schemes. The main reasons for the same as reported are i) shifting of SW schemes used for irrigation purposes to non- agricultural purpose like ground water recharge ii) due to fall in water level and drying up/ extinction of small surface water resources iii) reduction of agricultural land due to urbanization and industrialization etc.

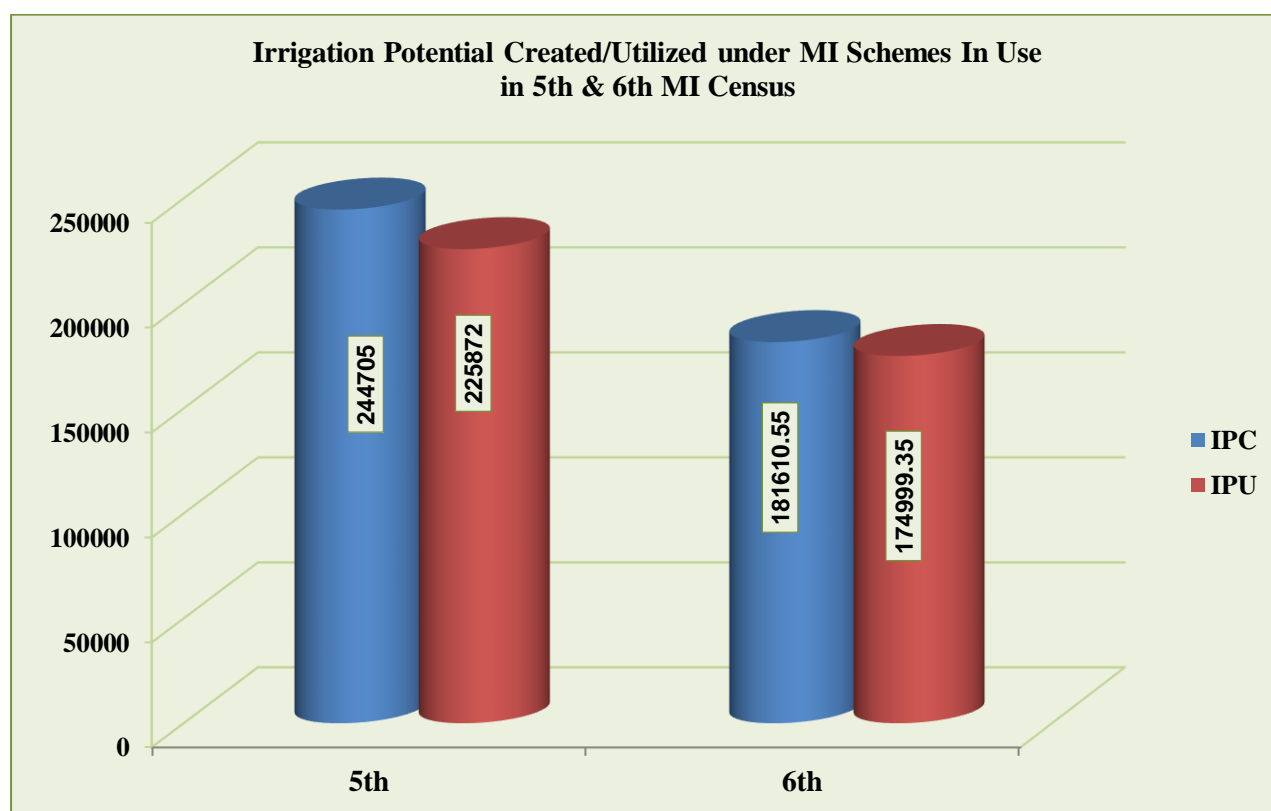
The IPU has decreased from 44433 Ha to 34449 Ha in case of GW schemes and the IPU in SW schemes have shown a decrease (from 181439 Ha to 140550 Ha) as in 5th MI census. Overall IPU figure shows decrease of 4th MI Census as compared to 5th MI census. During 5th MI census, 45.42% schemes used open channels for conveying water to the fields; this has reduced to 27.27 % in 6th MI census which can reduce wastage of water. The share of efficient water distribution systems like surface pipe, drip and sprinklers have also increased while underground pipe decreased.

As per 6th MI census, 35346 Ha of irrigation potential is created through Ground Water schemes and 146265 Ha through Surface Water schemes while irrigation potential utilized is 34449 hectares and 140550 Ha for GW and SW schemes respectively. This shows that 97.5% of the potential created in GW has been utilized while percentage utilization in respect of SW is 96.1%.

Irrigation Potential Created/Utilized under MI Schemes In Use in 5th & 6th MI Census

(Area in Ha)

Schemes	5 th Census (2013-14)			6 th Census (2017-18)		
	Irrigation Potential Created	Irrigation Potential Utilized	Irrigation Potential Loss	Irrigation Potential Created	Irrigation Potential Utilized	Irrigation Potential Loss
Ground Water Schemes	46710	44433	2277	35345.91	34449.45	896.46
Surface Water Schemes	197995	181439	16556	146264.64	140549.90	5714.74
Total	244705	225872	18833	181610.55	174999.35	6611.2

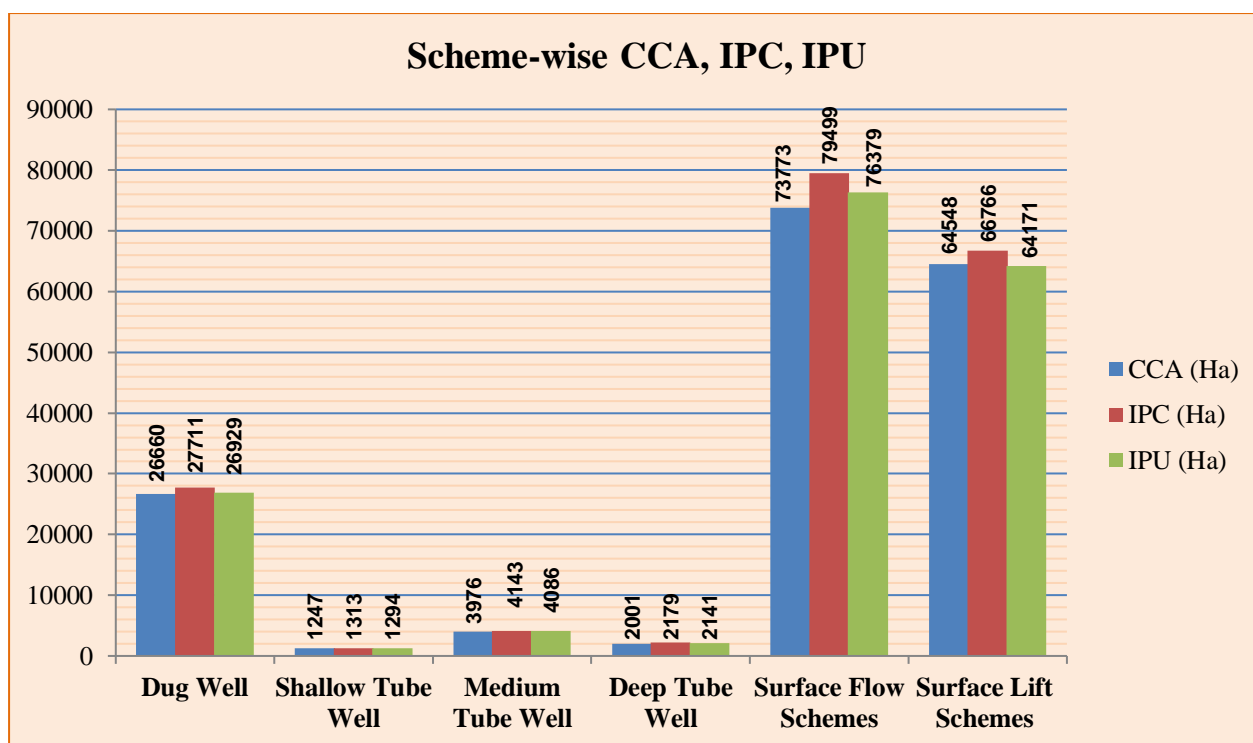


Scheme-wise CCA, IPC, IPU:

Scheme-wise CCA, IPC, IPU and ratio of IPU to IPC during 6th MI census is given in the table given below. If we analyze further at the scheme level, Surface flow scheme have highest IPC & IPU followed surface lift schemes and the Dug wells.

If we see the ratio of IPU to IPC in 6th MI census in different types of schemes, almost all the schemes show more than 95% utilization of created potential.

Type of Scheme	CCA (Ha)	IPC (Ha)	IPU (Ha)	Ratio of IPU/IPC
Dug Well	26660	27711	26929	0.97
Shallow Tube Well	1247	1313	1294	0.98
Medium Tube Well	3976	4143	4086	0.98
Deep Tube Well	2001	2179	2141	0.98
Surface Flow Schemes	73773	79499	76379	0.96
Surface Lift Schemes	64548	66766	64171	0.96



5.3.3 Under-utilisation of In-use schemes:

For the MI schemes which are ‘in use’, under-utilisation has been observed as the gap between irrigation potential created and irrigation potential utilized which is recorded in the census. Out of total 91881 ‘in use’ MI schemes in 6th MI census, about 1672 (1.82%) schemes were having constraints in utilisation due to reasons like mechanical breakdown, less discharge of water, storage not fully filled up, non-availability of adequate power supply etc. Remaining 98.18% ‘in use’ MI schemes have been found functioning without any constraints.

Under-utilisation of In-use Ground Water schemes:

If we see the under-utilisation, by type of constraint in ‘in-use’, GW schemes, other reason- 55%, ‘less discharge of water’ -25% and 6.5% ‘non availability of adequate power seem to be the main reasons for under utilization of schemes.

Under-utilisation of In-use Surface Water schemes:

If we see the under-utilisation by type of constraint in ‘in-use’ SW schemes, 33.61% of other reasons, 21.93% of less discharge of water 14.54% inadequate power seems to be main reasons.

5.3.4 Ownership of MI schemes:

Data of ownership of MI schemes reflects that 91.2% of the MI structures are under private ownership and only 8.8% is in under public domain. This pattern is more dominant in Ground water schemes where almost all type of schemes (97.2%) has private ownership. In Surface Water Schemes, 21.3% schemes are in public ownership and 78.7% are in private ownership. However in surface water schemes, surface flow schemes have remarkably high public ownership of 44.1% whereas 87.3% surface lift schemes are privately owned. This clearly reveals that most MI structures in Kerala are owned by individual farmers or group of farmers and hence it has maximum outreach for irrigation purposes which establishes the need of strengthening the network of MI structures in the country for irrigation purposes.

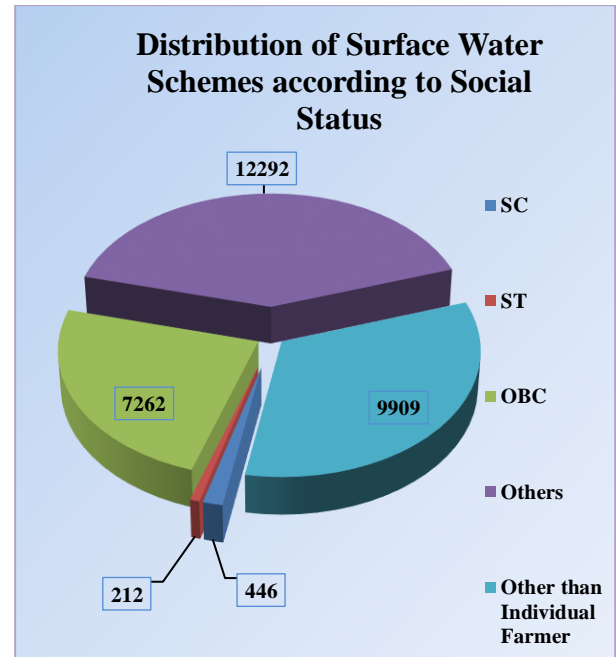
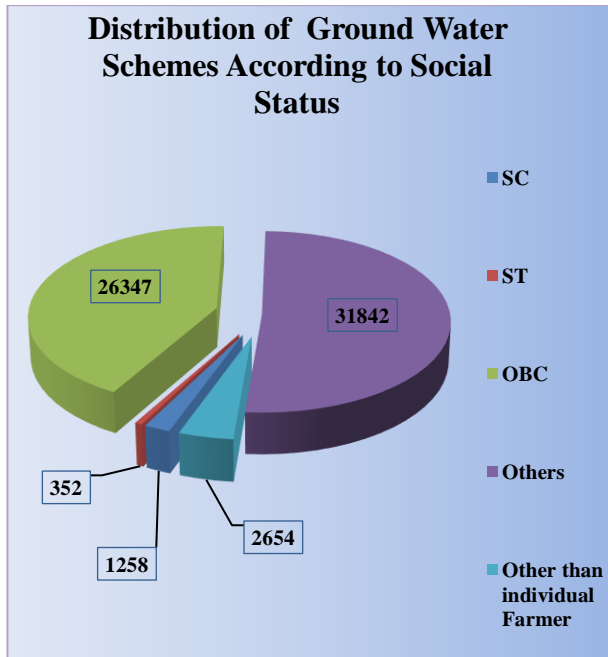
Scheme	No. of Schemes by Ownership				% of Scheme by Ownership			
	Public	Private	Total	Female	Public	Private	Total	Female (out of private)
Dug Well	1235	50900	52135	10310	2.37	97.63	100	20.26
Shallow Tube Well	108	3038	3146	686	3.43	96.57	100	21.81
Medium Tube Well	323	4978	5301	997	6.09	93.91	100	20.03
Deep Tube Well	60	1811	1871	291	3.2	96.80	100	16.07
Total Ground Water	1726	60727	62453	12284	2.76	97.24	100	20.23
Surface Flow Schemes	3648	4621	8269	513	44.12	55.88	100	11.10
Surface Lift Schemes	2779	19073	21852	2491	12.71	87.28	100	13.06
Total Surface Water	6427	23694	30121	3004	21.33	78.67	100	12.68

Out of all the individually owned schemes, 18.11% are owned by female. Among them, 45.6% female owners belong to OBC category.

5.3.5 Social Status of MI schemes:

The distribution of schemes according to social status is shown on the chart given below.

Scheme	SC	ST	OBC	Others	Other than individual farmer	Total
Dug Well	1086	269	21649	27223	1908	52135
Shallow Tube Well	49	15	1649	1258	175	3146
Medium Tube Well	90	40	2296	2446	429	5301
Deep Tube Well	33	28	753	915	142	1871
Total Ground Water	1258	352	26347	31842	2654	62453
Surface Flow Schemes	100	42	968	1779	5380	8269
Surface Lift Schemes	346	170	6294	10513	4529	21852
Total Surface Water	446	212	7262	12292	9909	30121
Grand Total	1704	564	33609	44134	12563	92574



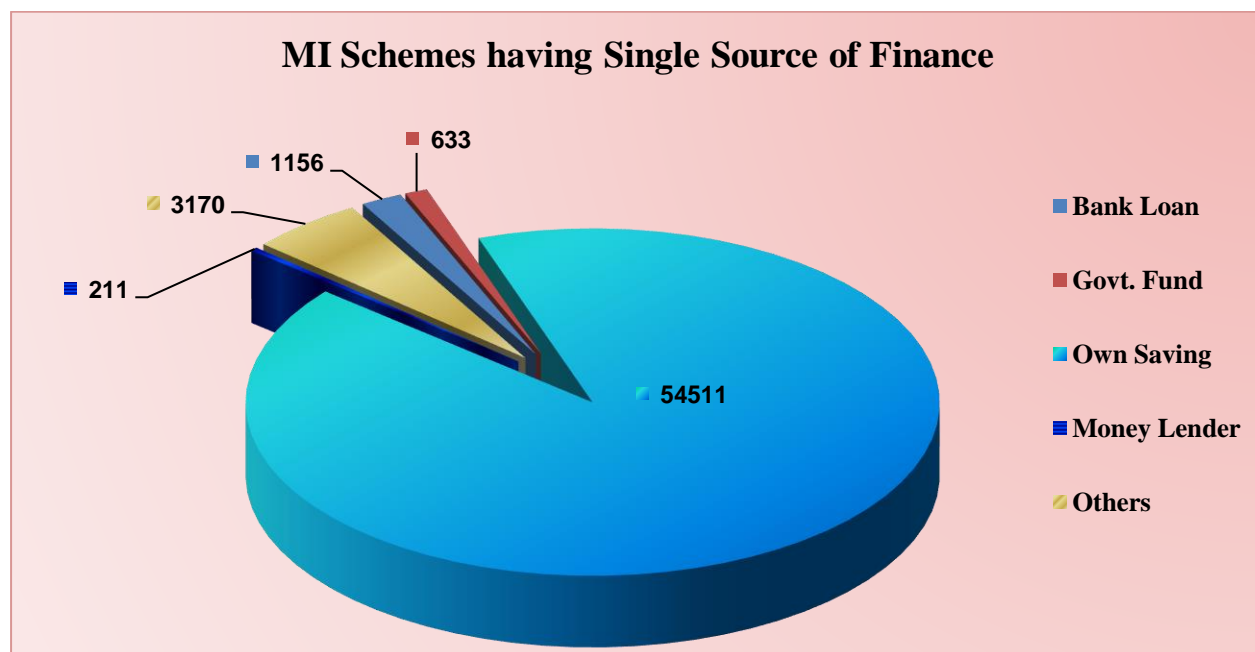
5.3.6 Financing of MI schemes:

Source of finance has been collected for the MI schemes owned by individual farmer. Around 74.6% schemes have single source of finance whereas 25.4% schemes have two sources of finance.

In single source of finance also, majority of schemes (91.3%) are financed by own savings of individual farmer. Other important sources of finance are bank loan (1.9%), government fund (1.1%) and money lender (0.4%). The fact that institutional sources contribute only 11.36% of the finances raised for installation of MI schemes indicates need for higher intervention by the organized financial sector in extending loans for installation of MI schemes.

MI Schemes having Single Source of Finance

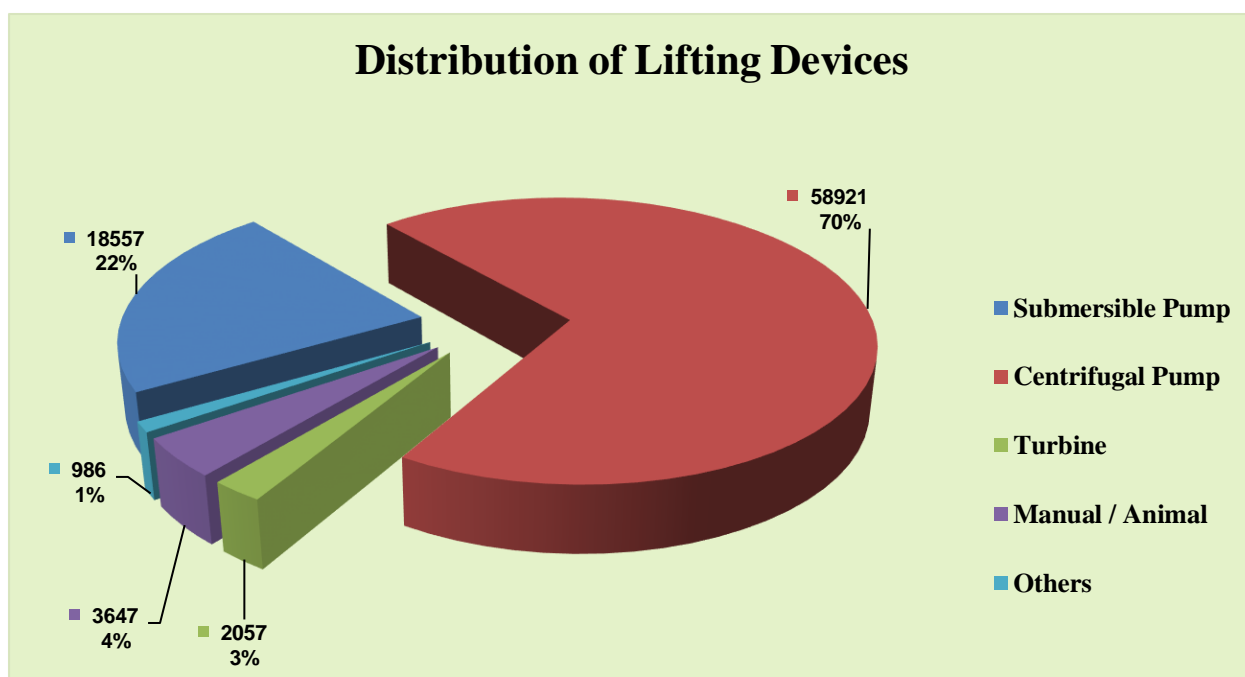
Scheme	Bank Loan	Govt. Fund	Own Savings	Money Lender	Others	Total
Dug Well	698	344	35234	110	1564	37950
Shallow Tube Well	4	8	1603	5	55	1675
Medium Tube Well	38	19	3228	19	173	3477
Deep Tube Well	26	7	1036	1	11	1081
Total Ground Water	766	378	41101	135	1803	4183
Surface Flow Schemes	75	54	1548	32	542	2251
Surface Lift Schemes	315	201	11862	44	825	13247
Total Surface Water	390	255	13410	76	1367	15498
Grand Total	1156	633	54511	211	3170	59681



5.3.7 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. Majority of schemes i.e., 70% have centrifugal pump followed by 22.1% submersible pump, 2.43% turbine whereas 4.3% are operated by manual/animal lifting and other devices.

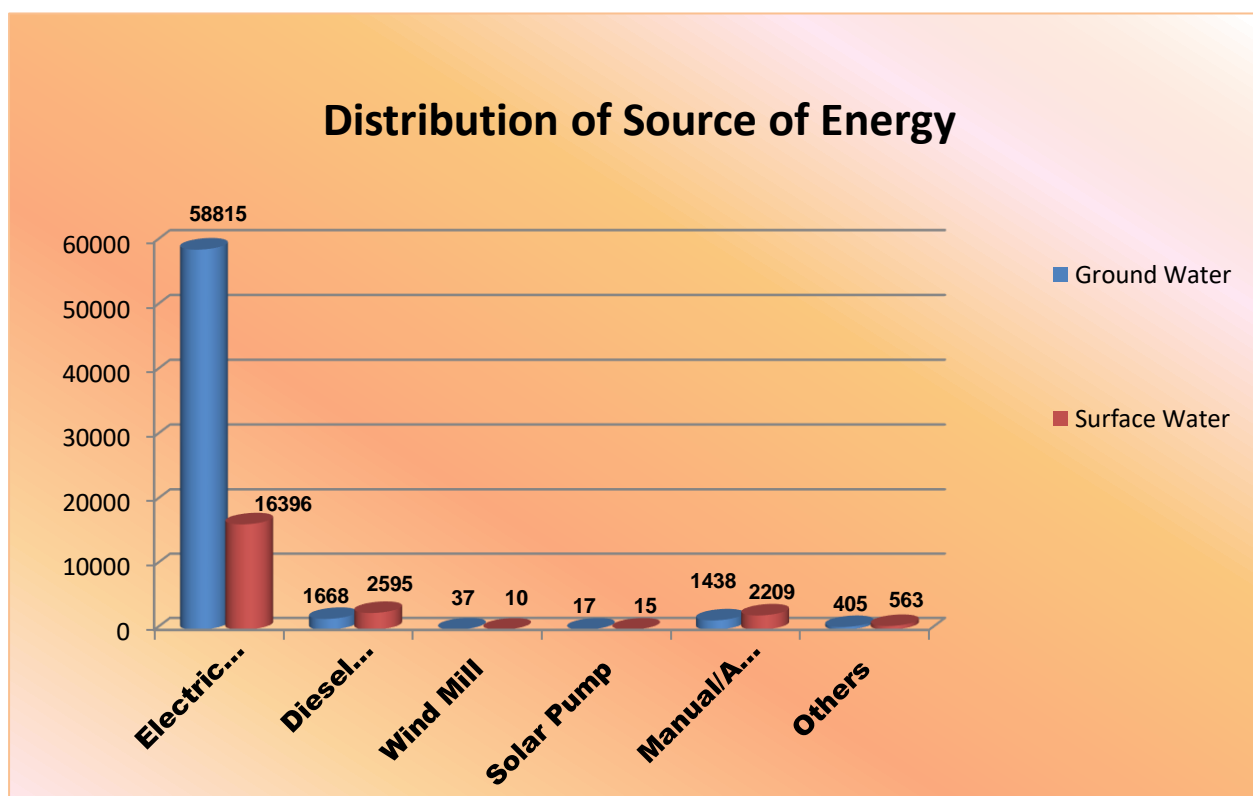
Scheme	Submersible Pump	Centrifugal Pump	Turbine	Manual / Animal	Others	Total
Dug Well	10190	39077	1250	1247	334	52098
Shallow Tube Well	990	2028	29	69	13	3129
Medium Tube Well	2835	2110	179	109	54	5287
Deep Tube Well	1535	275	37	13	6	1866
Total Ground Water	15550	43490	1495	1438	407	62380
Surface Lift Schemes	3007	15431	562	2209	579	21788
Grand Total	18557	58921	2057	3647	986	84168



5.3.8 Distribution of Source of Energy:

Majority of schemes (89.4%) utilize electricity as source of energy followed by diesel pump (5.1%), rest of the schemes (5.5%) use windmill, solar pumps, manual/animal and other sources of energy. This clearly reveals that 94.5% schemes are operated either by electricity or diesel.

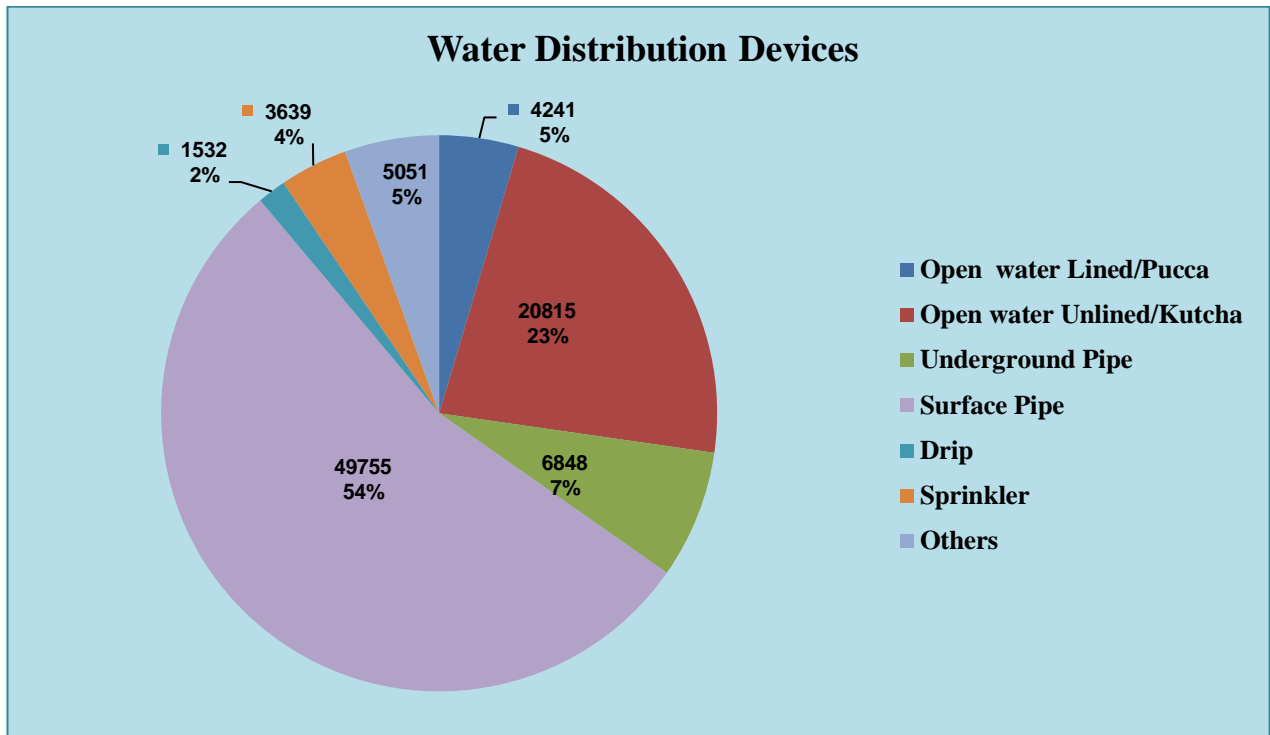
Scheme	Electric Pump	Diesel Pump	Wind Mill	Solar Pump	Manual / Animal	Others	Total
Dug Well	48892	1538	33	17	1247	371	52098
Shallow Tube Well	3014	39	1	0	69	6	3129
Medium Tube Well	5076	74	3	0	109	25	5287
Deep Tube Well	1833	17	0	0	13	3	1866
Total Ground Water	58815	1668	37	17	1438	405	62380
Surface Lift Schemes	16396	2595	10	15	2209	563	21788
Grand Total	75211	4263	47	32	3647	968	84168



5.3.9 Water Distribution Devices:

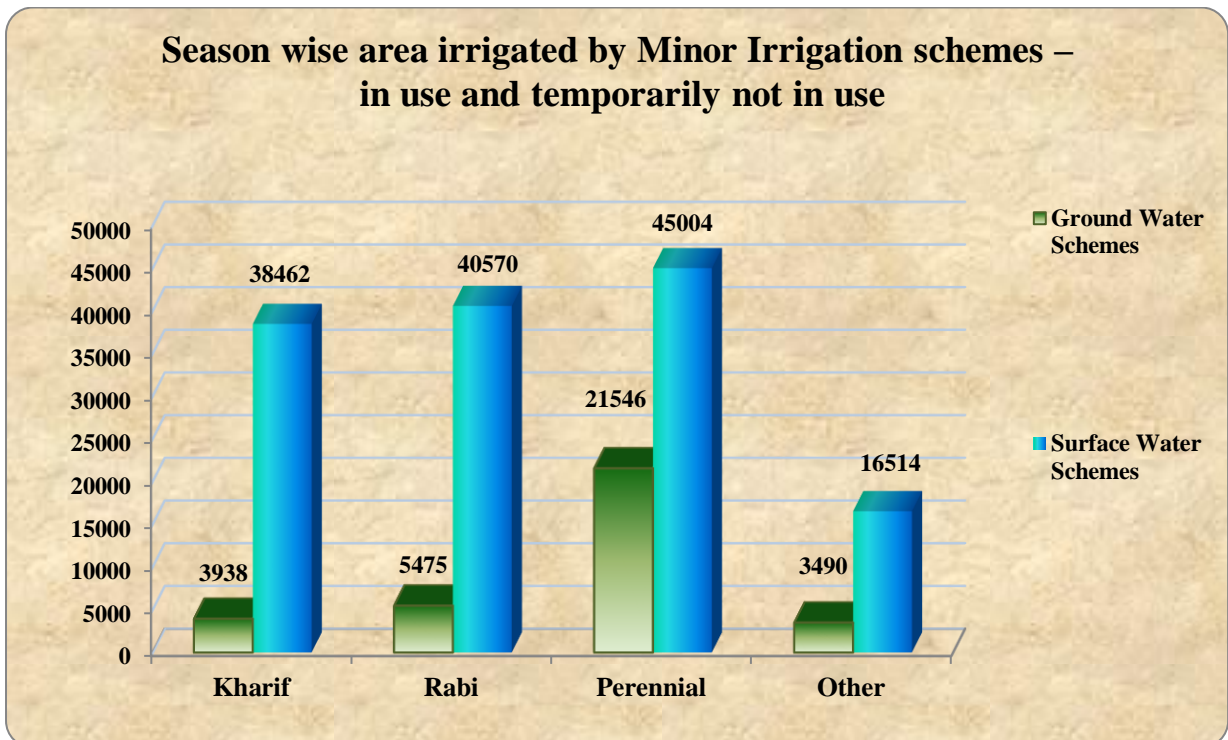
There has been improvement in water use efficiency and decline in wastage of water through use of improved water distribution devices over the years. As reflected in 6th MI census, the percentage share of MI schemes which distribute water through open unlined/ kutchra and open lined/ pucca water channels are 22.65% and 4.62% respectively. The percentage share of schemes which distribute water through surface pipe and underground pipe are about 54.15% and 7.45% respectively which lead to less water wastage of water through leakage and evaporation. 3.96% used sprinkler system and 1.67% schemes used drip irrigation for water distribution. During the 5th MI census about 45.6% schemes used open channel which now has reduced to about 27.3% in 6th census. The share of efficient water distribution systems like surface pipe, drip and sprinklers has increased in 6th census when compared to the 5th Census. Share of surface pipe has recorded the highest increase from 38.06% in 5th census to 54.15% in 6th census followed by drip (0.67% to 1.67%), and sprinkler (3.1% to 3.96%). Share of underground pipe has decreased from 10% to 7.45%.

Scheme	Open Water Channel Lined/Pucca	Open Water Unlined/ Kutchra	Underground Pipe	Surface Pipe	Drip	Sprinkler	Others
Dug Well	1906	10726	4625	30338	957	1278	2122
Shallow Tube Well	61	326	479	2027	69	99	57
Medium Tube Well	135	829	372	3162	203	466	108
Deep Tube Well	44	341	137	1026	42	248	17
Total Ground Water	2146	12222	5613	36553	1271	2091	2304
Surface Flow Schemes	1286	4512	258	942	35	45	990
Surface Lift Schemes	809	4081	977	12260	226	1503	1757
Total Surface Water	2095	8593	1235	13202	261	1548	2747
Grand Total	4241	20815	6848	49755	1532	3639	5051

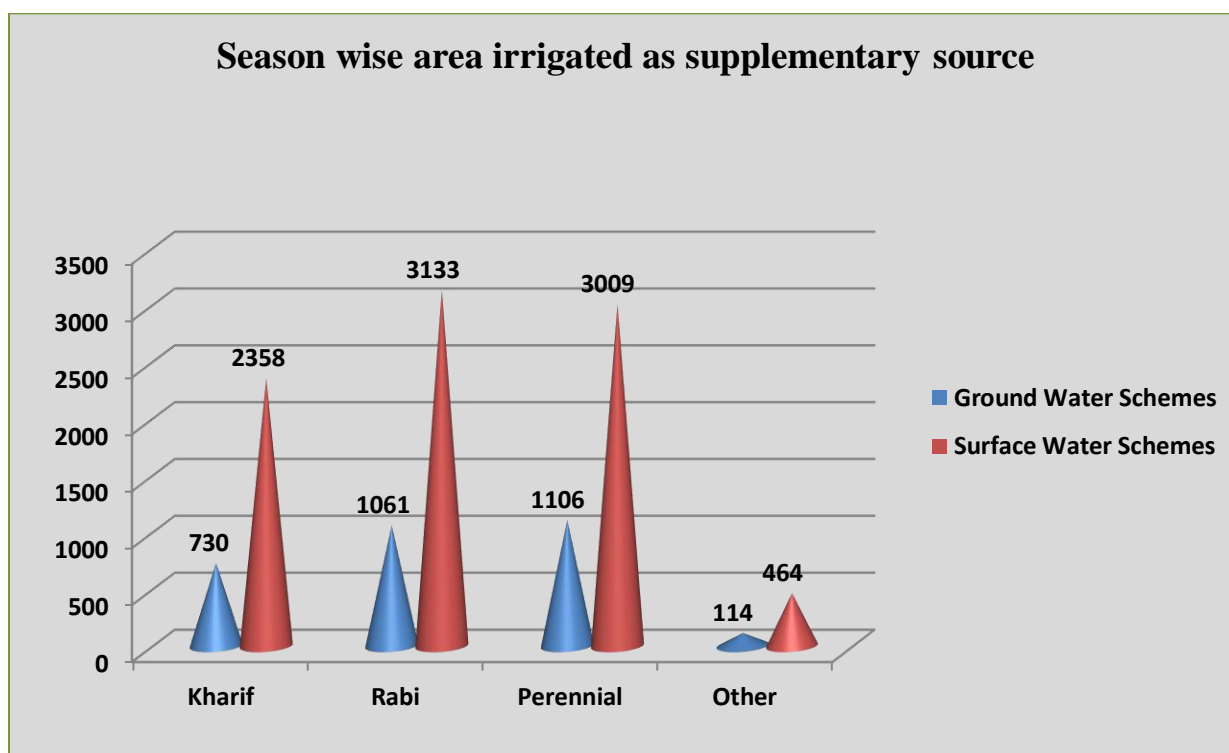


5.3.10 Irrigation area of both GW & SW schemes - Area in Ha

Season wise area irrigated by Minor Irrigation schemes – in use and temporarily not in use is graphically represented below.

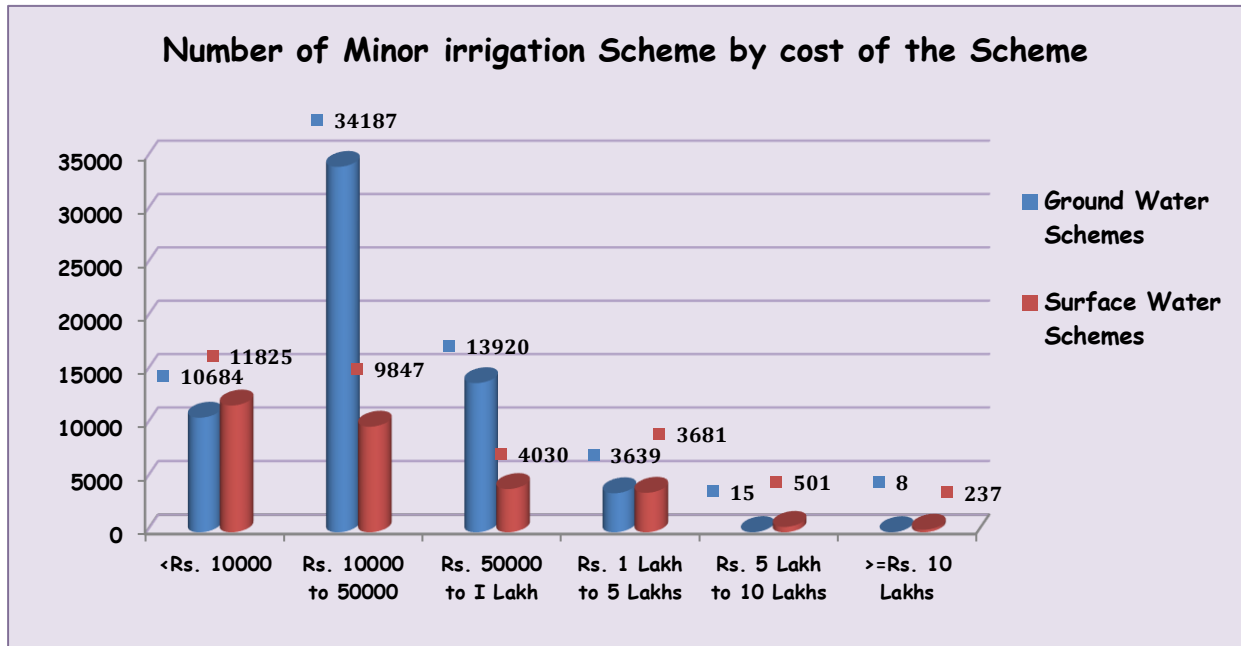


Season wise area irrigated as supplementary source by Minor Irrigation schemes is graphically represented below.



5.3.11 Number of Minor irrigation Scheme by cost of the Scheme.

Cost of Scheme	No. of GW Schemes having cost	No. of SW Schemes having cost	No. of MI Schemes having cost
<Rs.10000	10684	11825	22509
Rs.10000 to 50000	34187	9847	44034
Rs.50000 to 1 Lakh	13920	4030	17950
Rs.1 lakh to 5 lakhs	3639	3681	7320
Rs.5 lakh to 10 lakhs	15	501	516
>= Rs.10 lakhs	8	237	245



5.3.12 Reasons of MI schemes getting converted to temporarily not in use or permanently not in use:

Ground Water schemes converted to temporarily not in use/ permanently not in use:

25% GW schemes are temporarily not in use due to the reason 'less discharge of water' followed by 10.4% due to 'mechanical breakdown' and 6.5% due to 'non-availability of adequate fuel/power'. Reasons like 'lack of maintenance' and 'non-availability of funds' contribute only 1.3% and 1.8% respectively whereas 55% schemes are temporarily not in use due to other reasons.

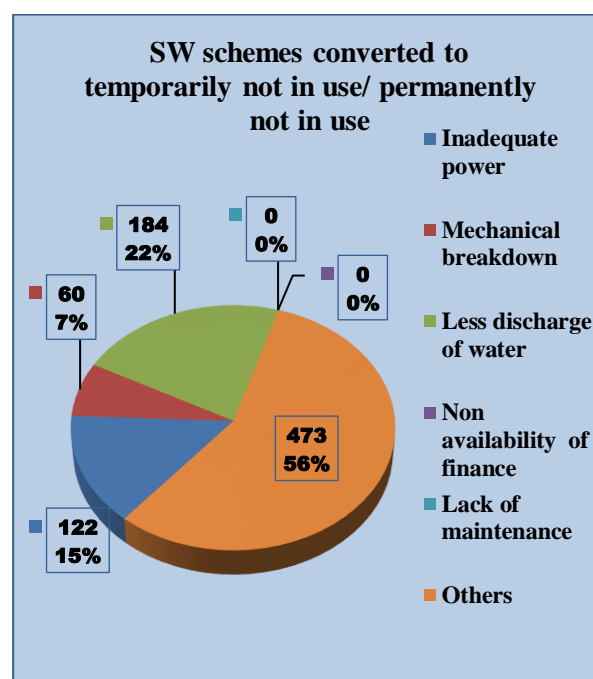
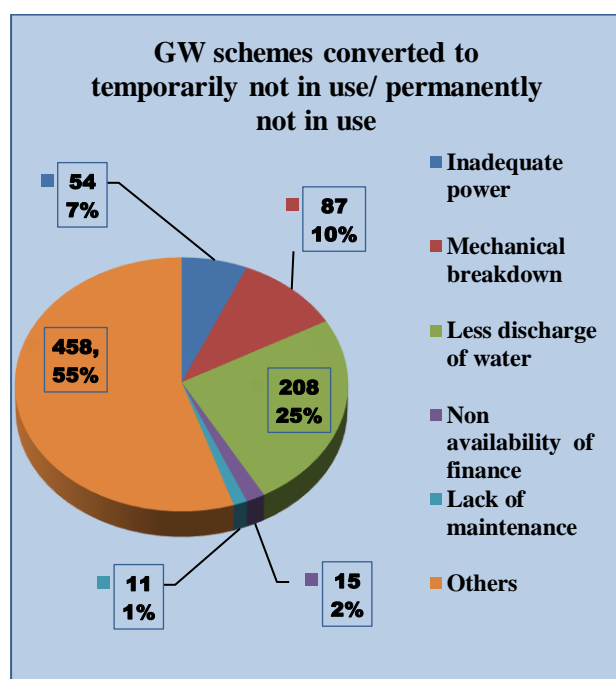
Similarly, out of 73 GW schemes which are permanently not in use, 11 are due to reason 'dried up' followed by 5 schemes due to 'destroyed beyond repair' and 4 schemes due to the 'salinity'. Reasons like 'sea water intrusion' and 'industrial effluents' are one each whereas 51 are permanently not in use due to other reasons.

SW schemes converted to temporarily not in use/ permanently not in use:

SW schemes are temporarily not in use mainly due to the reason 'less discharge of water' is 21.9%, 'channel break down' 1.7%, 'storage not filled up fully' 10.5%, 'non availability of adequate water' 14.5% , 'mechanical breakdown' 7.2%, saltation of canal/storage 10.6% and 'other reasons' 33.6%.

Similarly, out of 117 SW schemes are permanently not in use due to reasons 28 ‘destroyed beyond repair’ 15 ‘dried up’, 5 ‘salinity’, 3 ‘sea water intrusion, 7 ‘availability of major medium irrigation project’, 1 ‘ industrial effluences’ and 58 ‘other reasons’.

Scheme	Inadequate power	Mechanical breakdown	Less discharge of water	Non availability of finance	Lack of maintenance	Others	Total
Dug Well	36	55	175	13	10	431	720
Shallow Tube Well	1	29	3	2	0	11	46
Medium Tube Well	17	3	19	0	0	16	55
Deep Tube Well	0	0	11	0	1	0	12
Total Ground Water	54	87	208	15	11	458	833
Surface Flow Schemes	60	4	70	0	0	186	320
Surface Lift Schemes	62	56	114	0	0	287	519
Total Surface Water	122	60	184	0	0	473	839
Grand Total	176	147	392	15	11	931	1672



5.4 SCHEME WISE ANALYSIS

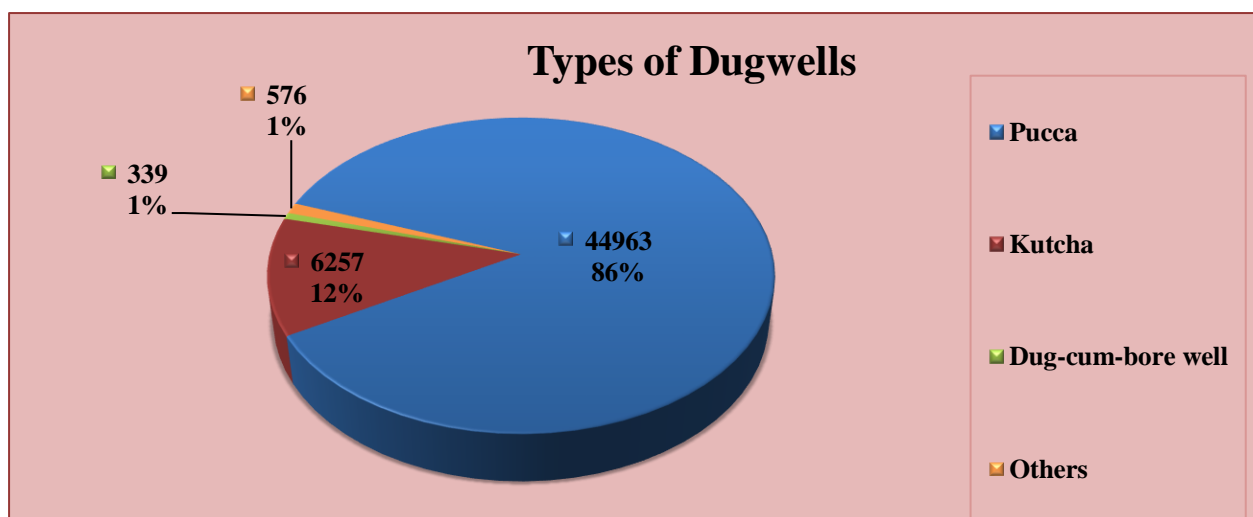
5.4.1 DUG WELLS:

It covers ordinary open wells of varying dimension dug or sunk from the ground surface into water bearing stratum to extract water for irrigation purposes. These are broadly dug-cum-bore wells now-a-days or masonry wells/ kutchha wells water from which are lifted with the help of animals/ human. Most of such schemes are of private nature belonging to individual cultivator. The parameter of the well ranges between 2 to 6 meters and the depth between 8 and 15 meters. CCA of a well operated with the help of human/ animals generally varies from 1 to 2 hectares and in case of Dugcum-Bore Well it may be as in case of a Tube Well of similar capacity and depth of bore.

As per the findings of 6th MI census, there are total of 52135 dugwells in the state irrigating 26923 hectare of land.

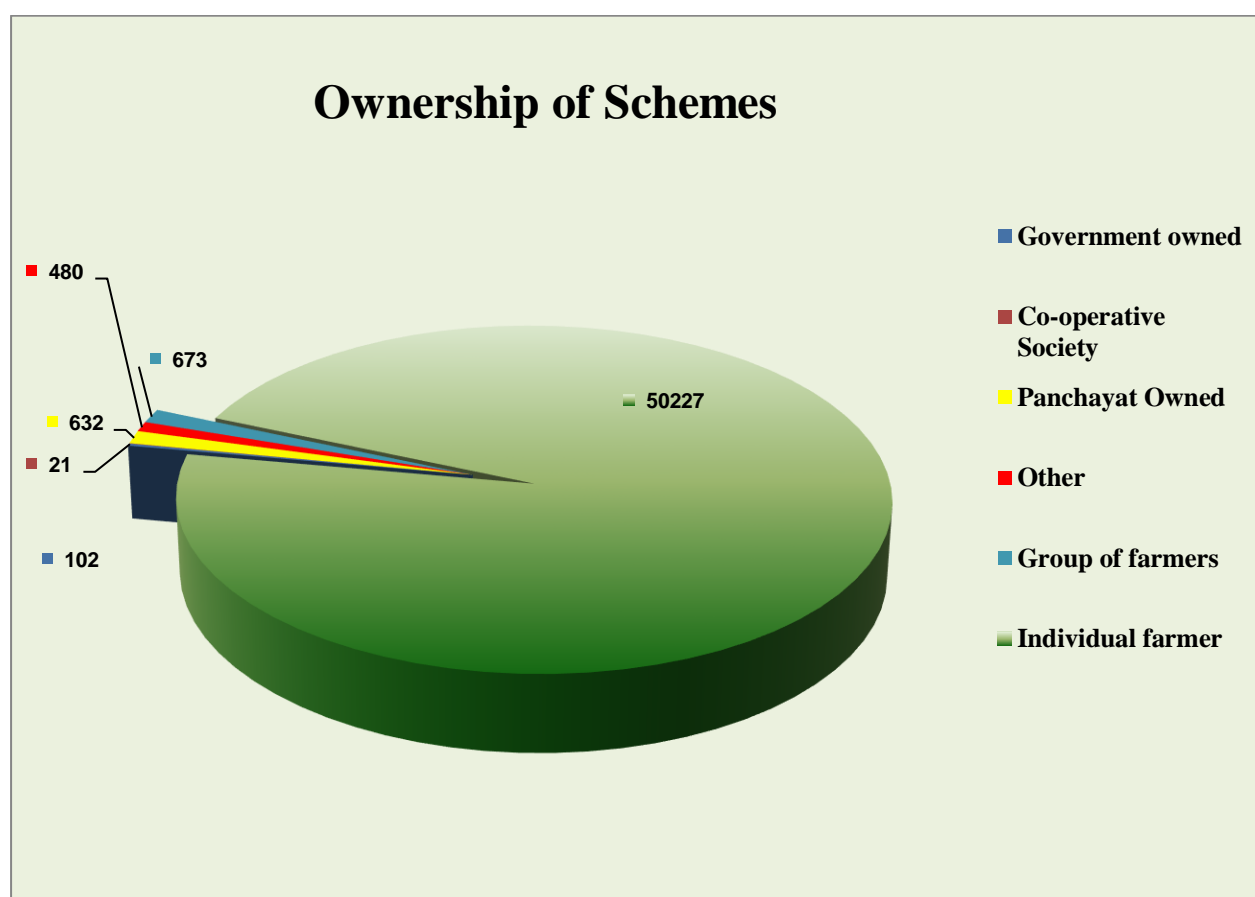
Out of all dugwells, pucca dug wells have a major share of 86.24% followed by kutchha dug wells (12%), others (1.1%) and dug-cum-bore wells (0.65%).

Sl. No.	Type of Dug Wells	Number	Percentage
1	Pucca	44963	86.24
2	Kutchha	6257	12
3	Dug-cum-bore well	339	0.65
4	Others	576	1.10
Total		52135	100



Dug wells are dominantly owned by private entities (97.63%). Out of these, about 98.68% dug wells are owned by individual farmers and only 1.32% is owned by group of farmers.

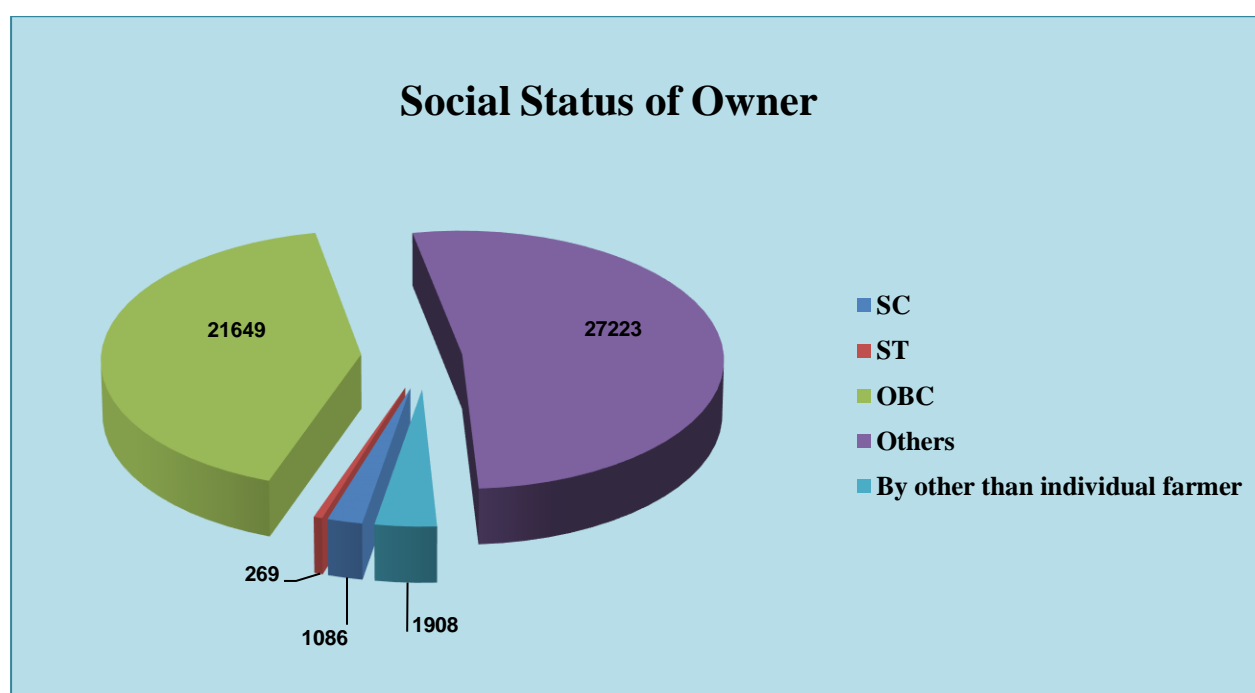
Sl. No.	Ownership of Scheme	Number	Percentage
1	Government owned	102	0.20
2	Co-operative Society	21	0.04
3	Panchayat Owned	632	1.21
4	Other	480	0.92
	Public Owned	1235	2.37
5	Group of farmers	673	1.29
6	Individual farmer	50227	96.34
	Private total	50900	97.63
	Grand Total	52135	100



Marginal and small farmers with small holding size from 0-2 hectares have the largest share in ownership of dug wells (97.1%).

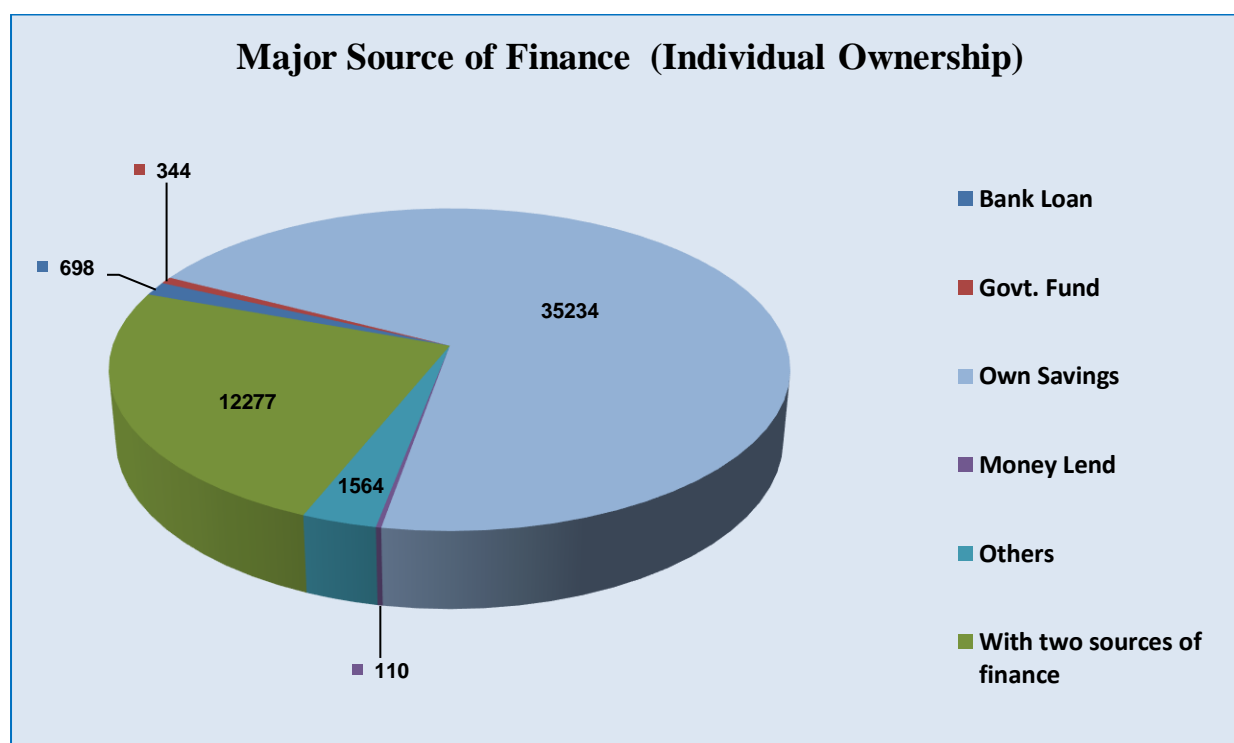
As per the social status of the individual farmers owning the dugwells, about 41.5% schemes belong to Other Backward Castes (OBCs) and others (52.2%), Scheduled Tribe (0.5%) and Scheduled Caste (2.08%).

Sl. No.	Social Status of Owner	Number
1	SC	1086
2	ST	269
3	OBC	21649
4	Others	27223
Total of individual farmer		50227
5	By other than individual farmer	1908
Grand Total		52135



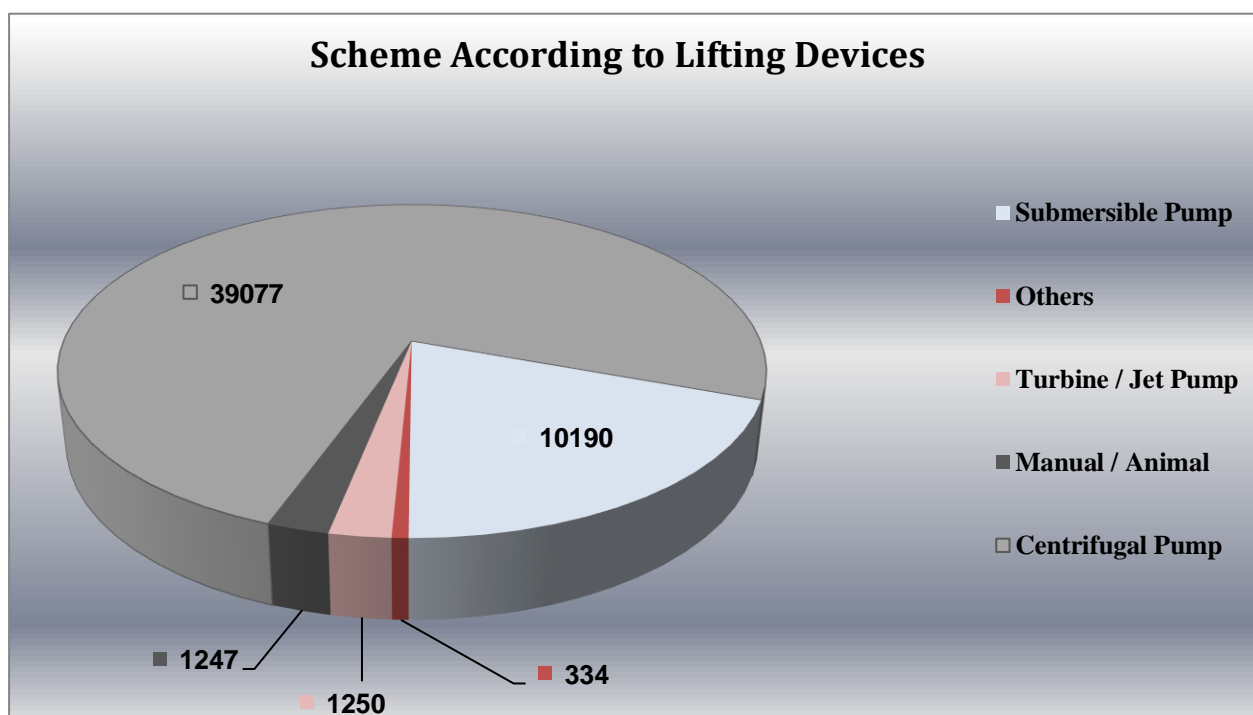
In individually owned dug wells (50227), 75.6% are financed by single source and 24.4% are having more than one source of finance. In single source of finance (37950), majority of schemes 35234 no. s (92.8%) were financed by own saving only.

Sl. No.	Major Source of Finance (Individual Ownership)	Number
1	Bank Loan	698
2	Govt. Fund	344
3	Own Savings	35234
4	Money Lend	110
5	Others	1564
Total		37950
6	With two sources of finance	12277
Grand Total		50227



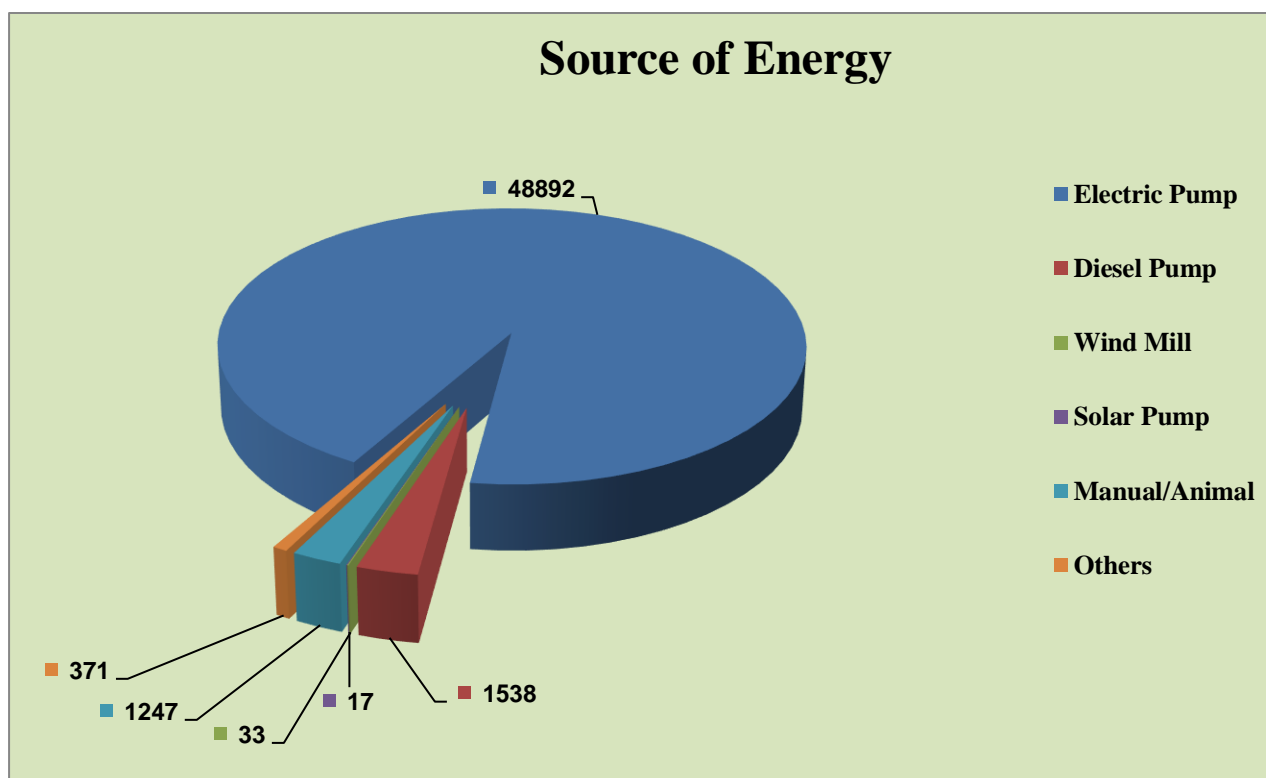
Out of 52135 dug wells 37 are not in use and the remaining 52098 are in use and temporarily not in use. Majority 75% dug wells have centrifugal pumps for lifting water followed by submersible pump (19.57%) and turbine (2.4%).

Sl. No.	Schemes according to Lifting Devices	Number	Percentage
1	Submersible Pump	10190	19.57
2	Centrifugal Pump	39077	75
3	Turbine / Jet Pump	1250	2.40
4	Manual / Animal	1247	2.39
5	Others	334	0.64
Total		52098	100



Among the dug wells, the major source of energy used for lifting devices is electric pumps (93.8%) followed by diesel (3%).

Sl. No.	Source of Energy	Number	Percentage
1	Electric Pump	48892	93.85
2	Diesel Pump	1538	2.95
3	Wind mill	33	0.06
4	Solar Pump	17	0.03
5	Manual / Animal	1247	2.39
6	Others	371	0.72
Total		52098	100

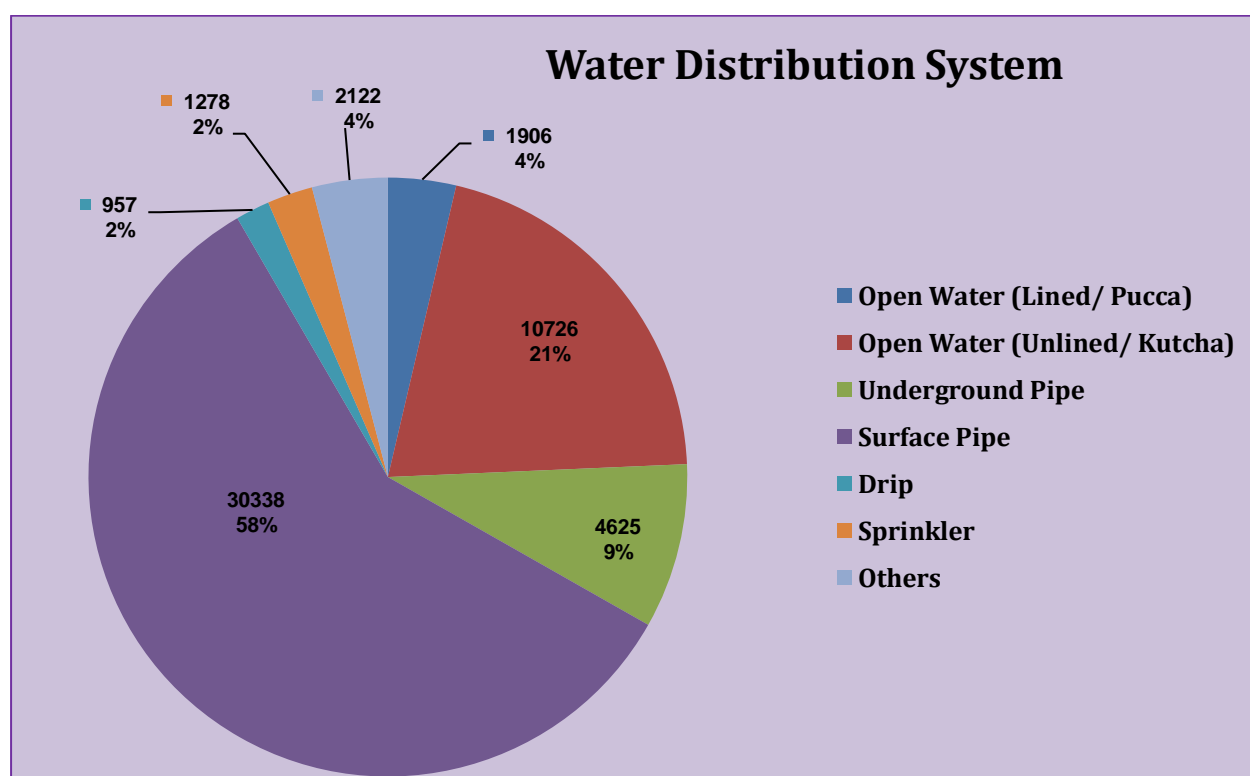


Around 98.7% dug wells have depth in the range 0 - 20 meters followed by 1.1% in 20-40 meters.

Sl. No.	Depth	Number	Percentage
1	0-20 mts	51475	98.73
2	20-40 mts	570	1.09
3	40-60 mts	62	0.12
4	60-70 mts	9	0.02
5	>70 mts	19	0.04
Total		52135	100

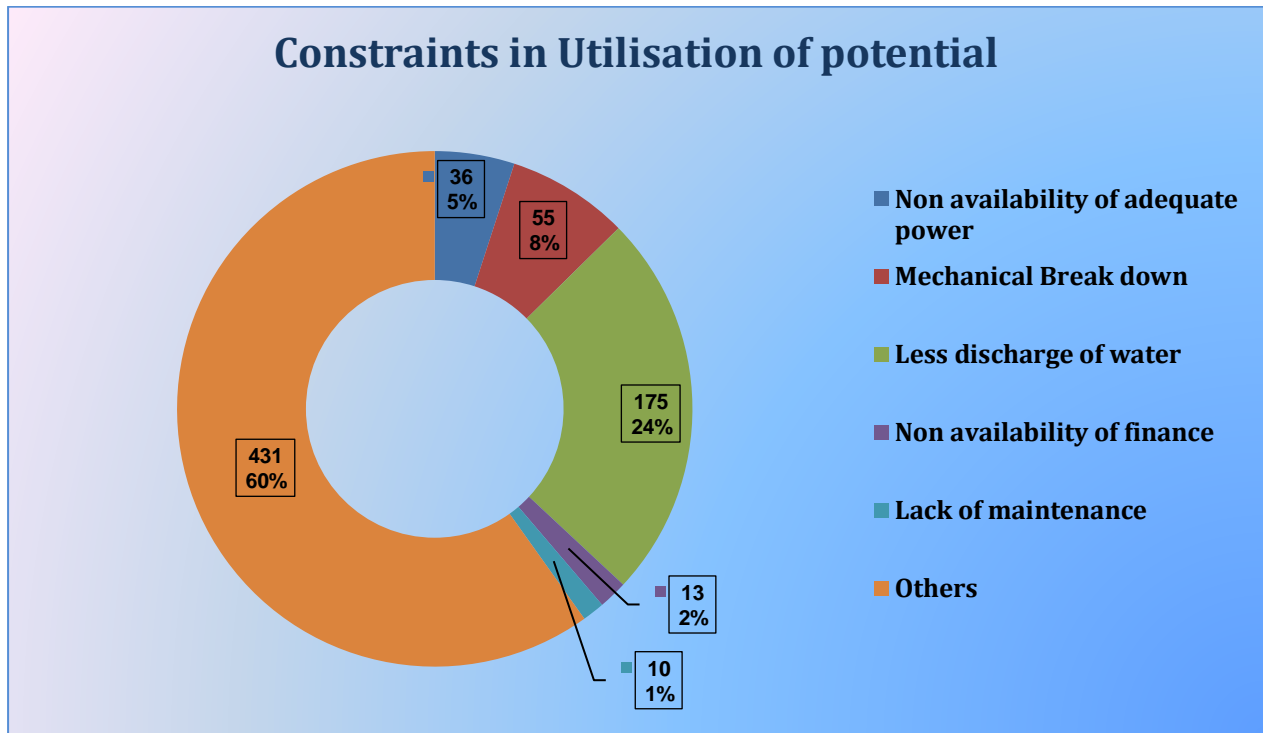
According to water distribution system, surface pipe is dominant (58.4%) followed by open water channel (unlined/kutchha) (20.6%) and underground pipe (8.9%) in dug wells as shown in the table given below.

Sl. No.	Water distribution System	Number	Percentage
1	Open Water (Lined/ Pucca)	1906	3.67
2	Open Water (Unlined/ Kutchha)	10726	20.65
3	Underground Pipe	4625	8.90
4	Surface Pipe	30338	58.40
5	Drip	957	1.84
6	Sprinkler	1278	2.46
7	Others	2122	4.08
Total		51952	100



In the Dug wells, which are 'in use' (51952), around 98.6% (51232) dug wells are functioning without any constraints in utilisation of potential. Out of remaining 1.4% (720) dug wells having constraints in utilisation, reason of 'others' is the dominant (60%) followed by 'less discharge of water' (24.3%).

Sl. No.	Constraints in Utilisation of potential	Number
1	Non availability of adequate power	36
2	Mechanical Break down	55
3	Less discharge of water	175
4	Non availability of finance	13
5	Lack of maintenance	10
6	Others	431
Total		720

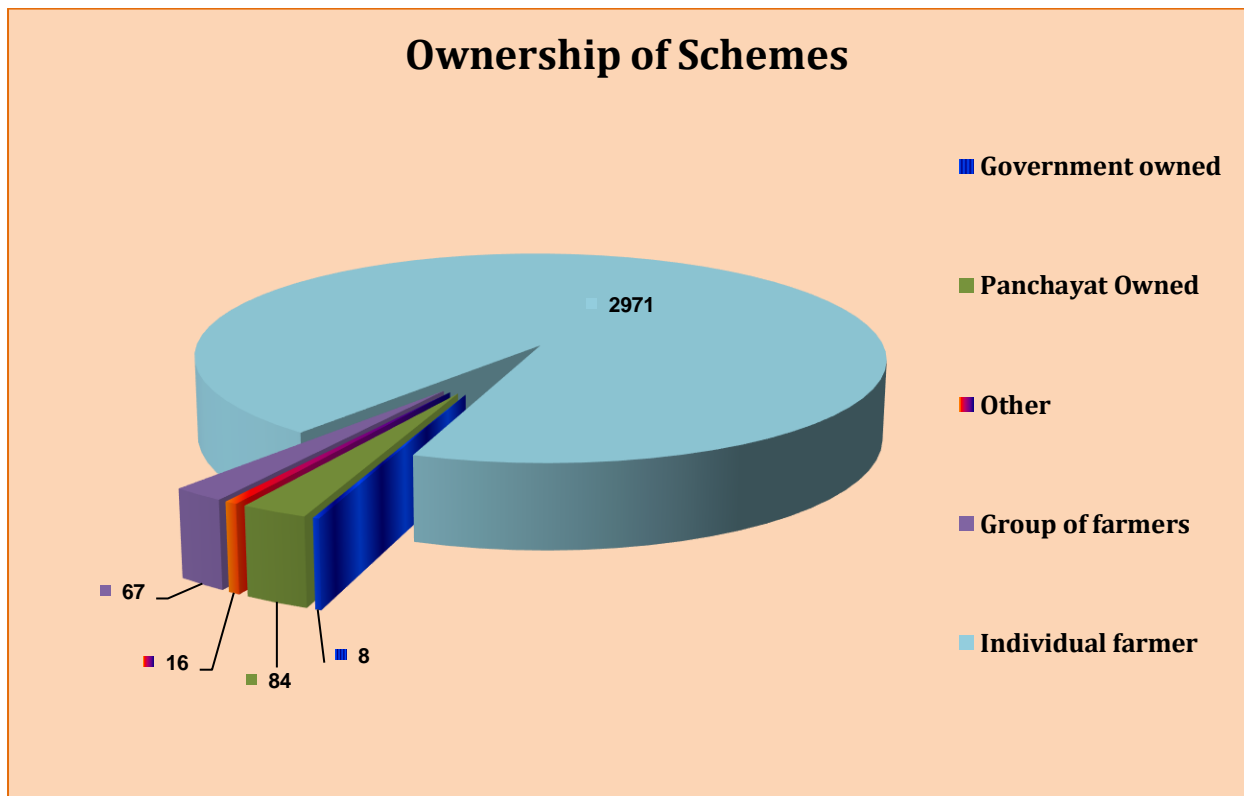


5.4.2 SHALLOW TUBE WELLS:

It consists of a bore hole built into ground with the purpose of tapping ground water from porous zones. In sedimentary formations depth of a shallow tube well does not exceed 35 meters. These tube wells are either cavity tube-wells or strainer tube-wells. These are usually drilled by percussion method using hand boring sets and sometimes percussion rigs. Success and popularity of the scheme depends on how cheap they are. A coir structure formed by binding coir strings over an iron frame is being used as strainer. In shallow water table areas, bamboo frames are also used. Sometimes steel pipe casing are replaced by pipes constructed by rapping bituminised gunny bags over the bamboo frame. These are called bore wells, in which bore-hole is stable without a lining in the bottom portion and a tube is inserted only in the upper zone. The shallow tube wells are generally operated for 6 to 8 hours during irrigation season and give yield of 100-200 cubic meters per day, which is roughly 2 times that of a dug well. Their CCA may go up to 10 hectares.

There are total of 3146 shallow tube wells in the state irrigating 1291 hectare of land. Shallow tube wells are dominantly owned by private entities (96.57%). Out of these, 97.79% shallow tube wells are owned by individual farmers and only 2.21% are owned by group of farmers.

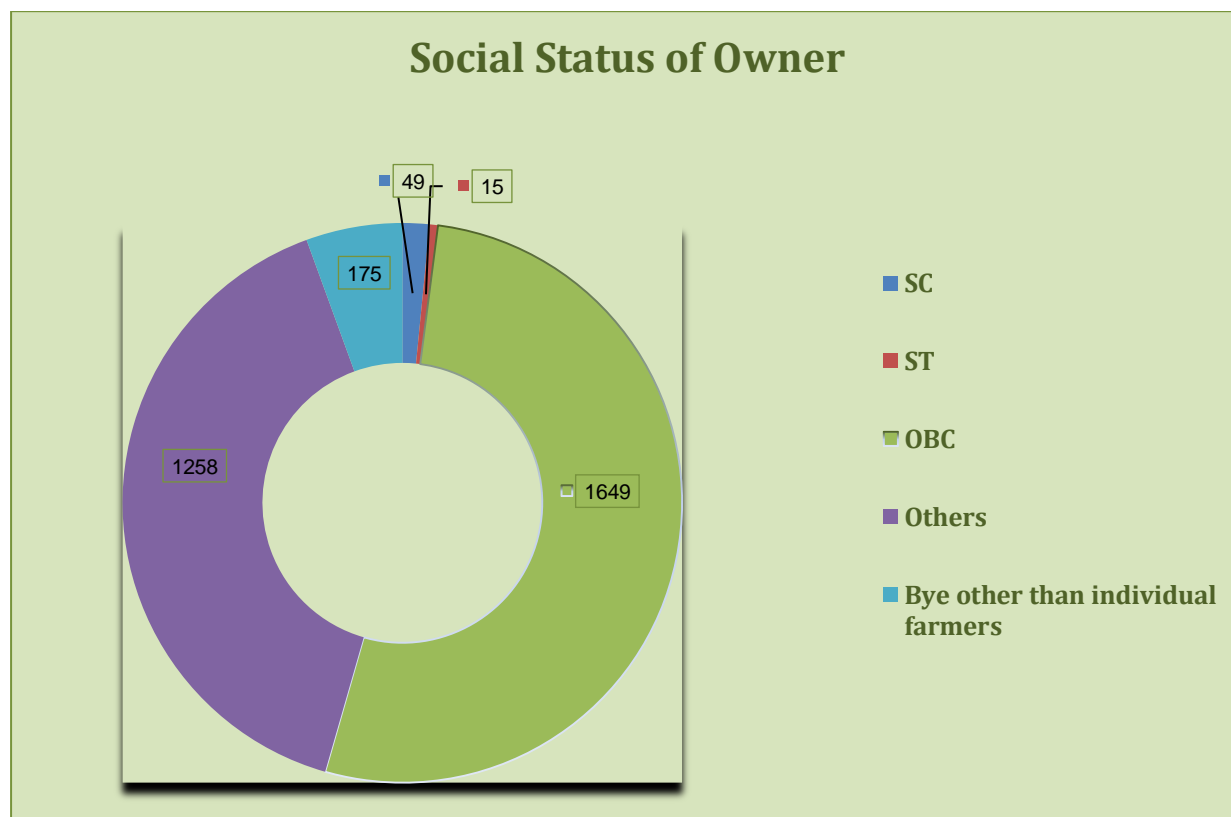
Sl. No.	Ownership of Scheme	Number	Percentage
1	Government owned	8	0.25
2	Panchayat Owned	84	2.67
3	Other	16	0.51
	Public Owned	108	3.43
4	Group of farmers	67	2.13
5	Individual farmer	2971	94.44
	Private total	3038	96.57
	Grand Total	3146	100



Marginal and small farmers have the largest share in ownership of shallow tube wells (98.45%).

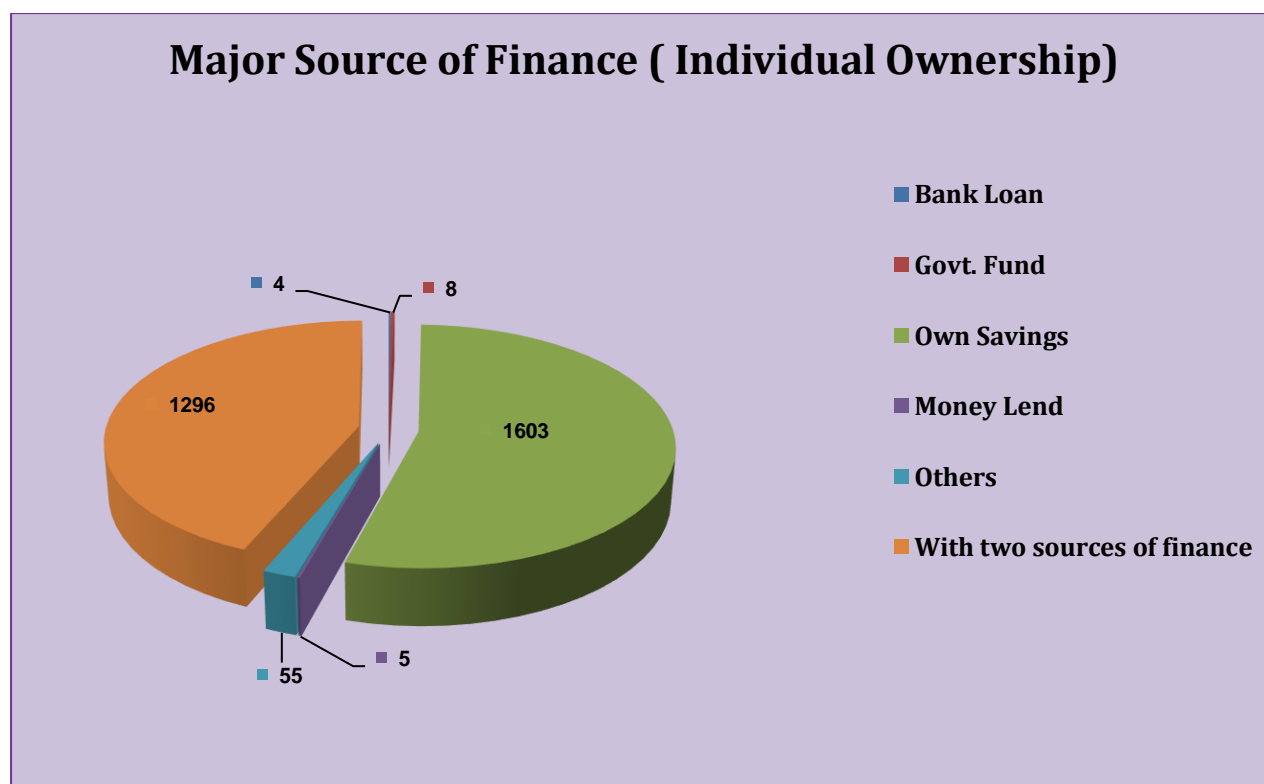
As per the social status of the farmers owning shallow tube wells, 55.5% schemes belong to Other Backward Castes (OBCs) followed by others (42.35%), Scheduled Caste (1.65%) and Scheduled Tribe (0.5%).

Sl. No.	Social Status of Owner	Number
1	SC	49
2	ST	15
3	OBC	1649
4	Others	1258
Total of individual farmer		2971
5	By other than individual farmer	175
Grand Total		3146



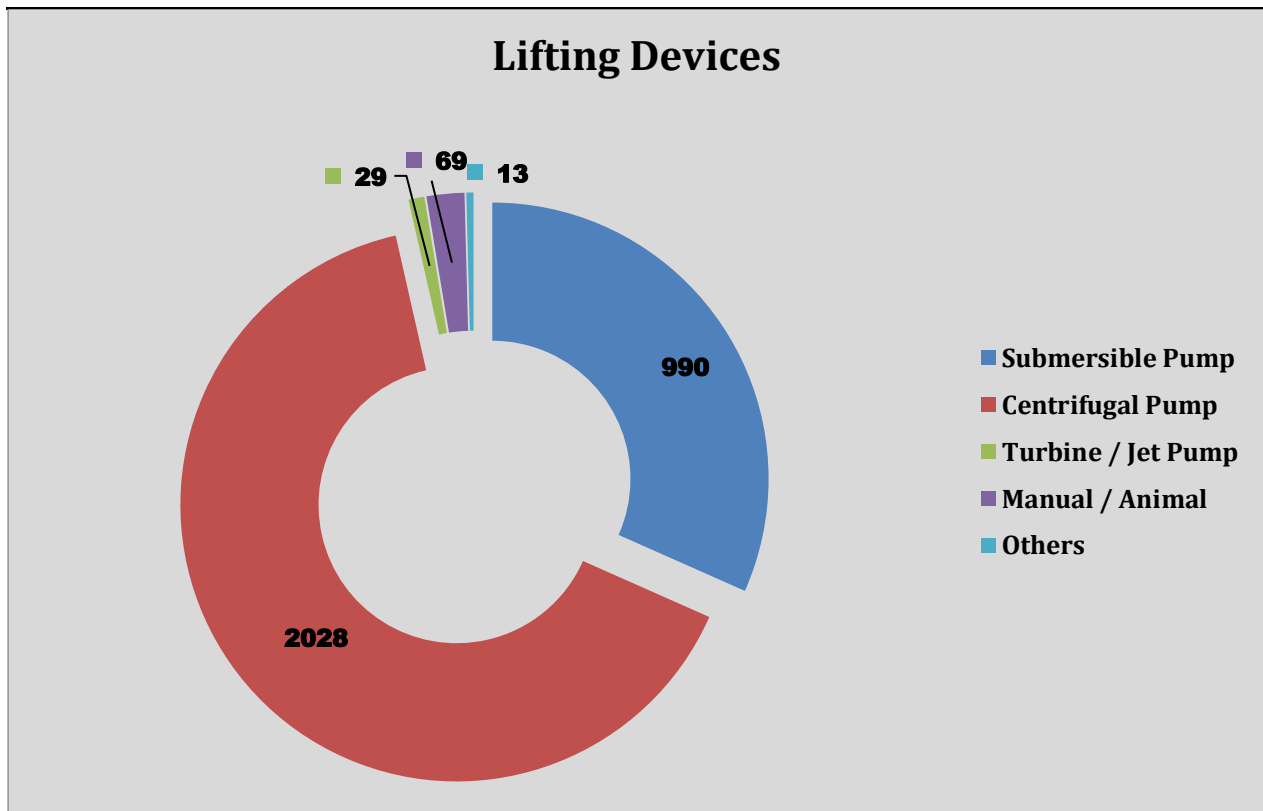
In individually owned shallow tube wells, about 56.38% are financed by single source of finance and 43.62% are having more than one source of finance. In single source of finance, majority of schemes (95.75%) were financed by own saving only.

Sl. No.	Major Source of Finance (Individual Ownership)	Number
1	Bank Loan	4
2	Govt. Fund	8
3	Own Savings	1603
4	Money Lend	5
5	Others	55
Total		1675
6	With two sources of finance	1296
Grand Total		2971



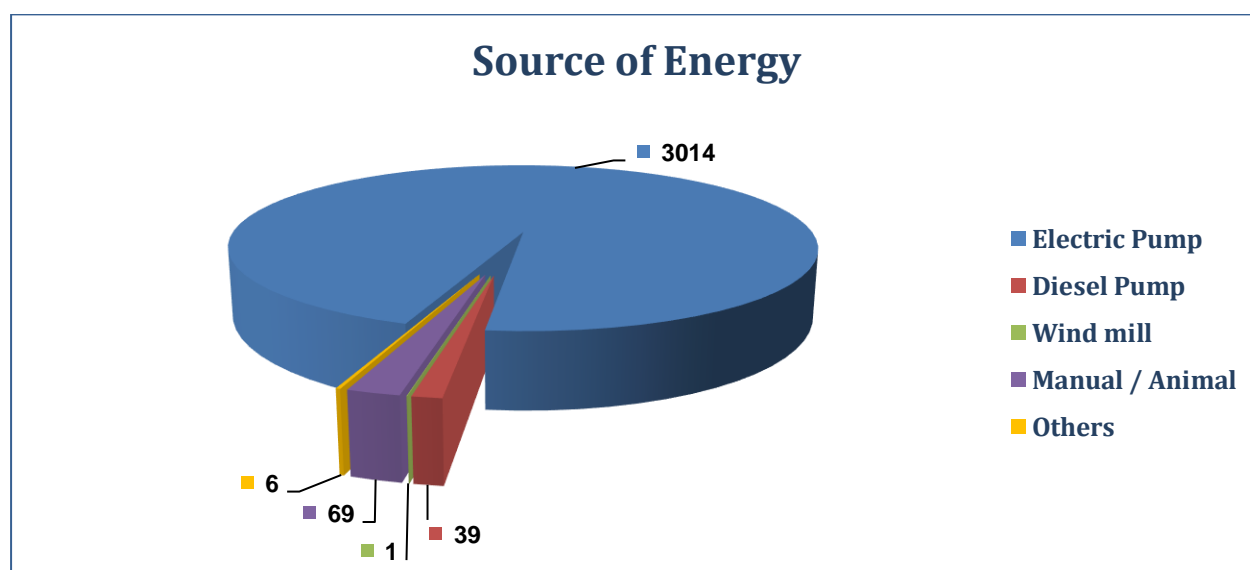
Out of 3129 in use & temporary not in use schemes, 64.81% shallow tube wells have centrifugal pumps as lifting devices followed by submersible pumps (31.64%).

Sl. No.	Schemes according to Lifting Devices	Number	Percentage
1	Submersible Pump	990	31.64
2	Centrifugal Pump	2028	64.81
3	Turbine / Jet Pump	29	0.93
4	Manual / Animal	69	2.21
5	Others	13	0.41
Total		3129	100



Among all the sources of energy used in lifting devices, electricity is dominating (96.32%) followed by manual/animal (2.21%).

Sl. No.	Source of Energy	Number	Percentage
1	Electric Pump	3014	96.32
2	Diesel Pump	39	1.25
3	Wind mill	1	0.03
4	Manual / Animal	69	2.21
5	Others	6	0.19
	Total	3129	100

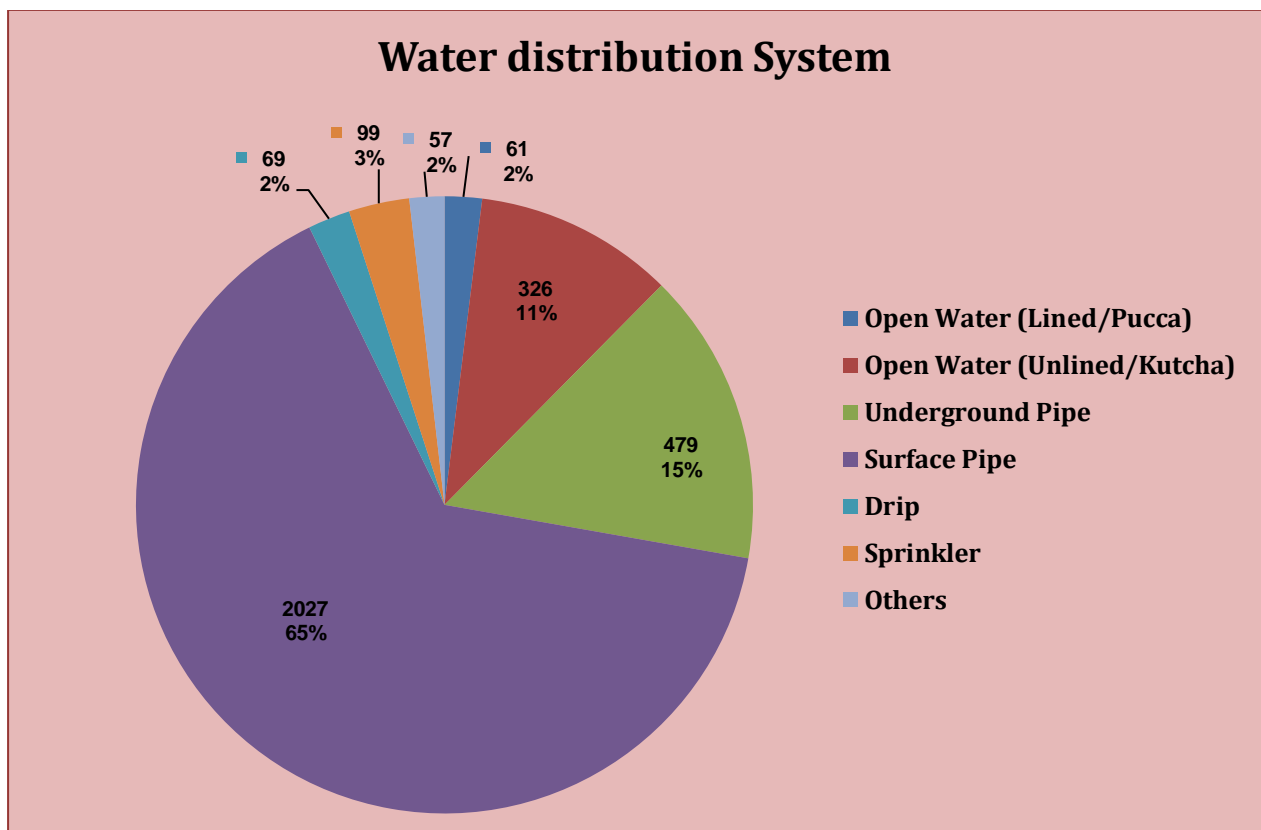


In 6th MI census, 82.55% shallow tube wells are in the depth range of 0-20 meters whereas 17.45% are in the depth range 20-35 meters.

Sl. No.	Depth	Number	Percentage
1	0-20 mts	2597	82.55
2	20-35 mts	549	17.45
	Total	3146	100

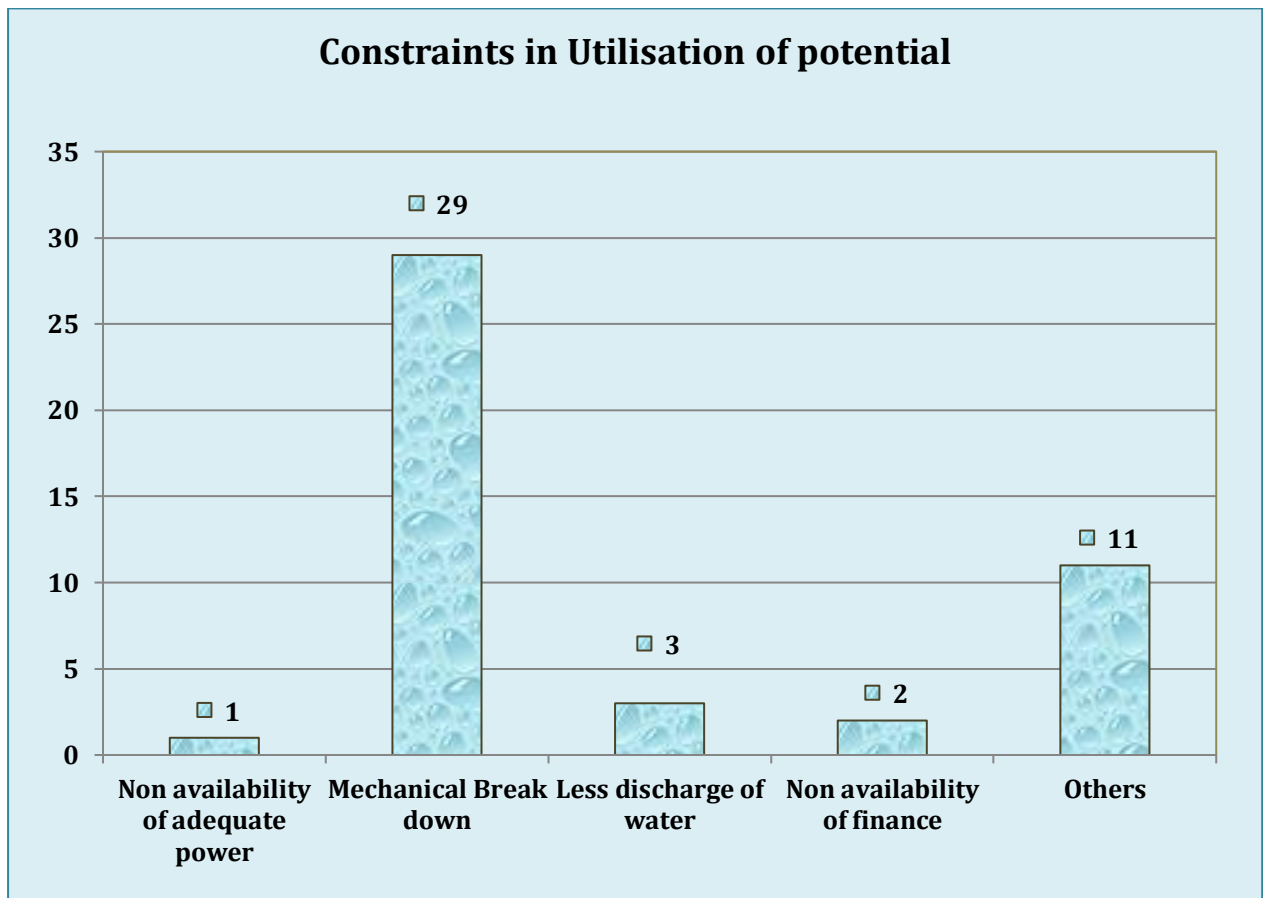
According to water distribution system, out of 3118 in use schemes, surface pipe is dominant (65%) followed by underground pipe (15.36%).

Sl. No.	Water distribution System	Number	Percentage
1	Open Water (Lined/Pucca)	61	1.96
2	Open Water (Unlined/Kutchha)	326	10.46
3	Underground Pipe	479	15.36
4	Surface Pipe	2027	65
5	Drip	69	2.21
6	Sprinkler	99	3.18
7	Others	57	1.83
Total		3118	100



In the shallow tubewells, which are 'in use' (3118), around 98.52% (3072) are functioning without any constraints in utilisation of potential. Out of remaining 1.48% (46) which are having constraints in utilisation, one of the major constraints is 'mechanical breakdown' followed by 'others' and 'less discharge of water'.

Sl. No.	Constraints in Utilisation of potential	Number
1	Non availability of adequate power	1
2	Mechanical Break down	29
3	Less discharge of water	3
4	Non availability of finance	2
5	Others	11
Total		46

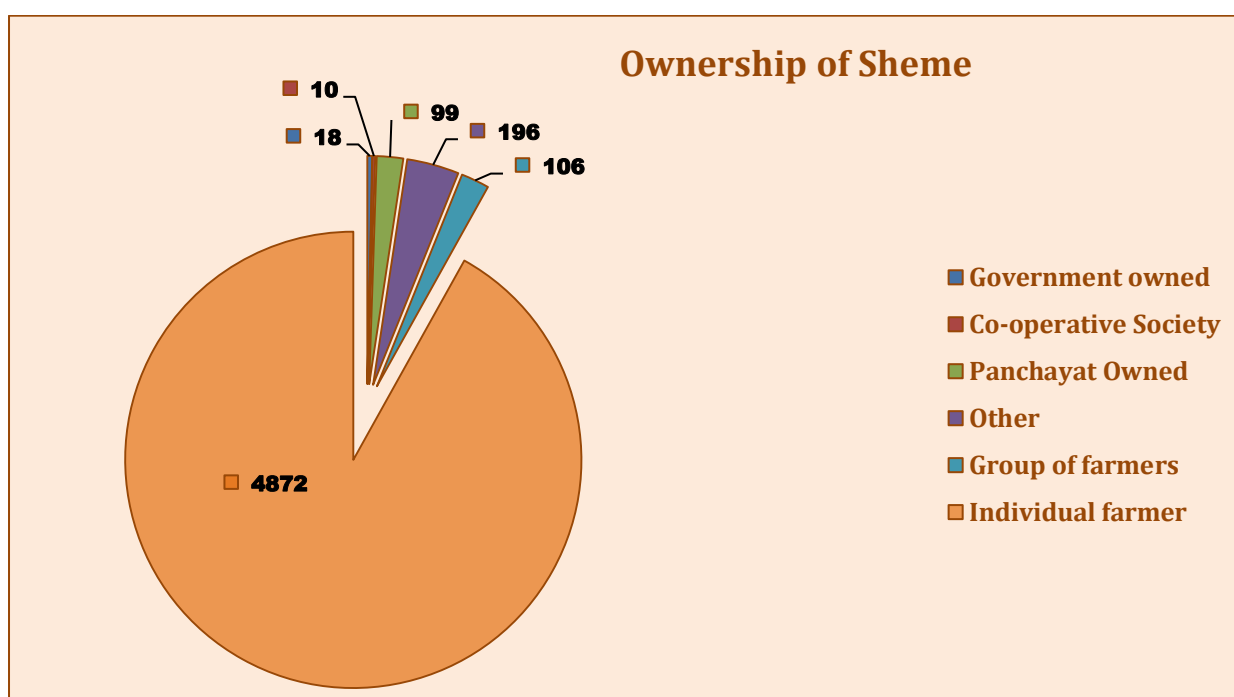


5.4.3 MEDIUM TUBE WELLS:

It consists of a bore hole built into ground with the purpose of tapping ground water from porous zones. In sedimentary formations depth of a medium tube well will be in the range of 35-70 meters. The medium tube wells are generally operated for 8-10 hours during irrigation season and give yield of 200-300 cubic meters per day, which is roughly 3 times that of a dug well. Their CCA may go from 10-15 hectares.

There are total of 5301 medium tubewells in the state irrigating 4082 hectares of land. Medium tube wells are dominantly owned by private entities (93.91%). Out of these, 97.87% medium tube wells are owned by individual farmers and only 2.13% are owned by group of farmers.

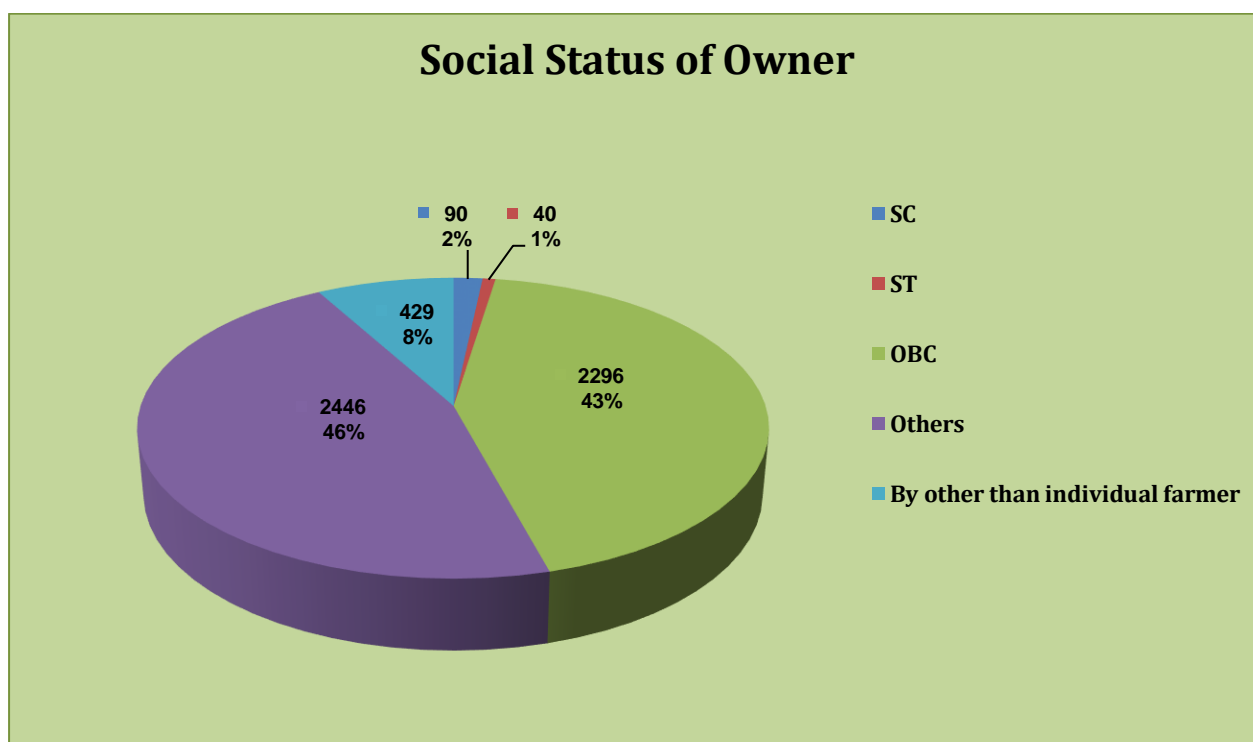
Sl. No.	Ownership of Scheme	Number	Percentage
1	Government owned	18	0.34
2	Co-operative Society	10	0.19
3	Panchayat Owned	99	1.86
4	Other	196	3.70
	Public Owned	323	6.09
5	Group of farmers	106	2.00
6	Individual farmer	4872	91.91
	Private total	4978	93.91
	Grand Total	5301	100



Marginal and small farmers have the largest share (92.36%) in ownership of medium tube wells.

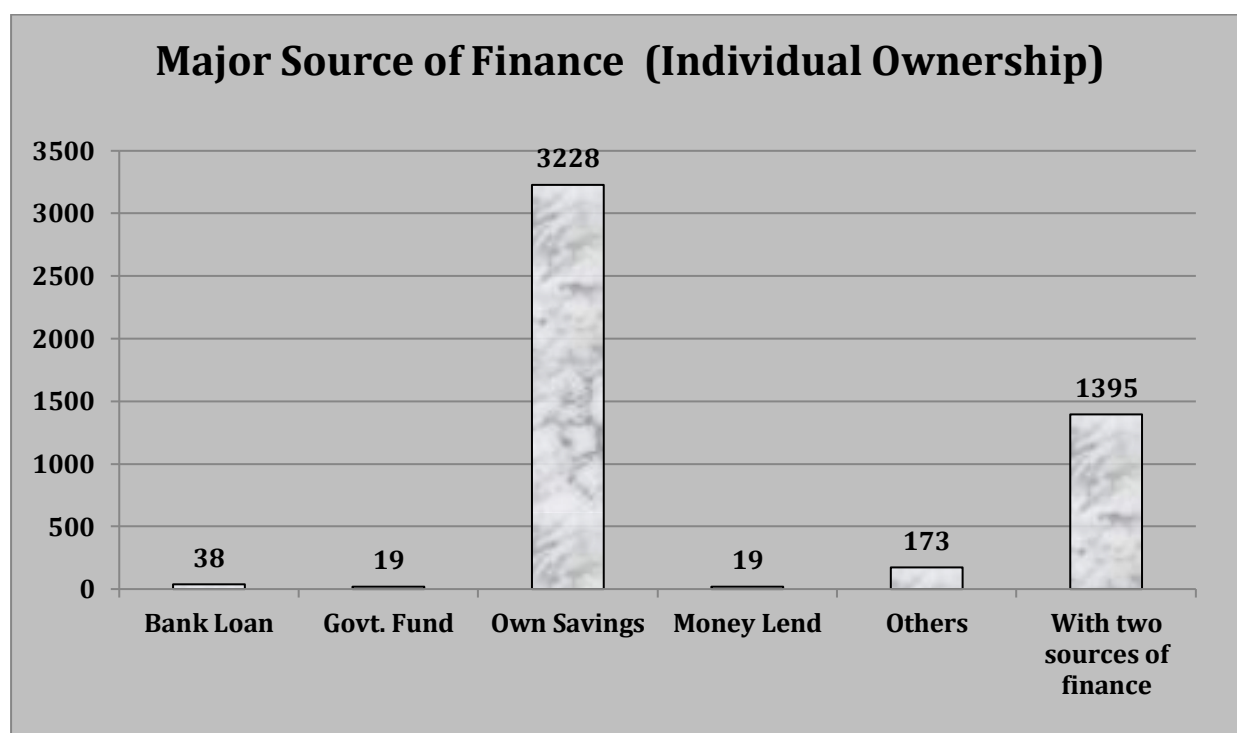
As per the social status of the farmers owning medium tubewells, 91.91% are individual farmers, and out of this 50.2% are from Others followed by Other Backward Castes (OBCs) (47.13%), Scheduled Caste (1.85%) and Scheduled Tribe (0.82%).

Sl. No.	Social Status of Owner	Number	Percentage
1	SC	90	1.7
2	ST	40	0.75
3	OBC	2296	43.31
4	Others	2446	46.14
	Total of individual farmer	4872	91.91
5	By other than individual farmer	429	8.09
	Total	5301	100



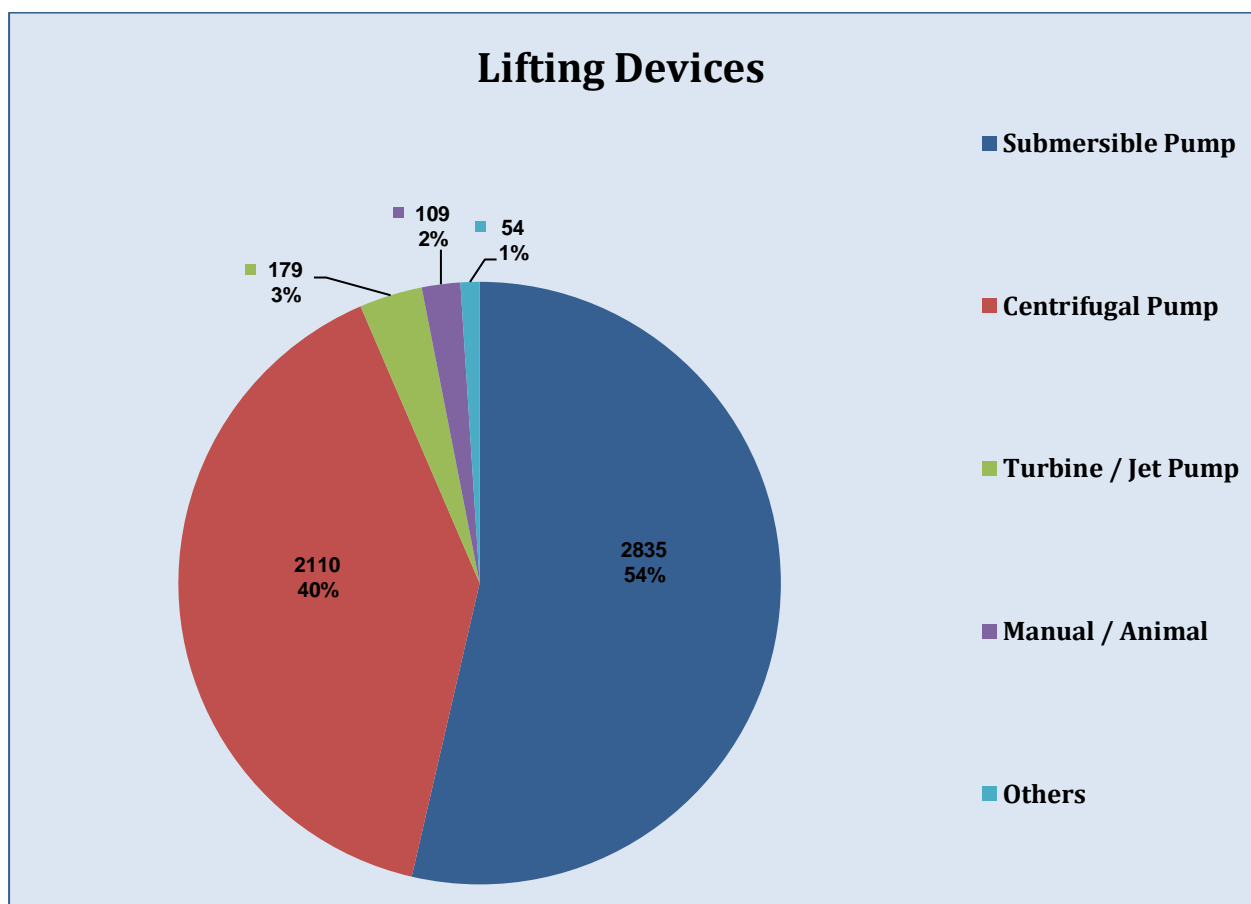
In individually owned medium tube wells, 71.37% are financed using single source and 28.63% are financed using more than one source. In single source of finance, majority of schemes (92.84%) are financed by own savings only as shown in the pie chart given below.

Sl. No.	Major Source of Finance (Individual Ownership)	Number
1	Bank Loan	38
2	Govt. Fund	19
3	Own Savings	3228
4	Money Lend	19
5	Others	173
Total		3477
6	With two sources of finance	1395
Grand Total		4872



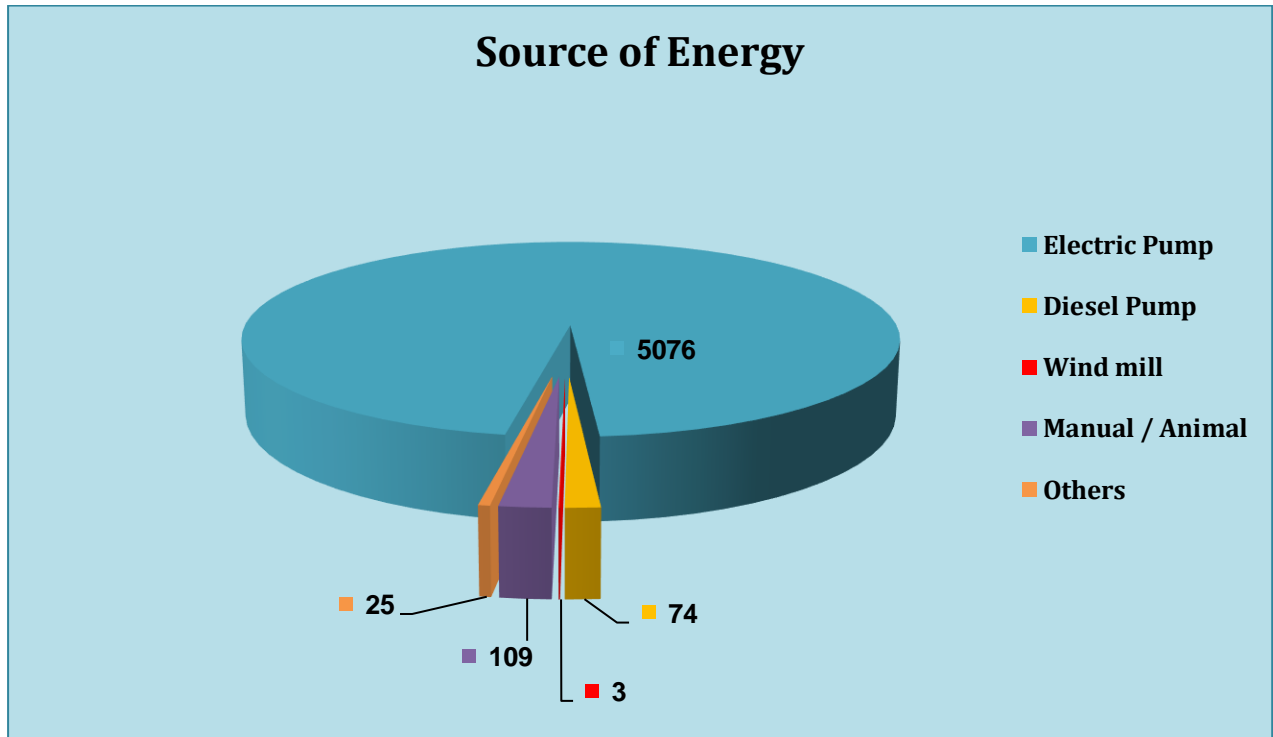
Out of 5301 medium tube wells, 14 are not in use and 5287 are in use and temporarily not in use. About 53.63% medium tubewells have submersible pumps for lifting water followed by centrifugal pumps (39.91%).

Sl. No.	Schemes according to Lifting Devices	Number	Percentage
1	Submersible Pump	2835	53.63
2	Centrifugal Pump	2110	39.91
3	Turbine / Jet Pump	179	3.39
4	Manual / Animal	109	2.06
5	Others	54	1.02
Total		5287	100



Among all the sources of energy used in lifting devices, electric pumps are dominating (96%).

Sl. No.	Source of Energy	Number	Percentage
1	Electric Pump	5076	96
2	Diesel Pump	74	1.40
3	Wind mill	3	0.06
4	Manual / Animal	109	2.06
5	Others	25	0.48
	Total	5287	100

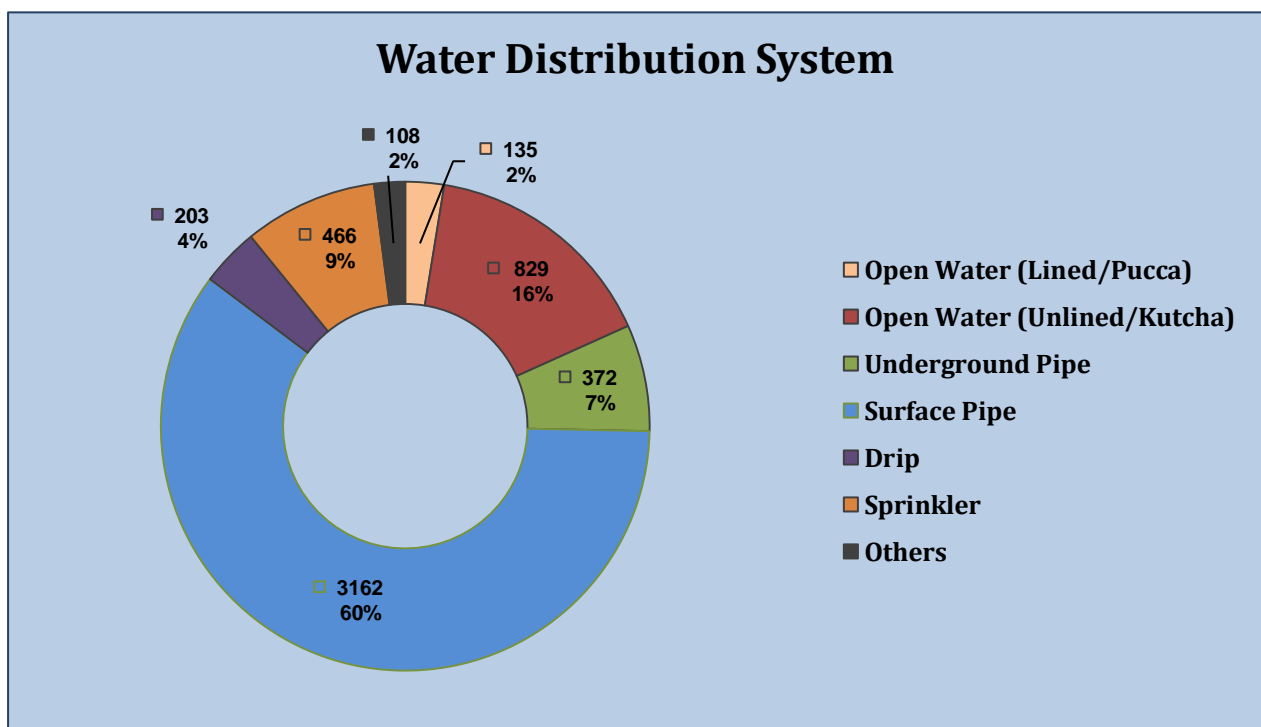


As per the definition, medium tube wells have depth in the range 35-70 meters. In the 6th MI census, 67.10% medium tube wells are in the depth range of 60-70 meters whereas 27.49% are in depth range of 40-60 meters.

Sl. No.	Depth	Number	Percentage
1	35-40 mts	287	5.41
2	40-60 mts	1457	27.49
3	60-70 mts	3557	67.10
	Total	5301	100

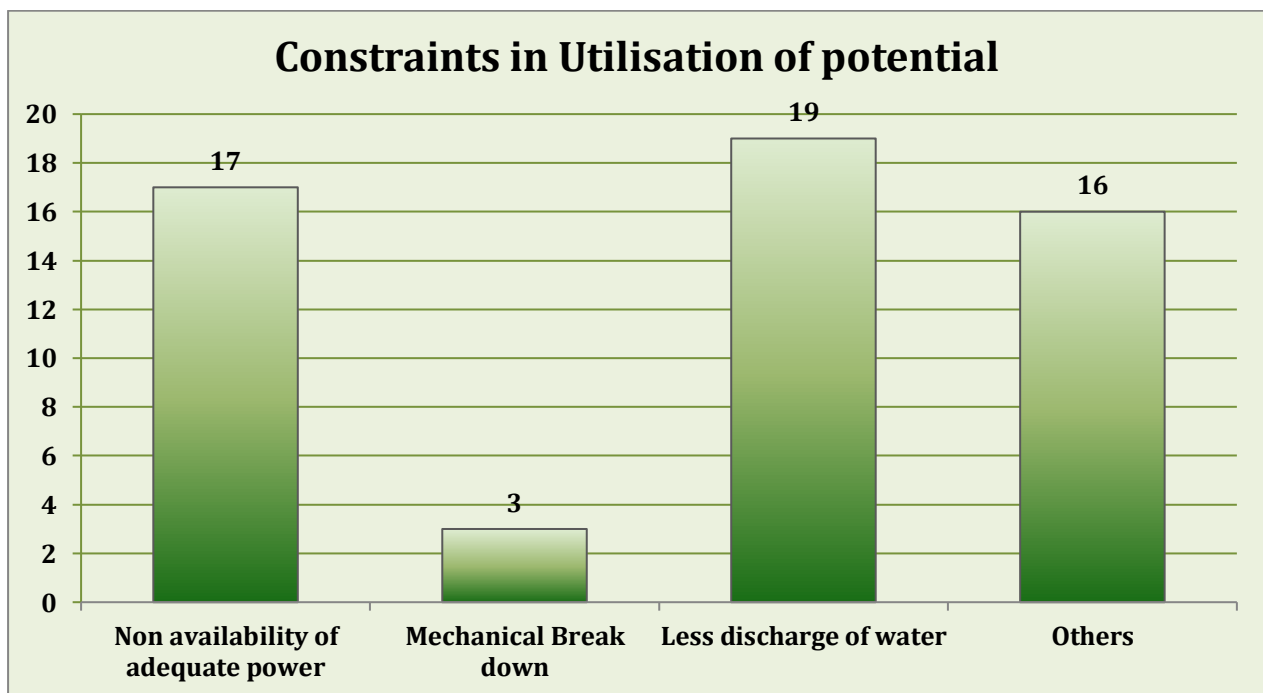
According to water distribution system, (only in use) surface pipe (59.94%) is dominant followed by open water channel (unlined/kutchha) (15.72%) and sprinkler (8.83%), which is also shown in the table given below.

Sl. No.	Water distribution System	Number	Percentage
1	Open Water (Lined/ Pucca)	135	2.56
2	Open Water (Unlined/ Kutchha)	829	15.72
3	Underground Pipe	372	7.05
4	Surface Pipe	3162	59.94
5	Drip	203	3.85
6	Sprinkler	466	8.83
7	Others	108	2.05
Total		5275	100



In the medium tube wells, which are 'in use', around 98.96% are functioning without any constraints in utilization of potential. Out of remaining 1.04% (55) which are having constraints in utilization, 'less discharge of water' is main constraints followed by 'non availability of adequate power', which is also depicted from the table given below.

Sl. No.	Constraints in Utilisation of potential	Number
1	Non availability of adequate power	17
2	Mechanical Break down	3
3	Less discharge of water	19
4	Others	16
Total		55



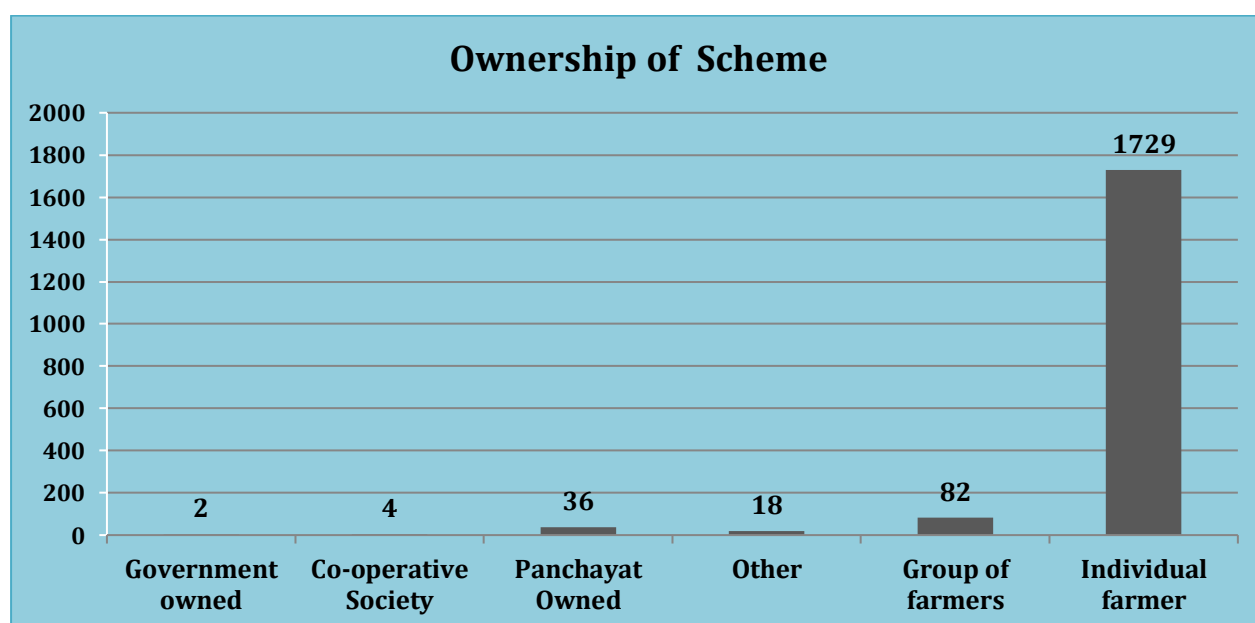
5.4.4 Deep Tube wells

It usually extends to the depth of 70 meter and more and is designed to give a discharge of 100 to 200 cubic meters per hour. The deep tube wells are drilled by rotary percussion or rotary cum percussion rigs. These tube wells operate round the clock during the irrigation season, depending upon the availability of power. Their annual output is

roughly 15 times that of an average shallow tube well and is usually constructed as public scheme which are owned and operated by government departments or corporations. Their CCA may go up to 50 hectares.

There are total of 1871 deep tube wells in the state irrigating 2122 hectares of land. Deep tube wells grew from 1768 in 2013-14 to 1871 in 2017-18. Deep tube wells are dominantly owned by private entities 1811 no.s (96.79%). Out of these, 1729 no.s deep tube wells are owned by individual farmers and only 82 nos are owned by group of farmers.

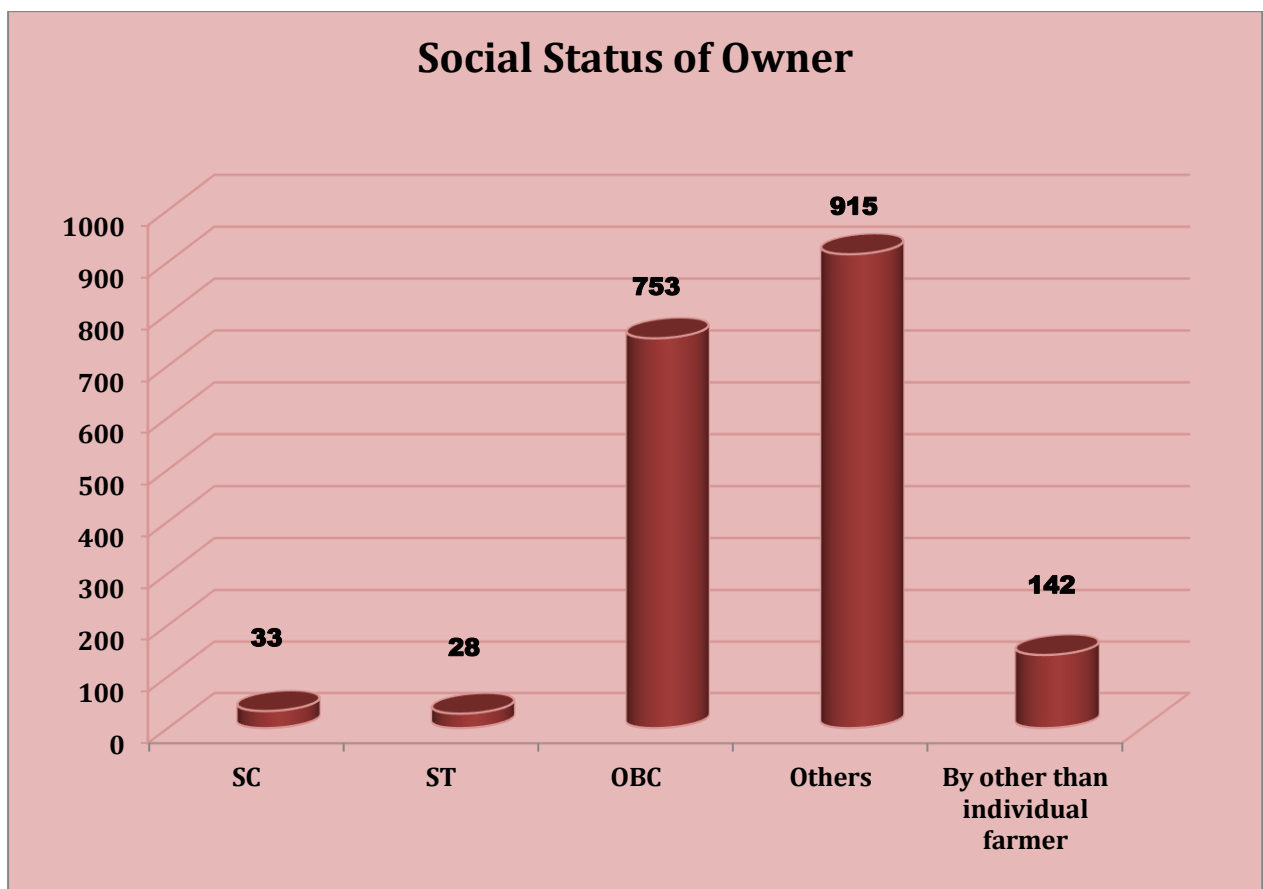
Sl. No.	Ownership of Scheme	Number
1	Government owned	2
2	Co-operative Society	4
3	Panchayat Owned	36
4	Other	18
	Public Owned	60
5	Group of farmers	82
6	Individual farmer	1729
	Private total	1811
	Grand Total	1871



Marginal and small farmers have the largest share (83.75%) in ownership of deep tube wells.

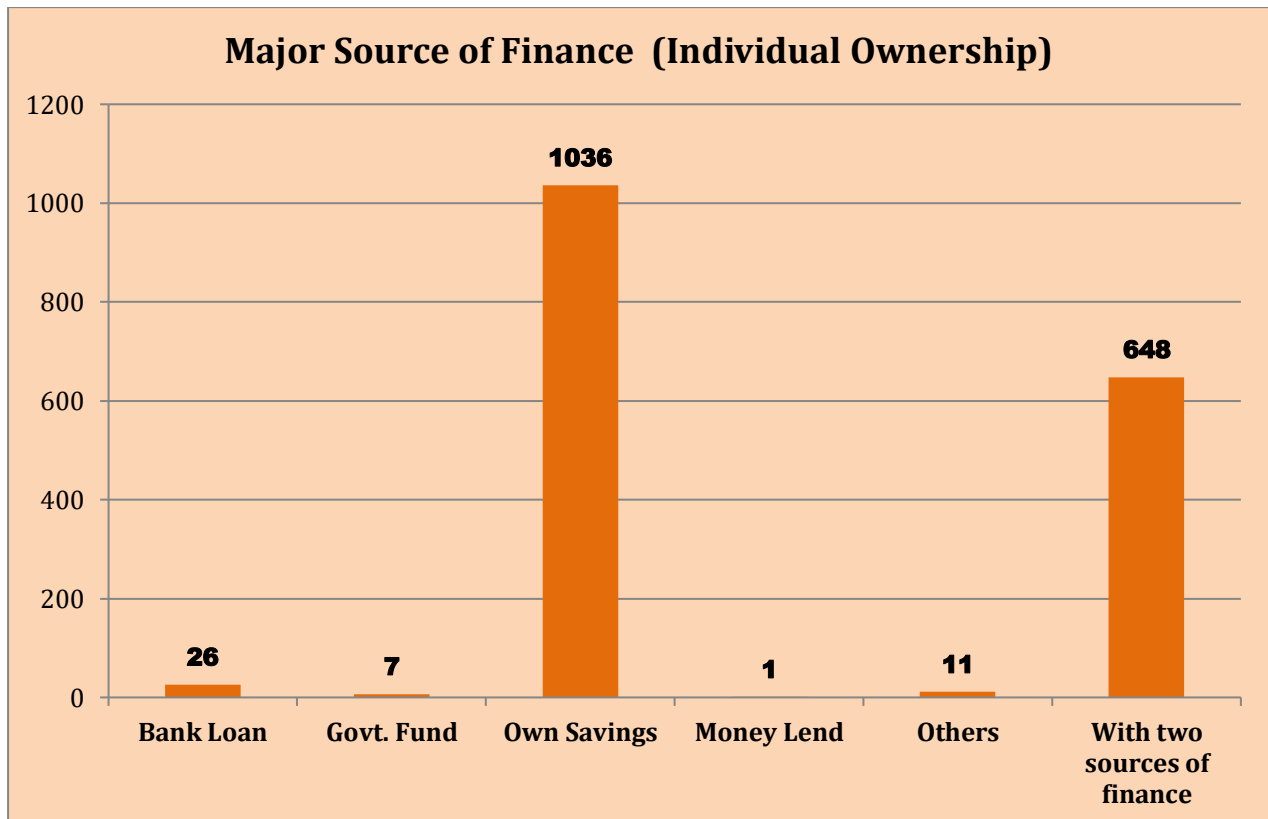
As per the social status of the farmers owning deep tube wells, 915 schemes belong to others followed by Other Backward Castes (OBCs) 753, Scheduled Caste 33 and Scheduled Tribe 28.

Sl. No.	Social Status of Owner	Number
1	SC	33
2	ST	28
3	OBC	753
4	Others	915
Total of individual farmer		1729
5	By other than individual farmer	142
Total		1871



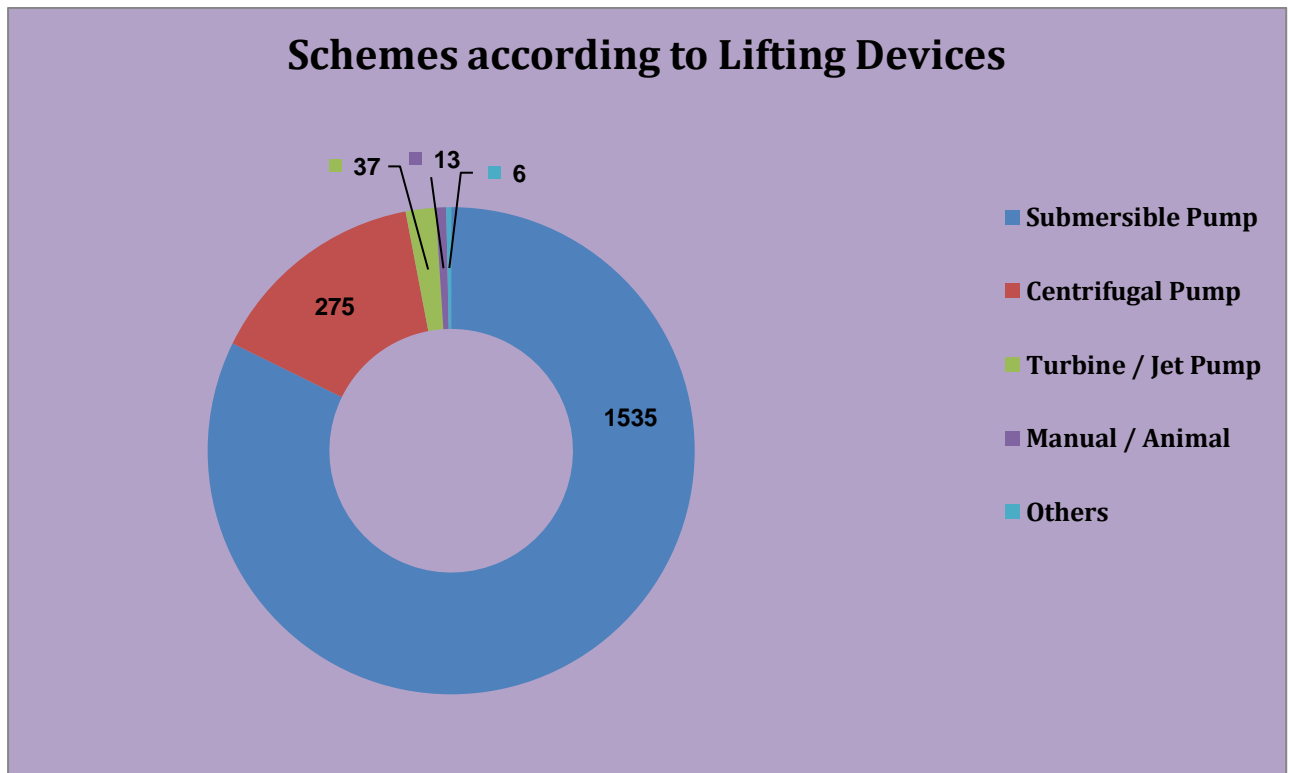
In individually owned deep tube wells (1729), 1081 are financed by single source of finance and 648 are having more than one source of finance. In single source of finance, 1036 schemes were financed by own savings only.

Sl. No.	Major Source of Finance (Individual Ownership)	Number
1	Bank Loan	26
2	Govt. Fund	7
3	Own Savings	1036
4	Money Lend	1
5	Others	11
Total		1081
6	With two sources of finance	648
Grand Total		1729



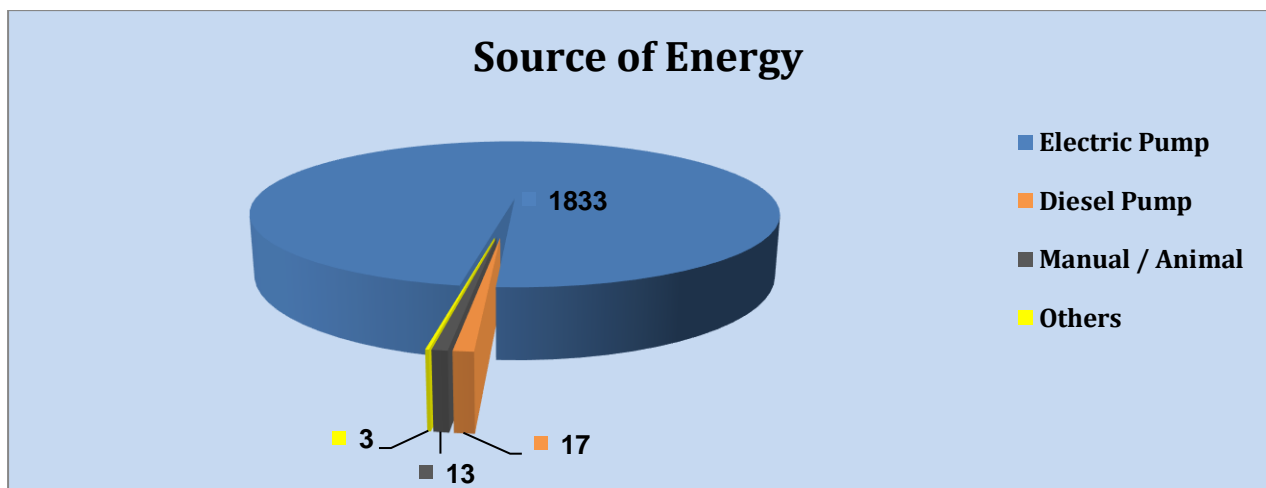
Five tube wells are not in use and out of 1866 tube wells which are in use and temporarily not in use, 82.26% deep tube wells have submersible pumps for lifting water followed by centrifugal pumps (14.74%).

Sl. No.	Schemes according to Lifting Devices	Number	Percentage
1	Submersible Pump	1535	82.26
2	Centrifugal Pump	275	14.74
3	Turbine / Jet Pump	37	1.98
4	Manual / Animal	13	0.70
5	Others	6	0.32
Total		1866	100



Among the single sources of energy, electricity is dominating (98.23%) followed by diesel (0.91%).

Sl. No.	Source of Energy	Number	Percentage
1	Electric Pump	1833	98.23
2	Diesel Pump	17	0.91
3	Manual / Animal	13	0.70
4	Others	3	0.16
Total		1866	100

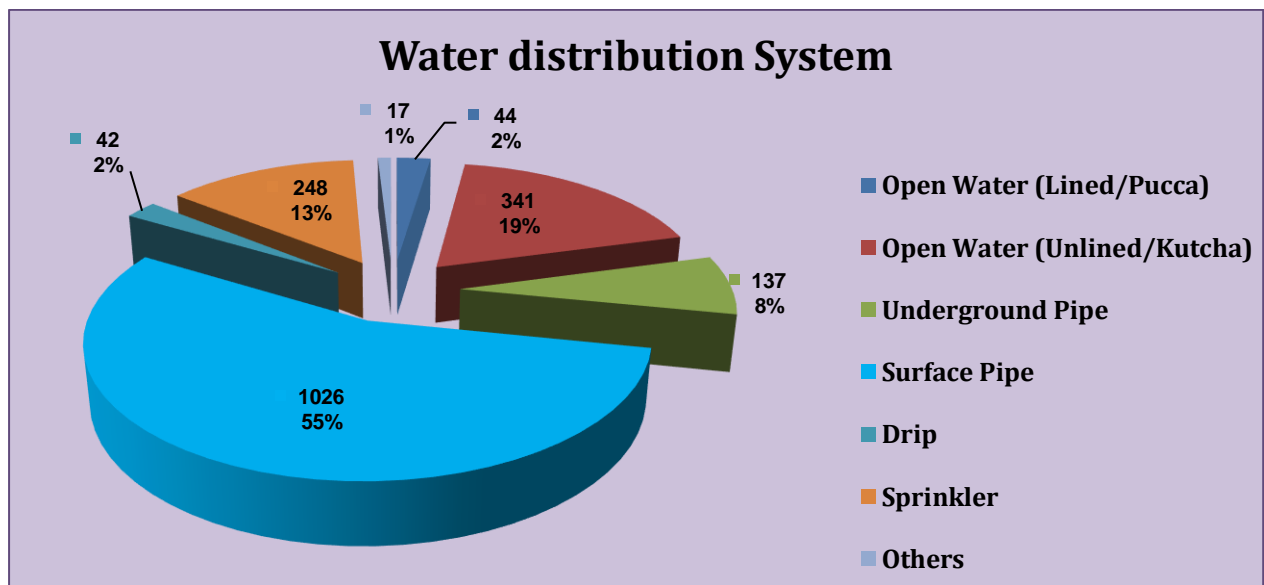


As per the definition, deep tube wells have depth more than 70 meters and in 6th MI census, many (38.86%) of deep tube wells are in the depth range of 70-90 meters followed by 38.16% with depth ranging between 90-110 meters.

Sl No.	Depth	Number	Percentage
1	70-90 mts	727	38.86
2	90-110 mts	714	38.16
3	110-130 mts	235	12.56
4	130-150 mts	65	3.47
5	>= 150 mts	130	6.95
Total		1871	100

According to water distribution system, out of 1855 deep tubewells which are in use, surface pipe is dominant (55.31%) followed by open water channel (unlined/kutchha) (18.38%) and sprinkler (13.37%).

Sl. No.	Water distribution System	Number	Percentage
1	Open Water (Lined/Pucca)	44	2.37
2	Open Water (Unlined/Kutchha)	341	18.38
3	Underground Pipe	137	7.39
4	Surface Pipe	1026	55.31
5	Drip	42	2.26
6	Sprinkler	248	13.37
7	Others	17	0.92
Total		1855	100



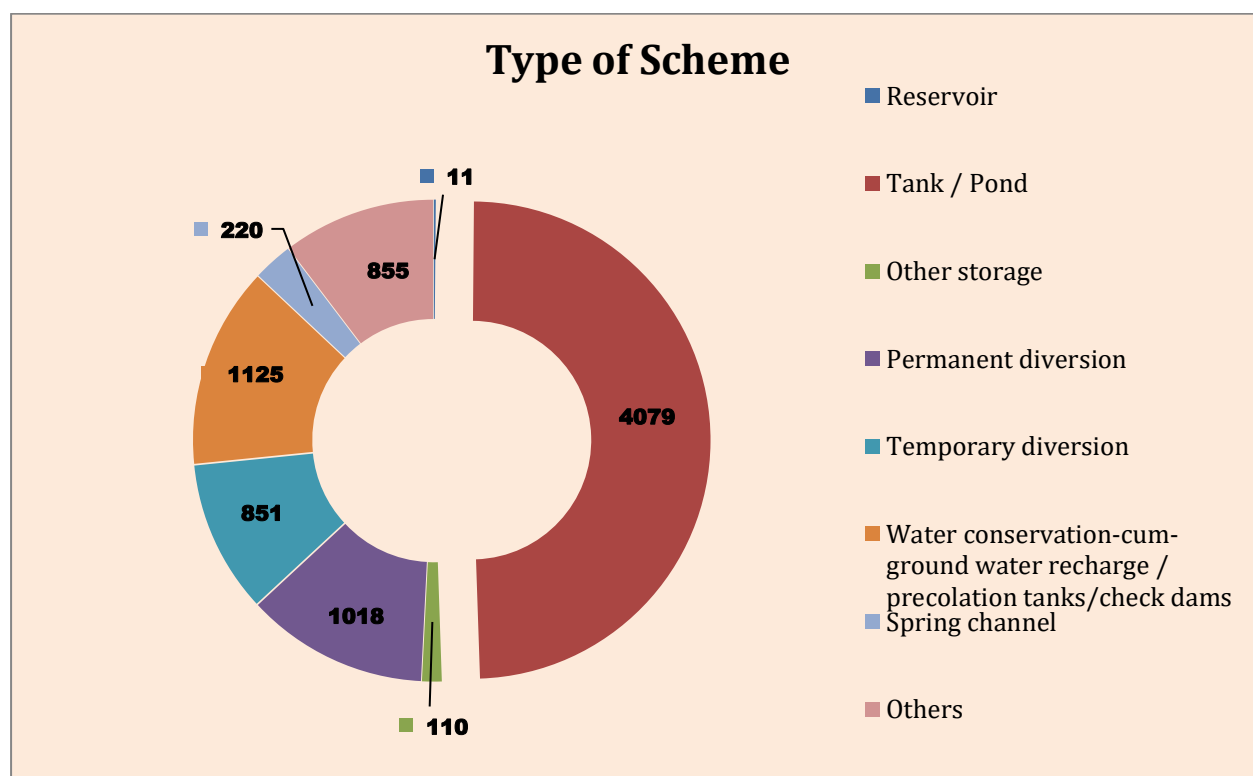
In the deep tube wells, which are 'in use' (1855), 1843 (99.35%) are functioning without any constraints in utilisation of potential. Out of remaining 12 (0.65%) deep tube wells having constraints in utilisation, reason of 'less discharge of water' is dominant (11 no.s) and only one by 'lack of maintenance'.

5.4.5 SURFACE FLOW SCHEMES:

These schemes use rainwater for irrigation purposes either by storing it or by diverting it from a stream, nalah or river. Sometimes, permanent diversions are constructed for utilising the flowing water of a stream or river. Temporary diversions are also constructed in many areas which are usually washed away during the rainy season. The small storage tanks are called ponds which are mostly community owned. The command areas of such schemes are 20 hectares or less. The large storage tanks whose command varies from 20 to 2000 hectares are generally constructed by government departments or local bodies. These are the biggest items of surface minor irrigation works.

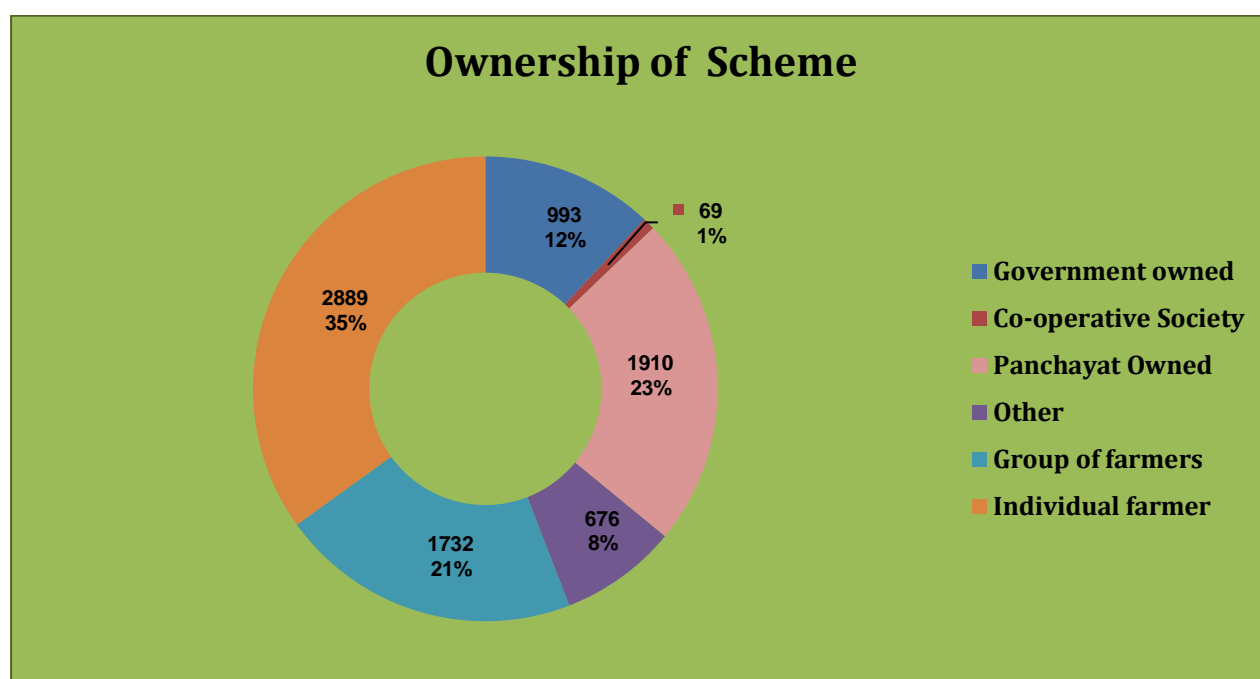
There are total of 8269 surface flow schemes in Kerala irrigating 75656 ha of land. Majority of these surface flow schemes are located in Thiruvananthapuram, Malappuram, Palakkad, Kottayam and Alappuzha. In surface flow schemes, tanks/ponds have largest share of 49.33%.

Sl. No.	Type of Scheme	Number	Percentage
	Reservoir	11	0.13
2	Tank / Pond	4079	49.33
3	Other storage	110	1.33
4	Permanent diversion	1018	12.31
5	Temporary diversion	851	10.29
6	Water conservation-cum-ground water recharge / percolation tanks/check dams	1125	13.61
7	Spring channel	220	2.66
8	Others	855	10.34
Total		8269	100



Surface flow schemes are largely in private ownership (55.88%) whereas 44.12% are owned by public entities. In privately owned surface flow schemes (4621), majority (62.52%) is owned by individual farmers and only 37.48% are owned by group of farmers. In public owned surface flow schemes (3648), majority (52.36%) are Panchayat owned followed by Government owned (27.22%) and rest (20.42%) is owned by cooperatives and others.

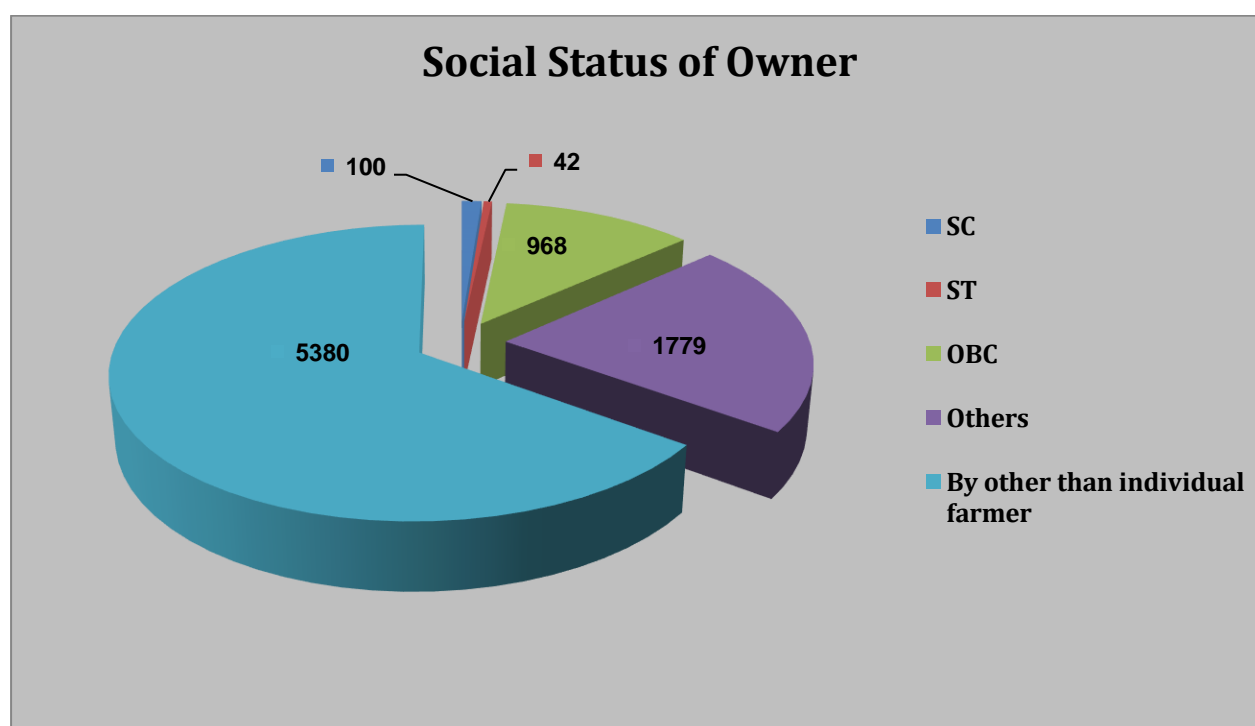
Sl. No.	Ownership of Scheme	Number	Percentage
1	Government owned	993	12
2	Co-operative Society	69	8.83
3	Panchayat Owned	1910	23.10
4	Other	676	8.18
Public Owned		3648	44.12
5	Group of farmers	1732	20.95
6	Individual farmer	2889	34.94
Private total		4621	55.88
Grand Total		8269	100



Marginal and small farmers have the largest share in ownership of surface flow schemes (85.46%).

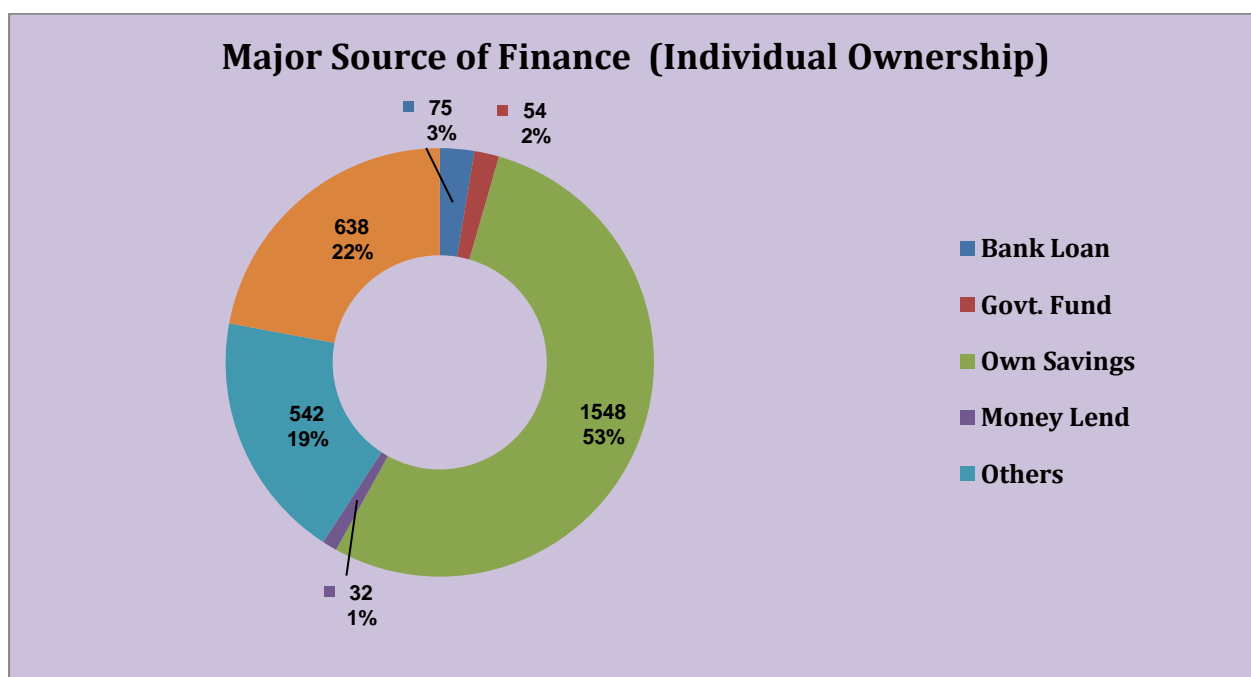
As per the social status of the individual farmers owning surface flow schemes (2889), about 61.58% schemes belong to Others followed by Other Backward Castes (OBCs) (33.51%), Scheduled Caste (3.46%) and Scheduled Tribe (1.45%).

Sl. No.	Social Status of Owner	Number	Percentage
1	SC	100	1.21
2	ST	42	0.51
3	OBC	968	11.71
4	Others	1779	21.51
Total of individual farmer		2889	34.94
5	By other than individual farmer	5380	65.06
Total		8269	100



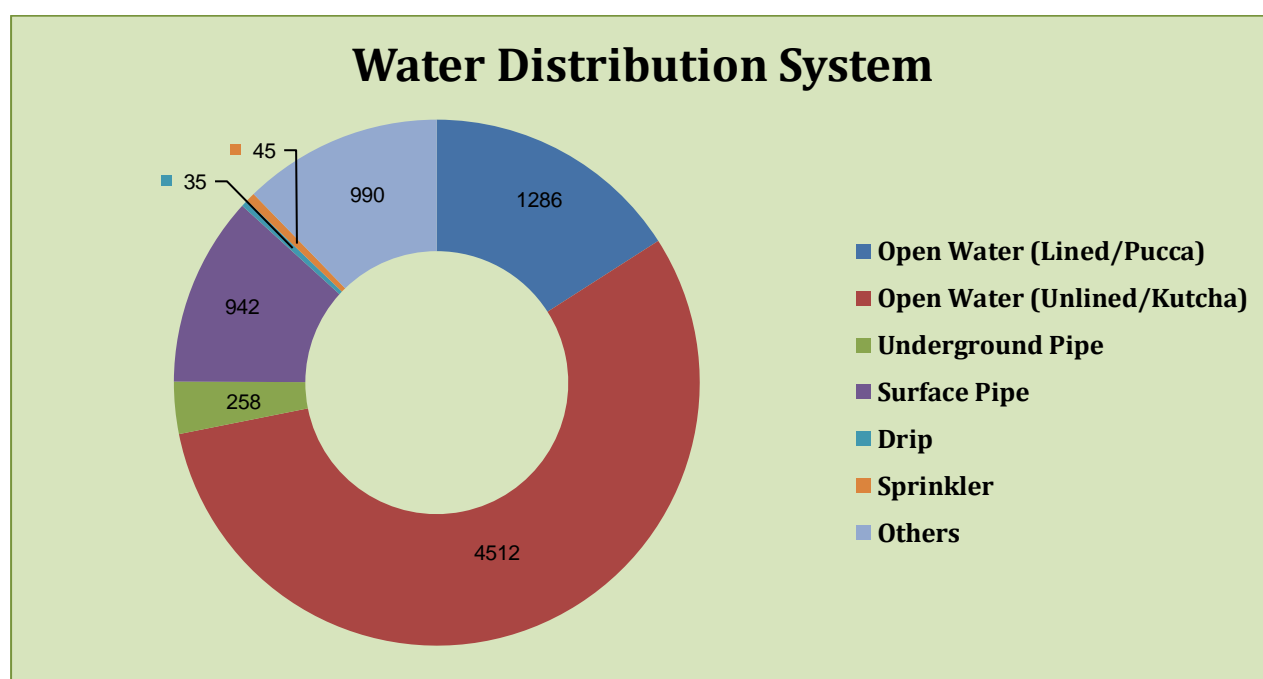
In individually owned surface flow schemes, 77.92% are financed by single source of finance and 22.08% are having more than one source of finance. In single source of finance (2251), majority of individually owned surface flow schemes (68.77%) are financed by own saving only followed by Bank loan (3.33%) and Government fund (2.40%) and which is also shown in the table given below.

Sl. No.	Major Source of Finance (Individual Ownership)	Number	Percentage
1	Bank Loan	75	2.60
2	Govt. Fund	54	1.87
3	Own Savings	1548	53.58
4	Money Lend	32	1.11
5	Others	542	18.76
Total		2251	77.92
6	With two sources of finance	638	22.08
Grand Total		2889	100



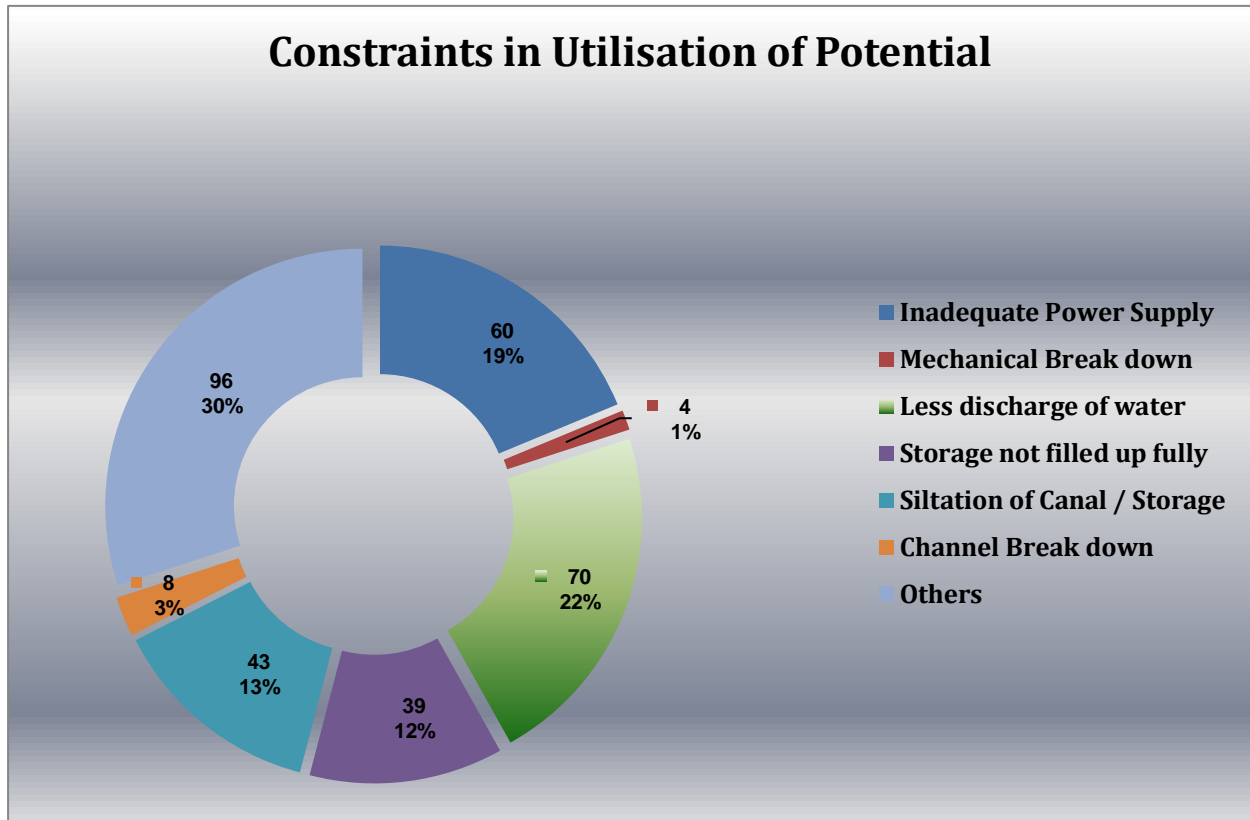
According to water distribution system, which are 'in use' (8068), open water channel (unlined/kutchra) is dominant (55.92%) followed by open water channel (lined/pucca) (15.94%), surface pipe (11.68%) and underground pipe (3.2%).

Sl. No.	Water Distribution System	Number	Percentage
1	Open Water (Lined/Pucca)	1286	15.94
2	Open Water (Unlined/Kutchra)	4512	55.92
3	Underground Pipe	258	3.20
4	Surface Pipe	942	11.68
5	Drip	35	0.43
6	Sprinkler	45	0.56
7	Others	990	12.27
Total		8068	100



In surface flow schemes, which are 'in use' (8068), around (7748), 96.03% schemes are functioning without any constraints in utilisation of potential. Out of remaining (320), 3.97% surface flow schemes having constraints in utilisation, the predominant reasons for underutilization are less discharge of water (21.88%) followed by 'inadequate power supply' (18.75%).

Sl. No.	Constraints in Utilisation of Potential	Number	Percentage
1	Inadequate Power Supply	60	18.75
2	Mechanical Break down	4	1.25
3	Less discharge of water	70	21.88
4	Storage not filled up fully	39	12.19
5	Siltation of Canal / Storage	43	13.43
6	Channel Break down	8	2.5
7	Others	96	30
Total		320	100

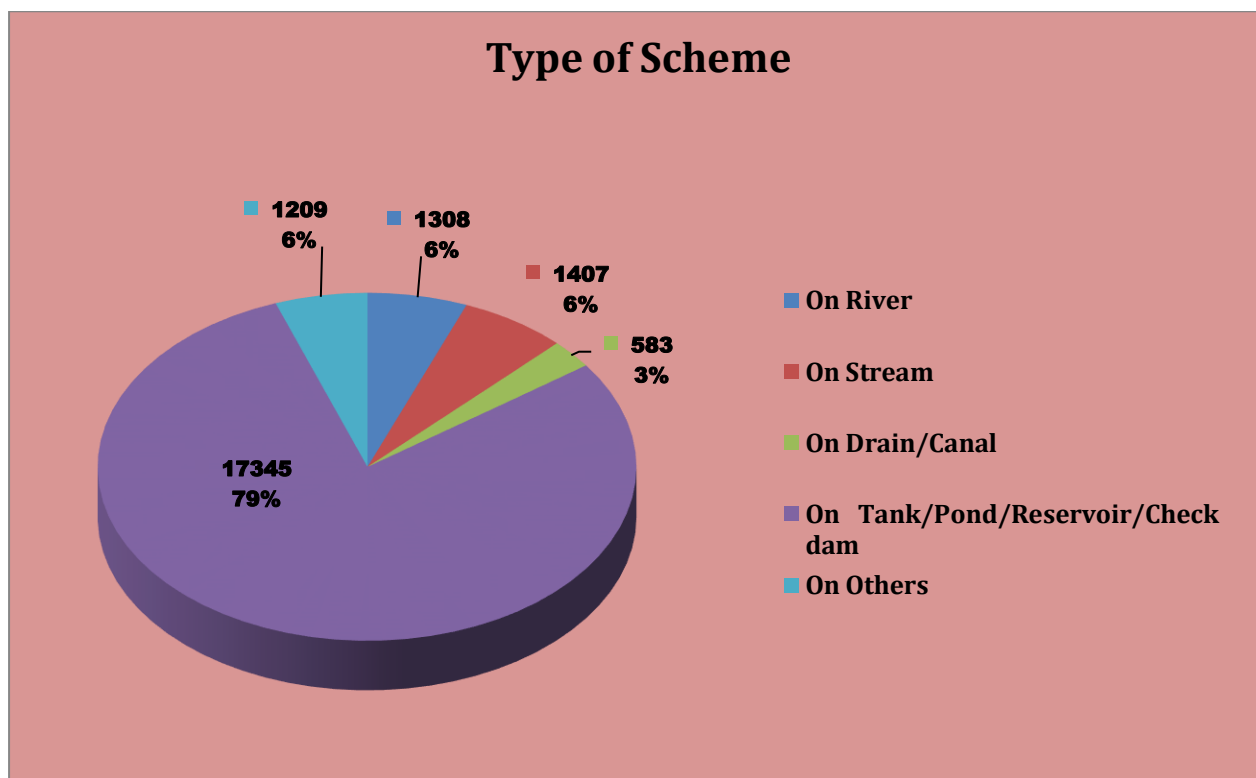


5.4.6 Surface Lift schemes:

In regions where the topography does not permit direct flow irrigation from rivers and streams, water has to be lifted into the irrigation channels. These works are similar to diversion schemes, but in addition pumps are installed and pump houses constructed. These schemes, being costly in operation, are feasible only in areas where a. gravity flow irrigation is not possible b. there is keen demand for irrigation and cultivators are enthusiastic, c. water is available in the streams for at least about 200 days in a year, and d. cheap electric power is available. Installation of diesel operated pump sets for lifting water makes the operation and maintenance cost of these schemes exorbitantly high. However, for lifting small order of discharge by individual cultivators, portable diesel engine pump sets are feasible as they provide greater flexibility and mobility for installation at different points of the water source or sources. In some areas Solar Pumps are also used for lifting water. The CCA of such schemes may go up to 20 hectares.

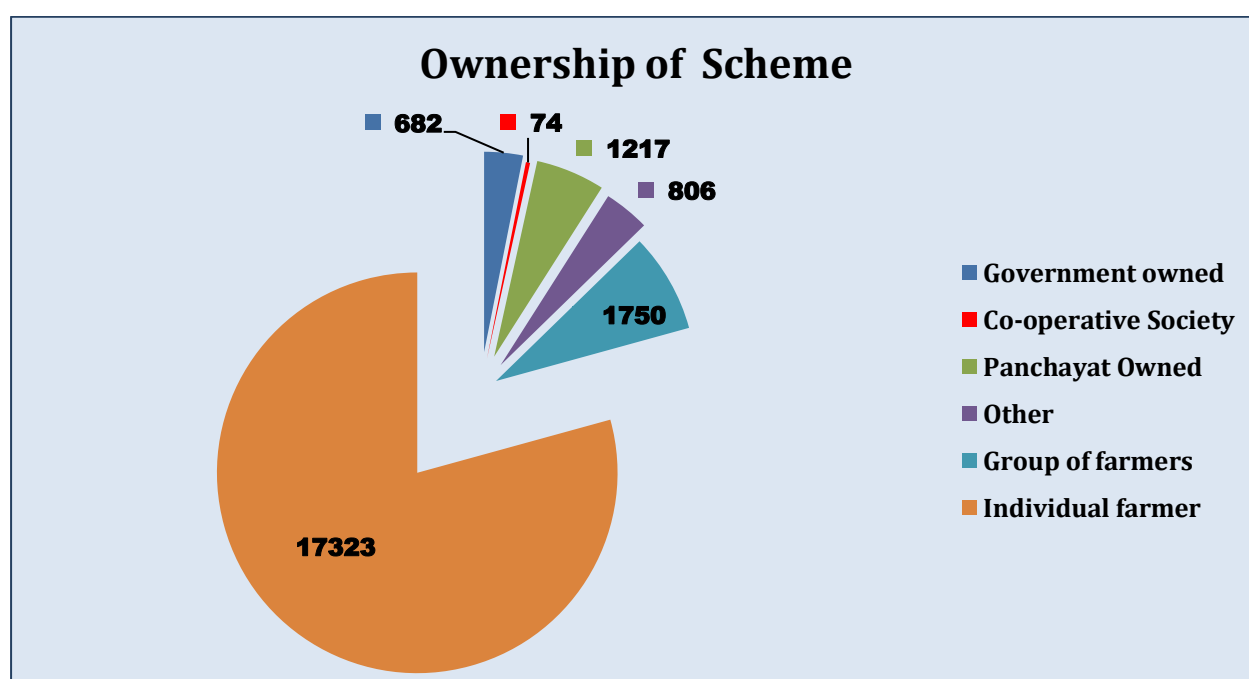
There are total of 21852 surface lift schemes in Kerala irrigating 64171 hectares of land. Majority of these surface lift schemes are located in Malappuram, Kasargod, Idukki, Ernakulam and Kannur. Majority of surface lift schemes are by 'tanks/ ponds/ reservoirs/ check dams' (79.37%) followed by located on stream (6.4%) and on river (6%).

Sl. No.	Type of Scheme	Number	Percentage
1	On River	1308	5.99
2	On Stream	1407	6.44
3	On Drain/Canal	583	2.67
4	On Tank/Pond/Reservoir/Check dam	17345	79.37
5	On Others	1209	5.53
Total		21852	100



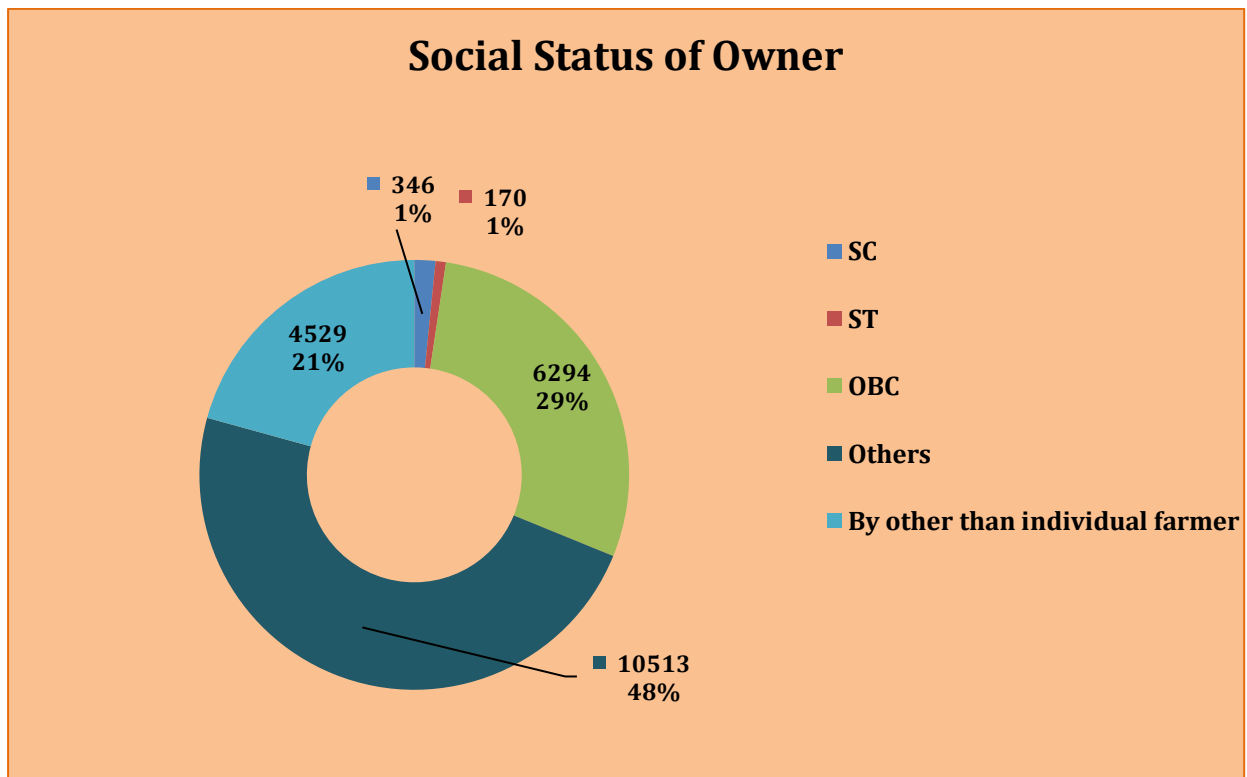
Surface lift schemes are dominantly owned by private entities (87.3%). Out of these, about 90.8% surface lift schemes are owned by individual farmers and only 9.2% are owned by group of farmers. Marginal and small farmers have the largest share in ownership of surface lift schemes (86.5%).

Sl. No.	Ownership of Scheme	Number	Percentage
1	Government owned	682	3.12
2	Co-operative Society	74	0.34
3	Panchayat Owned	1217	5.57
4	Other	806	3.69
Public Owned		2779	12.71
5	Group of farmers	1750	8
6	Individual farmer	17323	79.28
Private total		19073	87.28
Grand Total		21852	100



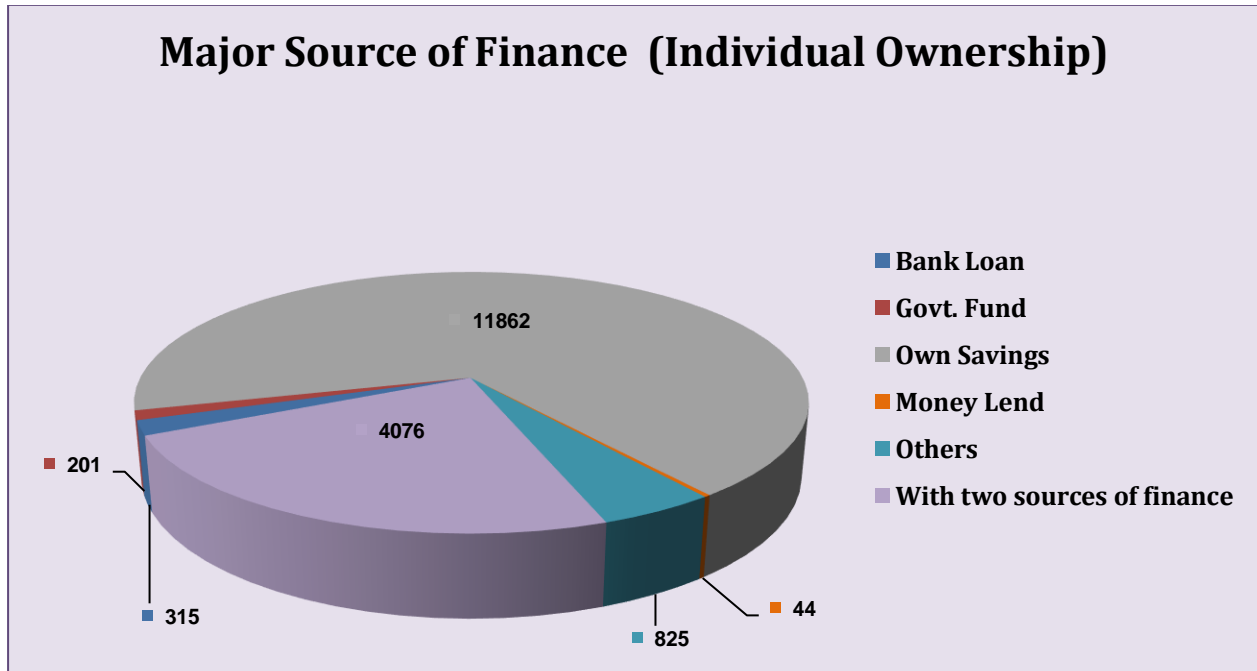
As per the social status of the individual farmers (17323) owning surface lift schemes, 60.70% schemes belong to 'Others' social group followed by Other Backward Castes (OBCs) (36.33%), Scheduled Tribe (0.98%) and Scheduled Caste (1.99%).

Sl. No.	Social Status of Owner	Number	Percentage
1	SC	346	1.58
2	ST	170	0.78
3	OBC	6294	28.8
4	Others	10513	48.11
Total		17323	79.27
5	By other than individual farmer	4529	20.73
Total		21852	100



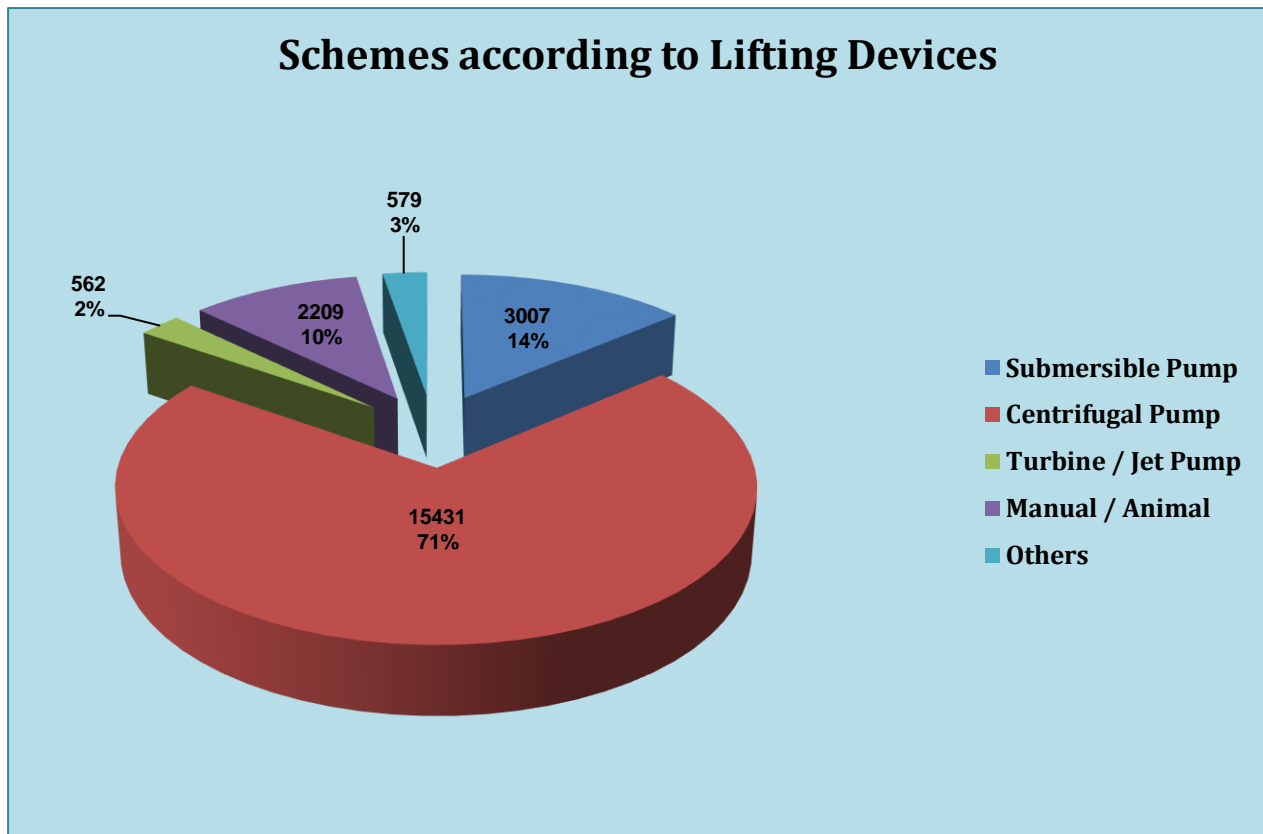
In individually owned surface lift schemes, 76.47% are financed by single source of finance and 23.53% are having more than one source of finance. In single source of finance (13247), majority of schemes (89.54%) are financed by own saving only, Bank loan (2.38%) and Government fund (1.52%).

Sl. No.	Major Source of Finance (Individual Ownership)	Number	Percentage
1	Bank Loan	315	1.82
2	Govt. Fund	201	1.16
3	Own Savings	11862	68.48
4	Money Lend	44	0.25
5	Others	825	4.76
Total		13247	76.47
6	With two sources of finance	4076	23.53
Grand Total		17323	100



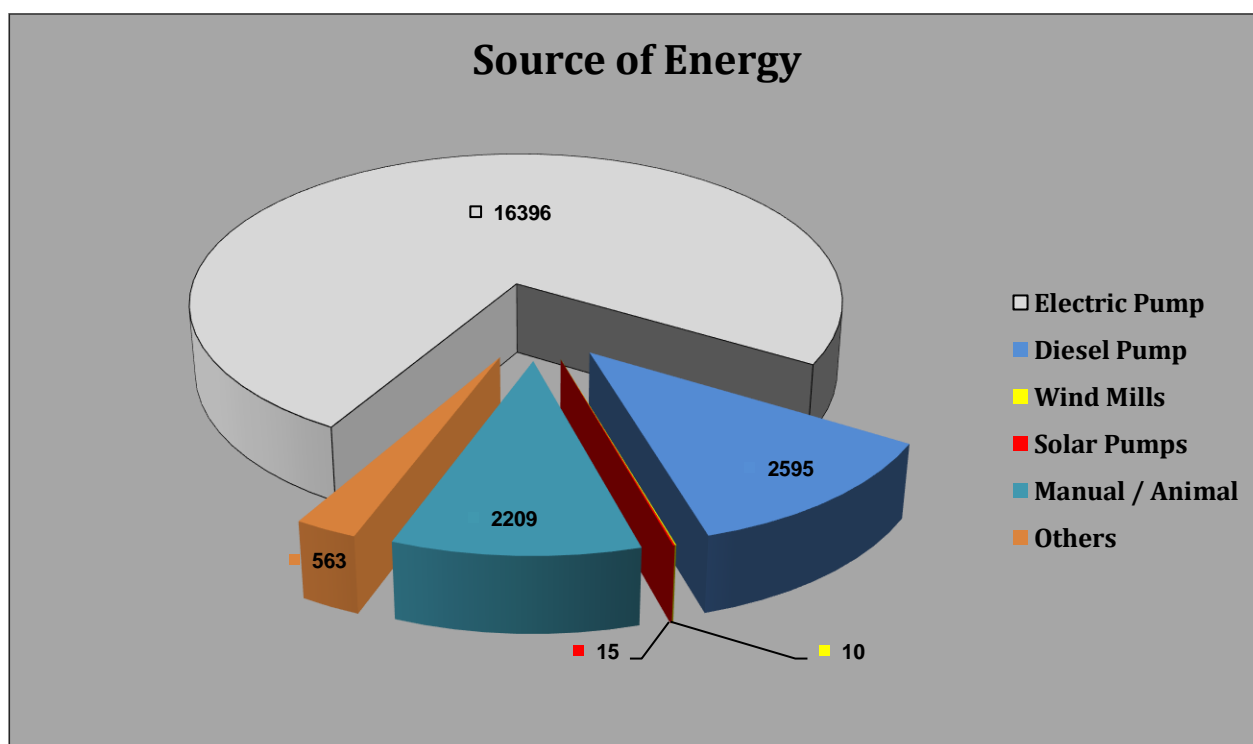
In surface lift schemes, which are in use & Temporary not in use, 70.82% of surface lift schemes have centrifugal pumps followed by submersible pumps (14%) for lifting the water.

Sl. No.	Schemes according to Lifting Devices	Number	Percentage
1	Submersible Pump	3007	13.80
2	Centrifugal Pump	15431	70.82
3	Turbine / Jet Pump	562	2.58
4	Manual / Animal	2209	10.14
5	Others	579	2.66
Total		21788	100



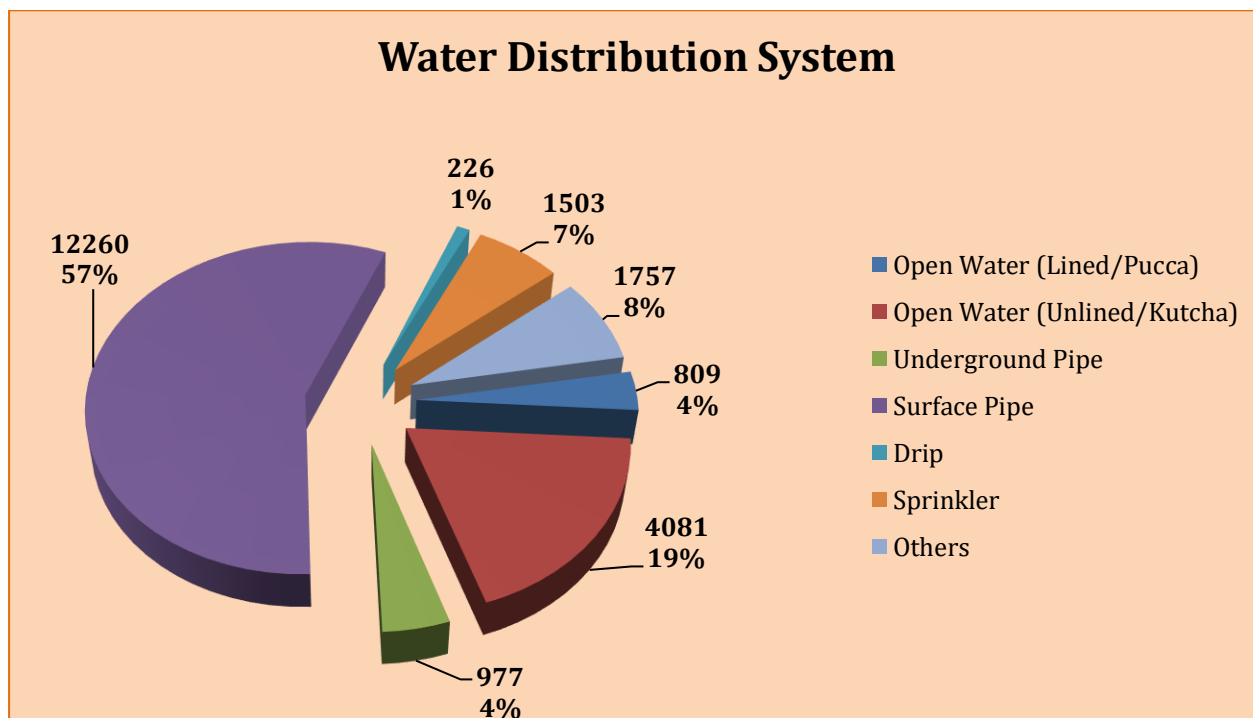
Among all the sources of energy, (in use & Temporary not in use), electricity is dominating (75.25%) followed by diesel (12%).

Sl. No.	Source of Energy	Number	Percentage
1	Electric Pump	16396	75.25
2	Diesel Pump	2595	11.91
3	Wind Mills	10	0.05
4	Solar Pumps	15	0.07
5	Manual / Animal	2209	10.14
6	Others	563	2.58
Total		21788	100



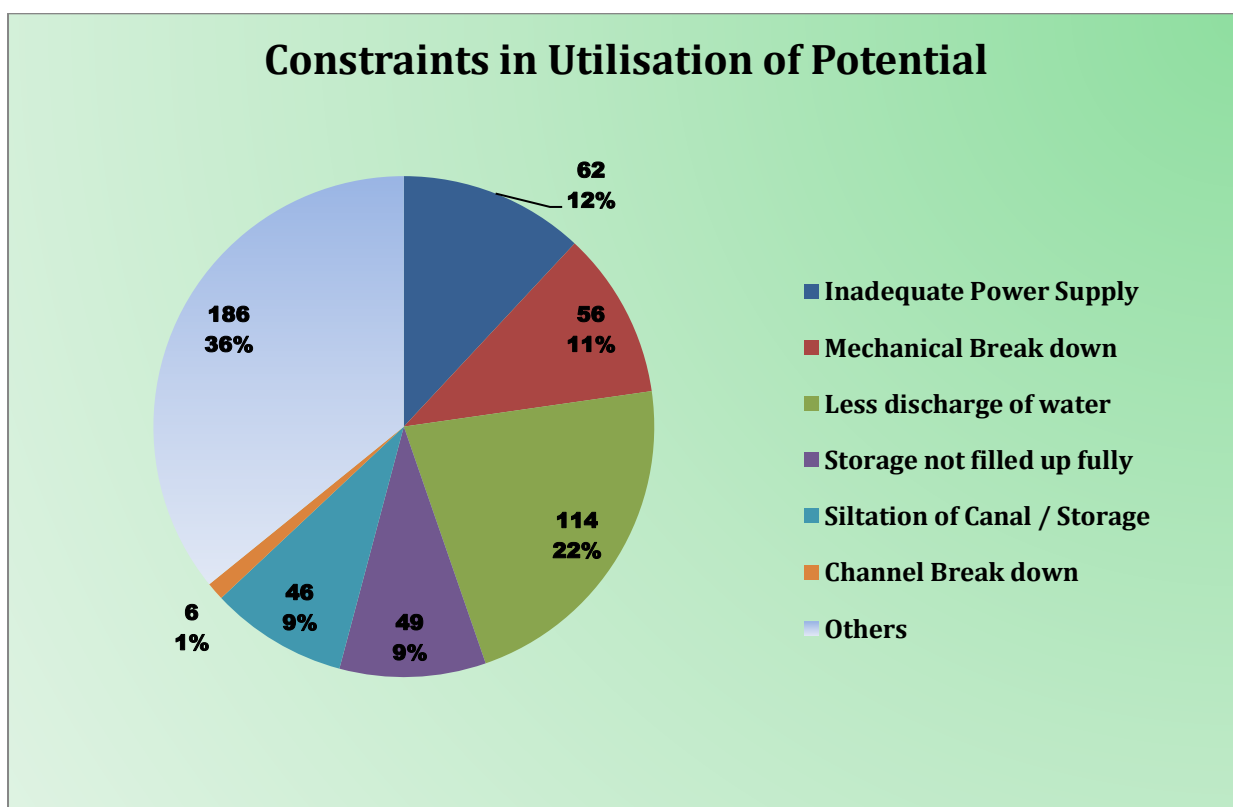
According to water distribution system, in surface lift schemes, which are 'in use' (21613), surface pipe is dominant (56.7%) followed by open water channel (unlined/kutchha) (19%) and sprinkler (6.95%).

Sl. No.	Water Distribution System	Number	Percentage
1	Open Water (Lined/Pucca)	809	3.74
2	Open Water (Unlined/Kutchha)	4081	18.88
3	Underground Pipe	977	4.52
4	Surface Pipe	12260	56.73
5	Drip	226	1.05
6	Sprinkler	1503	6.95
7	Others	1757	8.13
Total		21613	100



In surface lift schemes, which are 'in use' (21613), 97.6% (21094) are functioning without any constraints in utilisation of potential. Out of remaining 2.4% (519) surface lift schemes, less discharge of water (22%), inadequate power supply (12%) and mechanical breakdown (11%) are reported as the main reasons for under utilisation.

Sl. No.	Constraints in Utilisation of Potential	Number	Percentage
1	Inadequate Power Supply	62	11.95
2	Mechanical Break down	56	10.79
3	Less discharge of water	114	21.96
4	Storage not filled up fully	49	9.44
5	Siltation of Canal / Storage	46	8.86
6	Channel Break down	6	1.16
7	Others	186	35.84
Total		519	100



Integrated Tables

TABLE I (A) MINOR IRRIGATION SCHEMES AT A GLANCE

Sl. No.	District	No. of Blocks	No. of Local Bodies	Total Number of Schemes								
				Ground Water					Surface Water			Grand Total (10+13)
				Dug well	Shallow Tube well	Medium Tube well	Deep Tube well	Total (6+7+8+9)	S. Flow Scheme	S. Lift Scheme	Total (11+12)	
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	12	78	1149	662	145	1	1957	629	841	1470	3427
2	ERNAKULAM	14	96	4896	176	332	13	5417	502	2209	2711	8128
3	IDUKKI	8	54	763	9	368	276	1416	365	2284	2649	4065
4	KANNUR	11	81	3687	52	132	28	3899	559	2058	2617	6516
5	KASARGOD	6	41	1635	143	610	452	2840	314	2310	2624	5464
6	KOLLAM	11	73	1281	11	50	9	1351	400	598	998	2349
7	KOTTAYAM	11	77	1208	23	86	9	1326	692	1900	2592	3918
8	KOZHIKODE	12	78	3838	48	84	18	3988	196	1183	1379	5367
9	MALAPPURAM	15	106	9257	331	592	117	10297	1048	3016	4064	14361
10	PALAKKAD	13	95	3121	270	1322	636	5349	948	1634	2582	7931
11	PATHANAMTHITTA	8	57	1633	8	16	4	1661	302	344	646	2307
12	THIRUVANANTHAPURAM	11	78	1583	6	107	4	1700	1429	553	1982	3682
13	THRISSUR	16	94	18036	1407	1428	301	21172	427	1992	2419	23591
14	WAYANAD	4	26	48	0	29	3	80	458	930	1388	1468
Total		152	1034	52135	3146	5301	1871	62453	8269	21852	30121	92574

TABLE I (B) MINOR IRRIGATION SCHEMES FOR RECHARGE OF GROUND WATER ONLY

Sl. No.	District	No. of Blocks	No. of Local Bodies	Total Number of Ground Water Recharge Schemes								
				Ground Water					Surface Water			Grand Total (10+13)
				Dug well	Shallow Tube well	Medium Tube well	Deep Tube well	Total (6+7+8+9)	S. Flow Scheme	S. Lift Scheme	Total (11+12)	
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	12	78	20	0	0	0	20	4	4		28
2	ERNAKULAM	14	96	64	7	2	1	74	48	54	102	176
3	IDUKKI	8	54	1	1	0	0	2	78	12	90	92
4	KANNUR	11	81	4	0	0	0	4	2	5	7	11
5	KASARGOD	6	41	6	2	0	1	9	39	26	65	74
6	KOLLAM	11	73	10	0	0	1	11	6	4	10	21
7	KOTTAYAM	11	77	7	1	0	0	8	4	2	6	14
8	KOZHIKODE	12	78	2	0	1	0	3	13	3	16	19
9	MALAPPURAM	15	106	16	0	3	0	19	25	7	32	51
10	PALAKKAD	13	95	13	20	45	3	81	41	23	64	145
11	PATHANAMTHITTA	8	57	1	0	0	0	1	7	2	9	10
12	THIRUVANANTHAPURAM	11	78	1	0	0	0	1	11	2	13	14
13	THRISSUR	16	94	42	0	4	0	46	16	20	36	82
14	WAYANAD	4	26	0	0	0	0	0	41	9	50	50
Total		152	1034	187	31	55	6	279	335	173	508	787

TABLE II (A) MINOR IRRIGATION SCHEMES, CCA AND IRRIGATION POTENTIAL IN ALL SCHEMES

Sl. No.	District	Ground Water				Surface Water				Total			
		(No. s)	CCA	IPC	IPU	(No. s)	CCA	IPC	IPU	(No. s)	CCA	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	1957	909.35	924.10	912.97	1470	21754.67	24770.69	24382.40	3427	22664.02	25694.79	25295.37
2	ERNAKULAM	5417	2814.38	2850.46	2739.21	2711	12873.99	13201.17	12192.56	8128	15688.37	16051.63	14931.77
3	IDUKKI	1416	1347.17	1350.71	1341.62	2649	9802.86	9811.42	9782.79	4065	11150.03	11162.13	11124.41
4	KANNUR	3899	2268.66	2304.23	2191.42	2617	5520.36	5563.93	5113.55	6516	7789.02	7868.16	7304.97
5	KASARGOD	2840	1713.40	1781.23	1605.05	2624	5234.60	5459.50	5289.12	5464	6948.00	7240.73	6894.17
6	KOLLAM	1351	1424.59	1475.15	1390.41	998	1963.72	2044.38	2010.60	2349	3388.31	3519.53	3401.01
7	KOTTAYAM	1326	1652.42	2081.51	2072.39	2592	18308.43	18669.34	18366.15	3918	19960.85	20750.85	20438.54
8	KOZHIKODE	3988	1826.10	1926.78	1900.28	1379	1856.97	2034.12	2003.00	5367	3683.07	3960.90	3903.28
9	MALAPPURAM	10297	5694.47	5770.19	5536.62	4064	21480.83	22346.12	20302.47	14361	27175.30	28116.31	25839.09
10	PALAKKAD	5349	5700.76	6166.07	6140.47	2582	5866.44	6448.39	6318.20	7931	11567.20	12614.46	12458.67
11	PATHANAMTHITTA	1661	602.41	689.84	635.24	646	3247.08	3594.16	3350.07	2307	3849.49	4284.00	3985.31
12	THIRUVANANTHAPURAM	1700	773.72	843.43	815.89	1982	7178.45	8202.74	7830.90	3682	7952.17	9046.17	8646.79
13	THRISSUR	21172	7040.63	7066.90	7053.62	2419	14226.39	14417.61	14298.18	23591	21267.02	21484.51	21351.80
14	WAYANAD	80	115.31	115.31	114.26	1388	9005.38	9701.07	9309.91	1468	9120.69	9816.38	9424.17
Total		62453	33883.37	35345.91	34449.45	30121	138320.17	146264.64	140549.90	92574	172203.54	181610.55	174999.35

TABLE II (B): MINOR IRRIGATION SCHEMES IN USE, CCA AND IRRIGATION POTENTIAL

Sl. No.	District	Ground Water				Surface Water				Total			
		In Use (No.s)	CCA	IPC	IPU	In Use (No.s)	CCA	IPC	IPU	In Use (Nos)	CCA	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ERNAKULAM	5379	2793.88	2829.92	2733.56	2672	12823.45	13144.80	12142.44	8051	15617.33	15974.72	14876.00
2	ALAPPUZHA	1946	908.67	923.42	912.87	1451	21575.07	24566.09	24214.45	3397	22483.74	25489.51	25127.32
3	THIRUVANANTHAPURAM	1690	767.72	837.27	809.95	1968	7151.46	8169.65	7802.50	3658	7919.18	9006.92	8612.45
4	KANNUR	3890	2266.16	2301.73	2189.85	2585	5442.32	5485.89	5066.99	6475	7708.48	7787.62	7256.84
5	PALAKKAD	5232	5631.26	6091.48	6074.82	2487	5721.96	6303.51	6188.72	7719	11353.22	12394.99	12263.54
6	KASARGOD	2837	1712.53	1780.36	1604.18	2591	5096.74	5319.82	5210.43	5428	6809.27	7100.18	6814.61
7	KOLLAM	1329	1415.21	1465.77	1381.13	980	1944.23	2024.89	1993.93	2309	3359.44	3490.66	3375.06
8	KOZHIKODE	3981	1822.46	1921.91	1897.00	1351	1822.42	1994.57	1967.92	5332	3644.88	3916.48	3864.92
9	THRISSUR	21166	7037.21	7063.48	7050.20	2412	14159.05	14350.27	14297.91	23578	21196.26	21413.75	21348.11
10	IDUKKI	1404	1318.22	1321.76	1313.48	2633	9787.54	9795.64	9767.13	4037	11105.76	11117.40	11080.61
11	KOTTAYAM	1325	1651.44	2080.53	2071.41	2581	18230.38	18591.29	18325.69	3906	19881.82	20671.82	20397.10
12	MALAPPURAM	10283	5691.84	5767.56	5534.29	3990	21064.57	21929.86	19908.98	14273	26756.41	27697.42	25443.27
13	PATHANAMTHITTA	1659	601.87	689.30	634.79	632	3203.96	3550.91	3310.99	2291	3805.83	4240.21	3945.78
14	WAYANAD	79	114.61	114.61	113.56	1348	8756.87	9357.03	9043.27	1427	8871.48	9471.64	9156.83
Total		62200	33733.08	35189.10	34321.09	29681	136780.02	144584.22	139241.35	91881	170513.10	179773.32	173562.44

TABLE II (C) MINOR IRRIGATION SCHEMES TEMPORARILY NOT IN USE, CCA AND IRRIGATION POTENTIAL

Sl. No.	District	Ground Water				Surface Water				Total			
		Temp. not in Use (No. s)	CCA	IPC	IPU	Temp. not in Use (No. s)	CCA	IPC	IPU	Temp. not in Use (Nos)	CCA	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	2	0.22	0.22	0.10	16	159.60	184.60	167.95	18	159.82	184.82	168.05
2	ERNAKULAM	29	6.51	6.55	5.65	19	47.71	52.54	50.12	48	54.22	59.09	55.77
3	IDUKKI	9	28.14	28.14	28.14	11	15.20	15.66	15.66	20	43.34	43.80	43.80
4	KANNUR	5	2.50	2.50	1.57	21	46.56	46.56	46.56	26	49.06	49.06	48.13
5	KASARGOD	3	0.87	0.87	0.87	25	77.27	79.09	78.69	28	78.14	79.96	79.56
6	KOLLAM	22	9.38	9.38	9.28	15	16.67	16.67	16.67	37	26.05	26.05	25.95
7	KOTTAYAM	1	0.98	0.98	0.98	4	40.46	40.46	40.46	5	41.44	41.44	41.44
8	KOZHIKODE	5	2.58	3.28	3.28	21	30.08	35.08	35.08	26	32.66	38.36	38.36
9	MALAPPURAM	10	2.38	2.38	2.33	65	401.99	401.99	393.49	75	404.37	404.37	395.82
10	PALAKKAD	77	63.38	66.05	65.65	68	129.18	129.58	129.48	145	192.56	195.63	195.13
11	PATHANAMTHITTA	2	0.54	0.54	0.45	6	39.08	39.08	39.08	8	39.62	39.62	39.53
12	THIRUVANANTHAPURAM	9	5.85	6.01	5.94	13	26.90	33.00	28.40	22	32.75	39.01	34.34
13	THRISSUR	5	3.42	3.42	3.42	1	0.27	0.27	0.27	6	3.69	3.69	3.69
14	WAYANAD	1	0.70	0.70	0.70	38	236.19	331.72	266.64	39	236.89	332.42	267.34
	Total	180	127.45	131.02	128.36	323	1267.16	1406.30	1308.55	503	1394.61	1537.32	1436.91

TABLE II (D) MINOR IRRIGATION SCHEMES PERMANENTLY NOT IN USE, CCA AND IRRIGATION POTENTIAL LOST

Sl. No.	District	Ground Water			Surface Water			Total		
		Permanently Not in Use (Nos)	CCA	IPC lost	Permanently Not in Use (Nos)	CCA	IPC lost	Permanently Not in Use (Nos)	CCA	IPC lost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	9	0.46	0.46	3	20.00	20.00	12	20.46	20.46
2	ERNAKULAM	9	13.99	13.99	20	2.83	3.83	29	16.82	17.82
3	IDUKKI	3	0.81	0.81	5	0.12	0.12	8	0.93	0.93
4	KANNUR	4	0.00	0.00	11	31.48	31.48	15	31.48	31.48
5	KASARGOD	0	0.00	0.00	8	60.59	60.59	8	60.59	60.59
6	KOLLAM	0	0.00	0.00	3	2.82	2.82	3	2.82	2.82
7	KOTTAYAM	0	0.00	0.00	7	37.59	37.59	7	37.59	37.59
8	KOZHIKODE	2	1.06	1.59	7	4.47	4.47	9	5.53	6.06
9	MALAPPURAM	4	0.25	0.25	9	14.27	14.27	13	14.52	14.52
10	PALAKKAD	40	6.12	8.54	27	15.30	15.30	67	21.42	23.84
11	PATHANAMTHITTA	0	0.00	0.00	8	4.04	4.17	8	4.04	4.17
12	THIRUVANANTHAPURAM	1	0.15	0.15	1	0.09	0.09	2	0.24	0.24
13	THRISSUR	1	0.00	0.00	6	67.07	67.07	7	67.07	67.07
14	WAYANAD	0	0.00	0.00	2	12.32	12.32	2	12.32	12.32
	Total	73	22.84	25.79	117	272.99	274.12	190	295.83	299.91

TABLE III (A) NUMBER OF MINOR IRRIGATION SCHEMES BY COST OF SCHEME - GROUND WATER

Sl. No.	District	No. of Ground Water schemes having cost						Total (3 to 8)
		<Rs. 10000	Rs. 10000 to 50000	Rs. 50000 to 1 Lakhs	Rs. 1 Lakh to 5 Lakhs	Rs. 5 lakh to 10 lakhs	>=Rs. 10 Lakhs	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	78	626	1113	140	0	0	1957
2	ERNAKULAM	1309	3193	690	225	0	0	5417
3	IDUKKI	71	522	558	264	0	1	1416
4	KANNUR	245	2153	1112	383	4	2	3899
5	KASARGOD	296	1422	1050	69	3	0	2840
6	KOLLAM	226	792	236	95	1	1	1351
7	KOTTAYAM	260	819	186	61	0	0	1326
8	KOZHIKODE	238	1860	1344	540	5	1	3988
9	MALAPPURAM	2444	5100	2093	657	2	1	10297
10	PALAKKAD	596	3196	1091	466	0	0	5349
11	PATHANAMTHITTA	179	1068	356	58	0	0	1661
12	THIRUVANANTHAPURAM	171	927	428	174	0	0	1700
13	THRISSUR	4570	12486	3637	477	0	2	21172
14	WAYANAD	1	23	26	30	0	0	80
Total		10684	34187	13920	3639	15	8	62453

TABLE III (B): NUMBER OF MINOR IRRIGATION SCHEMES BY COST OF SCHEME - SURFACE WATER

Sl. No.	District	No. of Surface Water Schemes having Cost						
		<Rs. 10000	Rs. 10000 to 50000	Rs. 50000 to 1 Lakhs	Rs. 1 Lakh to 5Lakhs	Rs. 5 lakh to 10 lakhs	>=Rs. 10 Lakhs	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	130	697	269	290	74	10	1470
2	ERNAKULAM	1386	919	233	143	26	4	2711
3	IDUKKI	105	961	700	796	57	30	2649
4	KANNUR	1083	778	382	322	39	13	2617
5	KASARGOD	1183	985	285	152	9	10	2624
6	KOLLAM	628	253	57	48	8	4	998
7	KOTTAYAM	854	991	337	329	69	12	2592
8	KOZHIKODE	432	467	222	218	28	12	1379
9	MALAPPURAM	1870	1193	394	452	66	89	4064
10	PALAKKAD	1612	502	287	170	11	0	2582
11	PATHANAMTHITTA	322	169	61	68	13	13	646
12	THIRUVANANTHAPURAM	1121	532	193	112	18	6	1982
13	THRISSUR	925	1014	334	138	6	2	2419
14	WAYANAD	174	386	276	443	77	32	1388
Total		11825	9847	4030	3681	501	237	30121

TABLE III (C): NUMBER OF MINOR IRRIGATION SCHEMES BY COST OF SCHEME

Sl. No.	District	Total No. of Minor Irrigation Schemes having Cost						
		<Rs. 10000	Rs. 10000 to 50000	Rs. 50000 to 1 Lakhs	Rs. 1 Lakh to 5 Lakhs	Rs. 5 lakh to 10lakhs	>=Rs. 10 Lakhs	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	208	1323	1382	430	74	10	3427
2	ERNAKULAM	2695	4112	923	368	26	4	8128
3	IDUKKI	176	1483	1258	1060	57	31	4065
4	KANNUR	1328	2931	1494	705	43	15	6516
5	KASARGOD	1479	2407	1335	221	12	10	5464
6	KOLLAM	854	1045	293	143	9	5	2349
7	KOTTAYAM	1114	1810	523	390	69	12	3918
8	KOZHIKODE	670	2327	1566	758	33	13	5367
9	MALAPPURAM	4314	6293	2487	1109	68	90	14361
10	PALAKKAD	2208	3698	1378	636	11	0	7931
11	PATHANAMTHITTA	501	1237	417	126	13	13	2307
12	THIRUVANANTHAPURAM	1292	1459	621	286	18	6	3682
13	THRISSUR	5495	13500	3971	615	6	4	23591
14	WAYANAD	175	409	302	473	77	32	1468
	Total	22509	44034	17950	7320	516	245	92574

TABLE IV: SEASON WISE AREA IRRIGATED BY MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE)**(Area in ha.)**

Sl. No.		Area Irrigated by Ground Water Scheme					Area Irrigated by Surface Water Schemes					Area Irrigated by all Minor Irrigation Schemes				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to 11)	Kharif	Rabi	Perennial	Others	Total (13 to 16)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	ALAPPUZHA	142.01	237.39	381.40	152.17	912.97	10690.49	11704.86	689.96	1297.09	24382.40	10832.50	11942.25	1071.36	1449.26	25295.37
2	ERNAKULAM	375.65	481.01	1640.17	242.38	2739.21	1659.73	2495.05	5493.20	2544.58	12192.56	2035.38	2976.06	7133.37	2786.96	14931.77
3	IDUKKI	44.56	42.93	1195.18	58.95	1341.62	1288.61	1311.59	5906.29	1276.30	9782.79	1333.17	1354.52	7101.47	1335.25	11124.41
4	KANNUR	99.64	167.45	1663.15	261.18	2191.42	440.68	1602.78	2539.14	530.95	5113.55	540.32	1770.23	4202.29	792.13	7304.97
5	KASARGOD	110.83	95.41	1290.36	108.45	1605.05	1238.08	646.41	3076.25	328.38	5289.12	1348.91	741.82	4366.61	436.83	6894.17
6	KOLLAM	337.08	286.08	512.30	254.95	1390.41	709.33	559.05	470.72	271.50	2010.60	1046.41	845.13	983.02	526.45	3401.01
7	KOTTAYAM	462.29	503.30	615.05	491.75	2072.39	8366.19	4977.66	2175.50	2846.80	18366.15	8828.48	5480.96	2790.55	3338.55	20438.54
8	KOZHIKODE	162.00	171.45	1324.46	242.37	1900.28	275.74	348.37	1206.83	172.06	2003.00	437.74	519.82	2531.29	414.43	3903.28
9	MALAPPURAM	354.25	726.81	3752.36	703.20	5536.62	3874.11	5285.44	6916.07	4226.85	20302.47	4228.36	6012.25	10668.43	4930.05	25839.09
10	PALAKKAD	1223.65	2099.47	2611.73	205.62	6140.47	1790.92	2402.37	2019.86	105.05	6318.20	3014.57	4501.84	4631.59	310.67	12458.67
11	PATHANAMTHITTA	129.08	163.46	278.28	64.42	635.24	783.34	1418.16	651.54	497.03	3350.07	912.42	1581.62	929.82	561.45	3985.31
12	THIRUVANANTHAPURAM	153.02	160.94	364.55	137.38	815.89	1375.59	1381.73	4273.78	799.80	7830.90	1528.61	1542.67	4638.33	937.18	8646.79
13	THRISSUR	329.92	332.88	5838.58	552.24	7053.62	2146.30	4467.75	7141.21	542.92	14298.18	2476.22	4800.63	12979.79	1095.16	21351.80
14	WAYANAD	14.01	6.70	78.35	15.20	114.26	3823.11	1968.72	2443.67	1074.41	9309.91	3837.12	1975.42	2522.02	1089.61	9424.17
Total		3937.99	5475.28	21545.92	3490.26	34449.45	38462.22	40569.94	45004.02	16513.72	140549.90	42400.21	46045.22	66549.94	20003.98	174999.35

TABLE V: SEASON WISE AREA IRRIGATED AS SUPPLEMENTARY SOURCE BY MINOR IRRIGATION SCHEMES

Sl. No.	District	Area Irrigated by Ground Water Scheme					Area Irrigated by Surface Water Schemes					Area Irrigated by all Minor Irrigation Schemes				
		Kharif	Rabi	Perennial	Other	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to 11)	Kharif	Rabi	Perennial	Others	Total (13 to 16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	2.11	1.32	3.06	2.05	8.54	487.27	906.73	161.64	94.26	1649.90	489.38	908.05	164.70	96.31	1658.44
2	ERNAKULAM	122.21	164.04	383.94	37.32	707.51	239.95	255.41	1278.62	103.57	1877.55	362.16	419.45	1662.56	140.89	2585.06
3	IDUKKI	0.00	0.00	2.02	0.00	2.02	0.00	2.02	32.59	1.16	35.77	0.00	2.02	34.61	1.16	37.79
4	KANNUR	0.00	8.02	32.28	8.53	48.83	0.10	3.68	39.68	5.06	48.52	0.10	11.70	71.96	13.59	97.35
5	KASARGOD	0.00	0.00	5.33	0.00	5.33	6.45	10.19	73.36	2.28	92.28	6.45	10.19	78.69	2.28	97.61
6	KOLLAM	4.36	4.40	87.80	3.63	100.19	8.74	8.90	8.26	8.50	34.40	13.10	13.30	96.06	12.13	134.59
7	KOTTAYAM	2.54	5.43	8.14	5.05	21.16	7.92	396.16	23.28	10.96	438.32	10.46	401.59	31.42	16.01	459.48
8	KOZHIKODE	26.55	66.94	83.23	27.86	204.58	3.81	33.17	139.66	23.65	200.29	30.36	100.11	222.89	51.51	404.87
9	MALAPPURAM	5.04	0.52	1.69	0.40	7.65	15.75	22.59	195.48	17.62	251.44	20.79	23.11	197.17	18.02	259.09
10	PALAKKAD	550.55	787.84	256.25	10.53	1605.17	1044.68	988.67	328.67	19.20	2381.22	1595.23	1776.51	584.92	29.73	3986.39
11	PATHANAMTHITTA	5.27	5.56	23.10	4.38	38.31	45.57	42.36	59.65	7.97	155.55	50.84	47.92	82.75	12.35	193.86
12	THIRUVANANTHAPURAM	4.44	4.10	11.21	5.24	24.99	125.73	138.13	498.21	157.65	919.72	130.17	142.23	509.42	162.89	944.71
13	THRISSUR	6.60	12.44	208.31	8.72	236.07	371.86	313.50	156.17	4.08	845.61	378.46	325.94	364.48	12.80	1081.68
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	0.50	11.60	13.70	7.90	33.70	0.50	11.60	13.70	7.90	33.70
	Total	729.67	1060.61	1106.36	113.71	3010.35	2358.33	3133.11	3008.97	463.86	8964.27	3088.00	4193.72	4115.33	577.57	11974.62

TABLE VI (A): MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO WATER LIFTING DEVICES-GROUND WATER**(In Number)**

Sl. No.	District	Ground Water Schemes					
		Submersible Pump	Centrifugal Pump	Turbine/ Jet Pump	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1027	792	17	106	6	1948
2	ERNAKULAM	655	4480	78	105	90	5408
3	IDUKKI	756	509	31	93	24	1413
4	KANNUR	1629	2049	85	105	27	3895
5	KASARGOD	1310	1478	18	6	28	2840
6	KOLLAM	499	565	110	152	25	1351
7	KOTTAYAM	410	780	78	48	10	1326
8	KOZHIKODE	1323	2459	65	124	15	3986
9	MALAPPURAM	2594	7186	355	103	55	10293
10	PALAKKAD	1653	3252	49	305	50	5309
11	PATHANAMTHITTA	415	985	160	92	9	1661
12	THIRUVANANTHAPURAM	881	600	80	107	31	1699
13	THRISSUR	2353	18334	366	81	37	21171
14	WAYANAD	45	21	3	11	0	80
	Total	15550	43490	1495	1438	407	62380

TABLE VI (B) MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO WATER LIFTING DEVICES-SURFACE WATER**(In Number)**

Sl. No.	District	Surface Water Schemes (Surface Lift Scheme only)					
		Submersible Pump	Centrifugal Pump	Turbine/ Jet Pump	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	281	509	1	47	2	840
2	ERNAKULAM	220	1686	44	128	115	2193
3	IDUKKI	542	1440	51	153	96	2282
4	KANNUR	290	1140	38	526	55	2049
5	KASARGOD	314	1812	17	124	40	2307
6	KOLLAM	89	143	39	311	15	597
7	KOTTAYAM	206	1549	29	67	47	1898
8	KOZHIKODE	174	824	27	156	2	1183
9	MALAPPURAM	314	2293	149	185	70	3011
10	PALAKKAD	178	1250	26	121	39	1614
11	PATHANAMTHITTA	45	191	21	78	7	342
12	THIRUVANANTHAPURAM	122	173	38	158	62	553
13	THRISSUR	84	1827	23	33	22	1989
14	WAYANAD	148	594	59	122	7	930
	Total	3007	15431	562	2209	579	21788

TABLE VI (C): MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO WATER LIFTING DEVICES - ALL SCHEMES**(In Number)**

Sl. No.	District	All Schemes					
		Submersible Pump	Centrifugal Pump	Turbine/ Jet Pump	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1308	1301	18	153	8	2788
2	ERNAKULAM	875	6166	122	233	205	7601
3	IDUKKI	1298	1949	82	246	120	3695
4	KANNUR	1919	3189	123	631	82	5944
5	KASARGOD	1624	3290	35	130	68	5147
6	KOLLAM	588	708	149	463	40	1948
7	KOTTAYAM	616	2329	107	115	57	3224
8	KOZHIKODE	1497	3283	92	280	17	5169
9	MALAPPURAM	2908	9479	504	288	125	13304
10	PALAKKAD	1831	4502	75	426	89	6923
11	PATHANAMTHITTA	460	1176	181	170	16	2003
12	THIRUVANANTHAPURAM	1003	773	118	265	93	2252
13	THRISSUR	2437	20161	389	114	59	23160
14	WAYANAD	193	615	62	133	7	1010
Total		18557	58921	2057	3647	986	84168

TABLE VII (A): MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO SOURCE OF ENERGY -GROUND WATER**(In Number)**

Sl. No.	District	Ground Water Schemes						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1760	81	0	1	106	0	1948
2	ERNAKULAM	5136	144	6	2	105	15	5408
3	IDUKKI	1280	35	1	1	93	3	1413
4	KANNUR	3655	96	4	0	105	35	3895
5	KASARGOD	2779	28	4	1	6	22	2840
6	KOLLAM	1128	43	4	4	152	20	1351
7	KOTTAYAM	1259	17	0	0	48	2	1326
8	KOZHIKODE	3672	150	1	2	124	37	3986
9	MALAPPURAM	9652	374	4	2	103	158	10293
10	PALAKKAD	4904	88	2	0	305	10	5309
11	PATHANAMTHITTA	1432	60	0	0	92	77	1661
12	THIRUVANANTHAPURAM	1541	45	0	0	107	6	1699
13	THRISSUR	20555	500	11	4	81	20	21171
14	WAYANAD	62	7	0	0	11	0	80
	Total	58815	1668	37	17	1438	405	62380

TABLE VII (B): MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO SOURCE OF ENERGY - SURFACE WATER**(In Number)**

Sl. No.	District	Surface Water Schemes (Surface Lift Scheme only)						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	684	105	0	1	47	3	840
2	ERNAKULAM	1915	120	1	1	128	28	2193
3	IDUKKI	1718	395	0	0	153	16	2282
4	KANNUR	1281	177	0	2	526	63	2049
5	KASARGOD	1840	274	4	4	124	61	2307
6	KOLLAM	198	84	0	0	311	4	597
7	KOTTAYAM	1637	153	0	1	67	40	1898
8	KOZHIKODE	857	141	0	0	156	29	1183
9	MALAPPURAM	2215	413	2	2	185	194	3011
10	PALAKKAD	1313	159	0	1	121	20	1614
11	PATHANAMTHITTA	219	29	0	0	78	16	342
12	THIRUVANANTHAPURAM	214	127	0	1	158	53	553
13	THRISSUR	1863	87	1	0	33	5	1989
14	WAYANAD	442	331	2	2	122	31	930
	Total	16396	2595	10	15	2209	563	21788

TABLE VII (C): MINOR IRRIGATION SCHEMES (IN USE AND TEMPORARILY NOT IN USE) ACCORDING TO SOURCE OF ENERGY -ALL SCHEMES**(In Number)**

Sl. No.	District	All Schemes						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	2444	186	0	2	153	3	2788
2	ERNAKULAM	7051	264	7	3	233	43	7601
3	IDUKKI	2998	430	1	1	246	19	3695
4	KANNUR	4936	273	4	2	631	98	5944
5	KASARGOD	4619	302	8	5	130	83	5147
6	KOLLAM	1326	127	4	4	463	24	1948
7	KOTTAYAM	2896	170	0	1	115	42	3224
8	KOZHIKODE	4529	291	1	2	280	66	5169
9	MALAPPURAM	11867	787	6	4	288	352	13304
10	PALAKKAD	6217	247	2	1	426	30	6923
11	PATHANAMTHITTA	1651	89	0	0	170	93	2003
12	THIRUVANANTHAPURAM	1755	172	0	1	265	59	2252
13	THRISSUR	22418	587	12	4	114	25	23160
14	WAYANAD	504	338	2	2	133	31	1010
	Total	75211	4263	47	32	3647	968	84168

TABLE VIII (A): NUMBER OF SCHEMES TEMPORARILY NOT IN USE AND POTENTIAL PARTIALLY UTILISED/UN-UTILISED - GROUND WATER**(Area in Ha)**

Sl. No.	District	Ground Water Schemes Temporarily not in use due to																											
		Non Availability of Adequate Power				Mechanical Break Down				Less discharge of Water				Non - Availability of Finance				Lack of Maintenance				Any Other Reasons				Total			
		No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	20	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1	ALAPPUZHA	0	0.00	0.00	0.00	1	0.22	0.22	0.10	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.00	0.00	0.00	0	0.00	0.00	0.00	2	0.22	0.22	0.10
2	ERNAKULAM	2	0.55	0.55	0.55	8	2.26	2.26	2.10	9	3.14	3.18	3.00	1	0.00	0.00	0.00	2	0.36	0.36	0.00	7	0.20	0.20	0.00	29	6.51	6.55	5.65
3	IDUKKI	0	0.00	0.00	0.00	2	4.63	4.63	4.63	5	3.24	3.24	3.24	1	0.04	0.04	0.04	1	20.23	20.23	20.23	0	0.00	0.00	0.00	9	28.14	28.14	28.14
4	KANNUR	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.93	0.93	0.00	0	0.00	0.00	0.00	4	1.57	1.57	1.57	5	2.50	2.50	1.57
5	KASARGOD	0	0.00	0.00	0.00	1	0.22	0.22	0.22	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	2	0.65	0.65	0.65	3	0.87	0.87	0.87
6	KOLLAM	0	0.00	0.00	0.00	1	0.12	0.12	0.12	3	3.90	3.90	3.80	1	0.08	0.08	0.08	4	0.00	0.00	0.00	13	5.28	5.28	5.28	22	9.38	9.38	9.28
7	KOTTAYAM	0	0.00	0.00	0.00	1	0.98	0.98	0.98	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.98	0.98	0.98
8	KOZHIKODE	2	0.30	0.30	0.30	1	0.85	0.85	0.85	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	2	1.43	2.13	2.13	5	2.58	3.28	3.28
9	MALAPPURAM	0	0.00	0.00	0.00	2	0.73	0.73	0.73	5	1.13	1.13	1.08	0	0.00	0.00	0.00	1	0.32	0.32	0.32	2	0.20	0.20	0.20	10	2.38	2.38	2.33
10	PALAKKAD	2	0.84	0.84	0.84	3	5.40	5.40	5.00	5	5.60	5.60	5.60	3	10.00	10.00	10.00	27	31.66	31.66	31.66	37	9.88	12.55	12.55	77	63.38	66.05	65.65
11	PATHANAMTHITTA	0	0.00	0.00	0.00	0	0.00	0.00	0.00	2	0.54	0.54	0.45	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	2	0.54	0.54	0.45
12	THIRUVANANTHAPURAM	0	0.00	0.00	0.00	2	1.88	1.88	1.88	2	3.20	3.20	3.20	0	0.00	0.00	0.00	0	0.00	0.00	0.00	5	0.77	0.93	0.86	9	5.85	6.01	5.94
13	THRISSUR	1	0.91	0.91	0.91	1	1.21	1.21	1.21	1	0.81	0.81	0.81	0	0.00	0.00	0.00	1	0.16	0.16	0.16	1	0.33	0.33	0.33	5	3.42	3.42	3.42
14	WAYANAD	1	0.70	0.70	0.70	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.70	0.70	0.70
Total		8	3.30	3.30	3.30	23	18.50	18.50	17.82	32	21.56	21.60	21.18	7	11.05	11.05	10.12	37	52.73	52.73	52.37	73	20.31	23.84	23.57	180	127.45	131.02	128.36

TABLE VIII (B): NUMBER OF SCHEMES TEMPORARILY NOT IN USE AND POTENTIAL PARTIALLY UTILISED/ UN-UTILISED - SURFACE WATER**(AREA IN HA)**

Sl. No	District	Surface Water Schemes Temporarily not in use due to																																			
		Non Availability of Adequate Power				Mechanical Break Down				Less discharge of water				Non - Availability of Finance				Storage Not filled up fully				Siltation of Canal / Storage				Channel break down				Any Other Reasons				Total			
		No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU	No.	CCA	IPC	IPU
1	ALAPPUZHA	0	0.00	0.00	0.00	2	17.40	17.40	16.75	0	0.00	0.00	0.00	2	4.40	4.40	4.40	1	0.40	0.40	0.40	3	106.50	131.50	118.50	0	0.00	0.00	0.00	8	30.90	30.90	27.90	16	159.60	184.60	167.95
2	ERNAKULAM	3	1.61	1.61	1.61	3	28.05	28.05	28.05	3	6.85	6.85	6.85	1	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.00	0.00	0.00	0	0.00	0.00	0.00	8	11.20	16.03	13.61	19	47.71	52.54	50.12
3	IDUKKI	1	0.40	0.40	0.40	1	0.90	0.90	0.90	2	1.08	1.08	1.08	1	0.60	0.60	0.60	1	0.10	0.10	0.10	0	0.00	0.00	0.00	0	0.00	0.00	0.00	5	12.12	12.58	12.58	11	15.20	15.66	15.66
4	KANNUR	1	2.50	2.50	2.50	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	1.61	1.61	1.61	0	0.00	0.00	0.00	19	42.45	42.45	42.45	21	46.56	46.56	46.56
5	KASARGOD	0	0.00	0.00	0.00	3	1.68	1.68	1.68	8	7.50	7.50	7.50	0	0.00	0.00	0.00	5	4.34	6.16	6.16	1	50.00	50.00	50.00	1	3.90	3.90	3.50	7	9.85	9.85	9.85	25	77.27	79.09	78.69
6	KOLLAM	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.80	0.80	0.80	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	14	15.87	15.87	15.87	15	16.67	16.67	16.67
7	KOTTAYAM	2	39.66	39.66	39.66	2	0.80	0.80	0.80	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	4	40.46	40.46	40.46
8	KOZHIKODE	0	0.00	0.00	0.00	1	0.24	0.24	0.24	0	0.00	0.00	0.00	1	0.20	0.20	0.20	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	19	29.64	34.64	34.64	21	30.08	35.08	35.08
9	MALAPPURAM	1	4.40	4.40	4.40	4	26.50	26.50	24.00	5	7.60	7.60	1.60	33	170.11	170.11	170.11	1	6.07	6.07	6.07	0	0.00	0.00	0.00	0	0.00	0.00	0.00	21	187.31	187.31	187.31	65	401.99	401.99	393.49
10	PALAKKAD	3	11.66	11.66	11.66	2	1.00	1.00	1.00	12	12.55	12.55	12.55	1	6.50	6.50	6.50	9	56.87	56.87	56.77	3	0.00	0.00	0.00	1	8.09	8.09	8.09	37	32.51	32.91	32.91	68	129.18	129.58	129.48
11	PATHANAMTHITTA	0	0.00	0.00	0.00	4	9.08	9.08	9.08	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	2	30.00	30.00	30.00	6	39.08	39.08	39.08
12	THIRUVANANTHAPURAM	0	0.00	0.00	0.00	1	2.80	2.80	2.80	7	19.51	23.81	20.71	0	0.00	0.00	0.00	1	2.10	2.10	1.50	1	0.20	0.20	0.00	0	0.00	0.00	0.00	3	2.29	4.09	3.39	13	26.90	33.00	28.40
13	THRISSUR	0	0.00	0.00	0.00	1	0.27	0.27	0.27	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00	1	0.27	0.27	0.27
14	WAYANAD	2	12.41	13.23	12.82	5	30.70	45.89	30.39	6	39.15	45.03	41.93	0	0.00	0.00	0.00	2	0.80	1.00	1.00	9	90.21	153.79	119.33	0	0.00	0.00	0.00	14	62.92	72.78	61.17	38	236.19	331.72	266.64
	Total	13	72.64	73.46	73.05	29	119.42	134.61	115.96	44	95.04	105.22	93.02	39	181.81	181.81	181.81	20	70.68	72.70	72.00	19	248.52	337.10	289.44	2	11.99	11.99	11.59	157	467.06	489.41	471.68	323	1267.16	1406.30	1308.55

TABLE IX (A): NUMBER OF SCHEMES PERMANENTLY NOT IN USE BY TYPE OF REASONS - GROUND WATER

(Area in Ha)

Sl. No.	District	Ground Water Schemes Permanently not in use															
		Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/Medium Irrigation Projects		Other reasons		Total	
		No	IPC Lost	No	IPC Lost	No	IPC Lost	No	IPC Lost	No	IPC Lost	No	IPC Lost	No	IPC Lost	No	IPC Lost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	1	0.34	6	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.12	9	0.46
2	ERNAKULAM	0	0.00	4	1.20	1	8.10	0	0.00	0	0.00	0	0.00	4	4.69	9	13.99
3	IDUKKI	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	0.81	3	0.81
4	KANNUR	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	4	0.00	4	0.00
5	KOZHIKODE	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	1	1.59	2	1.59
6	MALAPPURAM	0	0.00	0	0.00	3	0.00	0	0.00	0	0.00	0	0.00	1	0.25	4	0.25
7	PALAKKAD	2	0.00	1	0.00	0	0.00	0	0.00	1	4.84	0	0.00	36	3.70	40	8.54
8	THIRUVANANTHAPURAM	1	0.15	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.15
9	THRISSUR	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
Total		4	0.49	11	1.20	5	8.10	1	0.00	1	4.84	0	0.00	51	11.16	73	25.79

TABLE IX (B): NUMBER OF SCHEMES PERMANENTLY NOT IN USE BY TYPE OF REASONS - SURFACE WATER

(Area in Ha)

Sl. No.	District	Surface Water Schemes Permanently not in use																	
		Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/Medium Irrigation Projects		Due to sinking		Other reasons		Total	
		No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost	No.	IPC Lost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1	ALAPPUZHA	0	0.00	1	20.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0	1	0.00	3	20.00
2	ERNAKULAM	1	0.00	1	0.00	6	0.06	0	0.00	1	0.00	5	2.77	0	0	6	1.00	20	3.83
3	IDUKKI	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0	4	0.12	5	0.12
4	KANNUR	0	0.00	1	0.00	1	0.45	0	0.00	0	0.00	0	0.00	0	0	9	31.03	11	31.48
5	KASARGOD	1	0.59	0	0.00	1	60.00	1	0.00	0	0.00	0	0.00	0	0	5	0.00	8	60.59
6	KOLLAM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.50	0	0	2	2.32	3	2.82
7	KOTTAYAM	1	0.80	1	0.81	1	2.43	0	0.00	0	0.00	0	0.00	0	0	4	33.55	7	37.59
8	KOZHIKODE	0	0.00	0	0.00	5	3.75	0	0.00	0	0.00	0	0.00	0	0	2	0.72	7	4.47
9	MALAPPURAM	1	1.62	2	0.40	5	6.00	1	6.25	0	0.00	0	0.00	0	0	0	0.00	9	14.27
10	PALAKKAD	0	0.00	4	0.00	1	0.00	1	1.00	0	0.00	1	0.00	0	0	20	14.30	27	15.30
11	PATHANAMTHITTA	0	0.00	2	3.23	3	0.94	0	0.00	0	0.00	0	0.00	0	0	3	0.00	8	4.17
12	THIRUVANANTHAPURAM	0	0.00	0	0.00	1	0.09	0	0.00	0	0.00	0	0.00	0	0	0	0.00	1	0.09
13	THRISSUR	1	0.80	2	51.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0	2	15.27	6	67.07
14	WAYANAD	0	0.00	1	2.32	1	10.00	0	0.00	0	0.00	0	0.00	0	0	0	0.00	2	12.32
	Total	5	3.81	15	77.76	28	83.72	3	7.25	1	0.00	7	3.27	0	0	58	98.31	117	274.12

TABLE X (A): NUMBER OF UNDER UTILISED IN USE SCHEMES AND UNDER UTILISED POTENTIAL - GROUND WATER**(Area in Ha)**

Sl. No.	District	Constraints in utilisation potential of Ground Water Schemes													
		Non Availability of Adequate Power		Mechanical Break Down		Less discharge of Water		Non - Availability of Finance		Lack of Maintenance		Others		Total	
		No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ALAPPUZHA	0	0.00	29	0.98	29	0.05	1	0.00	0	0.00	11	0.00	70	1.03
2	ERNAKULAM	0	0.00	5	0.10	59	0.98	2	0.00	4	0.00	170	9.41	240	10.49
3	IDUKKI	2	0.00	2	0.00	3	0.00	0	0.00	0	0.00	0	0.00	7	0.00
4	KANNUR	0	0.00	2	0.54	39	5.93	1	0.17	1	0.06	7	0.54	50	7.24
5	KASARGOD	34	1.01	0	0.00	0	0.00	0	0.00	2	0.02	10	0.11	46	1.14
6	KOLLAM	3	0.48	2	0.00	28	8.56	1	0.00	3	0.12	25	37.29	62	46.45
7	KOTTAYAM	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	1	0.00	2	0.00
8	KOZHIKODE	2	0.00	39	1.98	11	0.35	0	0.00	1	0.00	18	0.20	71	2.53
9	MALAPPURAM	5	0.36	4	0.03	6	0.20	0	0.00	0	0.00	202	11.91	217	12.50
10	PALAKKAD	0	0.00	1	0.00	10	0.55	0	0.00	0	0.00	6	0.00	17	0.55
11	PATHANAMTHITTA	0	0.00	2	0.10	10	0.43	0	0.00	0	0.00	4	0.26	16	0.79
12	THIRUVANANTHAPURAM	0	0.00	1	0.06	9	0.70	10	1.08	0	0.00	4	0.04	24	1.88
13	THRISSUR	0	0.00	0	0.00	3	0.00	0	0.00	0	0.00	0	0.00	3	0.00
14	WAYANAD	8	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	8	0.00
	Total	54	1.85	87	3.79	208	17.75	15	1.25	11	0.20	458	59.76	833	84.60

TABLE X (B): NUMBER OF UNDER UTILISED IN USE SCHEMES AND UNDER UTILISED POTENTIAL - SURFACE WATER**(Area in Ha)**

Sl. No	District	Constraints in utilisation potential of Surface Water Schemes															
		Non Availability of Adequate Power		Mechanical Break Down		Less discharge of Water		Storage not filled up fully		Siltation of canal/storage		Breakdown of channels		Others		Total	
		No	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised	No.	Potential under Utilised
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	ALAPPUZHA	3	0.00	1	0.00	5	0.00	6	0.00	5	14.00	1	0.00	90	0.00	111	14.00
2	ERNAKULAM	20	0.00	4	0.00	22	3.18	8	0.40	50	5.46	1	0.00	19	11.43	124	20.47
3	IDUKKI	11	2.80	6	0.00	29	1.16	17	0.00	0	0.00	0	0.00	13	1.60	76	5.56
4	KANNUR	0	0.00	1	0.00	26	5.15	0	0.00	2	0.70	1	0.00	16	14.40	46	20.25
5	KASARGOD	5	0.09	1	0.00	2	0.00	0	0.00	1	0.00	1	0.00	8	0.06	18	0.15
6	KOLLAM	6	0.00	21	4.08	6	0.24	0	0.00	0	0.00	4	0.00	16	0.20	53	4.52
7	KOTTAYAM	3	0.00	1	0.00	2	0.00	1	0.00	1	0.00	0	0.00	5	0.00	13	0.00
8	KOZHIKODE	16	0.00	13	0.00	5	0.00	7	0.00	0	0.00	1	0.00	19	0.00	61	0.00
9	MALAPPURAM	23	5.33	3	0.05	1	14.14	4	14.91	3	0.50	0	0.00	33	182.44	67	217.37
10	PALAKKAD	2	0.00	4	0.50	16	3.63	2	0.00	10	1.20	1	0.00	12	0.00	47	5.33
11	PATHANAMTHITTA	0	0.00	0	0.00	7	0.00	15	0.00	0	0.00	0	0.00	13	0.21	35	0.21
12	THIRUVANANTHAPURAM	25	44.68	2	0.55	46	49.56	18	34.62	9	14.50	2	0.00	34	88.00	136	231.91
13	THRISSUR	7	0.00	0	0.00	13	0.00	2	0.00	0	0.00	0	0.00	1	0.00	23	0.00
14	WAYANAD	1	0.00	3	0.00	4	0.40	8	2.04	8	10.31	2	2.01	3	0.40	29	15.16
	Total	122	52.90	60	5.18	184	77.46	88	51.97	89	46.67	14	2.01	282	298.74	839	534.93

TABLE XI (A): MINOR IRRIGATION SCHEMES ACCORDING TO OWNERSHIP TYPE FOR GROUND WATER SCHEME**(In Number)**

Sl. No	District	Ground water schemes owned by								
		Public					Private			Grand Total (7+10)
		Govt.	Co-op Society	Panchayat	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	7	0	51	9	67	162	1728	1890	1957
2	ERNAKULAM	22	5	72	237	336	64	5017	5081	5417
3	IDUKKI	2	6	29	21	58	13	1345	1358	1416
4	KANNUR	5	3	109	26	143	91	3665	3756	3899
5	KASARGOD	20	3	6	34	63	57	2720	2777	2840
6	KOLLAM	2	3	38	31	74	7	1270	1277	1351
7	KOTTAYAM	0	0	3	29	32	4	1290	1294	1326
8	KOZHIKODE	1	0	95	32	128	46	3814	3860	3988
9	MALAPPURAM	22	7	67	155	251	105	9941	10046	10297
10	PALAKKAD	7	3	350	63	423	258	4668	4926	5349
11	PATHANAMTHITTA	2	0	1	4	7	2	1652	1654	1661
12	THIRUVANANTHAPURAM	1	0	2	8	11	46	1643	1689	1700
13	THRISSUR	15	5	19	60	99	73	21000	21073	21172
14	WAYANAD	24	0	9	1	34	0	46	46	80
	Total	130	35	851	710	1726	928	59799	60727	62453

TABLE XI (B): MINOR IRRIGATION SCHEMES ACCORDING TO OWNERSHIP TYPE FOR SURFACE WATER SCHEME**(In Number)**

Sl. No.	District	Surface water schemes owned by								
		Public					Private			Grand Total (7 + 10)
		Govt.	Co-op Society	Panchayath	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	202	2	114	30	348	421	701	1122	1470
2	ERNAKULAM	75	7	272	171	525	196	1990	2186	2711
3	IDUKKI	164	9	113	129	415	87	2147	2234	2649
4	KANNUR	76	2	333	80	491	299	1827	2126	2617
5	KASARGOD	123	6	118	117	364	316	1944	2260	2624
6	KOLLAM	10	7	49	50	116	115	767	882	998
7	KOTTAYAM	80	6	100	44	230	486	1876	2362	2592
8	KOZHIKODE	76	5	66	47	194	75	1110	1185	1379
9	MALAPPURAM	235	22	618	383	1258	375	2431	2806	4064
10	PALAKKAD	82	11	350	162	605	351	1626	1977	2582
11	PATHANAMTHITTA	157	12	96	64	329	34	283	317	646
12	THIRUVANANTHAPURAM	29	10	477	86	602	436	944	1380	1982
13	THRISSUR	119	35	247	58	459	211	1749	1960	2419
14	WAYANAD	247	9	174	61	491	80	817	897	1388
	Total	1675	143	3127	1482	6427	3482	20212	23694	30121

TABLE XII (A): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO HOLDING SIZE OF OWNER -GROUND WATER**(In Number)**

Sl. No.	District	No. of Ground Water Schemes owned by farmers					
		Marginal (0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4ha)	Medium (4-10ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1589	116	11	10	2	1728
2	ERNAKULAM	4422	437	97	51	10	5017
3	IDUKKI	846	310	113	53	23	1345
4	KANNUR	3289	297	62	14	3	3665
5	KASARGOD	1969	464	199	82	6	2720
6	KOLLAM	1103	118	27	13	9	1270
7	KOTTAYAM	1042	189	44	15	0	1290
8	KOZHIKODE	3347	367	76	21	3	3814
9	MALAPPURAM	8462	1066	329	68	16	9941
10	PALAKKAD	3263	958	341	84	22	4668
11	PATHANAMTHITTA	1514	107	25	3	3	1652
12	THIRUVANANTHAPURAM	1519	86	28	7	3	1643
13	THRISSUR	19977	768	132	103	20	21000
14	WAYANAD	17	17	9	3	0	46
	Total	52359	5300	1493	527	120	59799

TABLE XII (B): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO HOLDING SIZE OF OWNER -SURFACE WATER**(In Number)**

Sl. No.	District	No. of Surface Water Schemes owned by farmers					
		Marginal (0-1ha)	Small (1-2 ha)	Semi-Medium (2- 4ha)	Medium (4-10ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	581	60	32	15	13	701
2	ERNAKULAM	1338	411	166	59	16	1990
3	IDUKKI	991	582	320	152	102	2147
4	KANNUR	1348	302	124	37	16	1827
5	KASARGOD	1293	397	170	69	15	1944
6	KOLLAM	599	104	41	14	9	767
7	KOTTAYAM	1252	432	134	43	15	1876
8	KOZHIKODE	828	199	62	17	4	1110
9	MALAPPURAM	1723	462	173	60	13	2431
10	PALAKKAD	928	320	236	103	39	1626
11	PATHANAMTHITTA	242	21	14	6	0	283
12	THIRUVANANTHAPURAM	751	101	60	20	12	944
13	THRISSUR	1539	153	34	17	6	1749
14	WAYANAD	223	276	200	99	19	817
	Total	13636	3820	1766	711	279	20212

TABLE XII(C): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO HOLDING SIZE OF OWNER – ALL SCHEMES**(In Number)**

Sl. No.	District	Total number of Minor Irrigation Scheme owned by farmers					
		Marginal (0-1ha)	Small (1-2 ha)	Semi-Medium (2- 4ha)	Medium (4-10ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	2170	176	43	25	15	2429
2	ERNAKULAM	5760	848	263	110	26	7007
3	IDUKKI	1837	892	433	205	125	3492
4	KANNUR	4637	599	186	51	19	5492
5	KASARGOD	3262	861	369	151	21	4664
6	KOLLAM	1702	222	68	27	18	2037
7	KOTTAYAM	2294	621	178	58	15	3166
8	KOZHIKODE	4175	566	138	38	7	4924
9	MALAPPURAM	10185	1528	502	128	29	12372
10	PALAKKAD	4191	1278	577	187	61	6294
11	PATHANAMTHITTA	1756	128	39	9	3	1935
12	THIRUVANANTHAPURAM	2270	187	88	27	15	2587
13	THRISSUR	21516	921	166	120	26	22749
14	WAYANAD	240	293	209	102	19	863
	TOTAL	65995	9120	3259	1238	399	80011

TABLE XIII (A): MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF INDIVIDUAL OWNER - GROUND WATER**(In Number)**

Sl. No.	District	No. of Ground Water Schemes						
		Social Status of individual Owner					Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7+8)
		Schedule Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	61	9	351	1307	1728	229	1957
2	ERNAKULAM	104	16	979	3918	5017	400	5417
3	IDUKKI	42	24	258	1021	1345	71	1416
4	KANNUR	66	13	1878	1708	3665	234	3899
5	KASARGOD	61	76	996	1587	2720	120	2840
6	KOLLAM	34	9	456	771	1270	81	1351
7	KOTTAYAM	20	12	99	1159	1290	36	1326
8	KOZHIKODE	77	19	1989	1729	3814	174	3988
9	MALAPPURAM	197	38	8021	1685	9941	356	10297
10	PALAKKAD	198	43	2553	1874	4668	681	5349
11	PATHANAMTHITTA	50	4	251	1347	1652	9	1661
12	THIRUVANANTHAPURAM	41	23	677	902	1643	57	1700
13	THRISSUR	306	64	7828	12802	21000	172	21172
14	WAYANAD	1	2	11	32	46	34	80
	Total	1258	352	26347	31842	59799	2654	62453

TABLE XIII(B): MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF INDIVIDUAL OWNER – SURFACE WATER**(In Number)**

Sl. No.	District	No. of Surface Water Schemes						
		Social Status of individual Owner					Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7+8)
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	24	3	170	504	701	769	1470
2	ERNAKULAM	41	2	364	1583	1990	721	2711
3	IDUKKI	59	28	392	1668	2147	502	2649
4	KANNUR	26	15	867	919	1827	790	2617
5	KASARGOD	28	60	544	1312	1944	680	2624
6	KOLLAM	26	4	333	404	767	231	998
7	KOTTAYAM	29	1	269	1577	1876	716	2592
8	KOZHIKODE	17	6	548	539	1110	269	1379
9	MALAPPURAM	46	8	1846	531	2431	1633	4064
10	PALAKKAD	69	19	681	857	1626	956	2582
11	PATHANAMTHITTA	6	0	23	254	283	363	646
12	THIRUVANANTHAPURAM	36	11	229	668	944	1038	1982
13	THRISSUR	17	7	892	833	1749	670	2419
14	WAYANAD	22	48	104	643	817	571	1388
	Total	446	212	7262	12292	20212	9909	30121

TABLE XIII (C): MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF INDIVIDUAL OWNER - ALL SCHEMES**(In Number)**

Sl. No.	District	Total No. of Minor Irrigation Schemes						
		Social Status of individual Owner					Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7+8)
		ScheduledCaste	Scheduled Tribe	OBC	Others	Total (3 to 6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	85	12	521	1811	2429	998	3427
2	ERNAKULAM	145	18	1343	5501	7007	1121	8128
3	IDUKKI	101	52	650	2689	3492	573	4065
4	KANNUR	92	28	2745	2627	5492	1024	6516
5	KASARGOD	89	136	1540	2899	4664	800	5464
6	KOLLAM	60	13	789	1175	2037	312	2349
7	KOTTAYAM	49	13	368	2736	3166	752	3918
8	KOZHIKODE	94	25	2537	2268	4924	443	5367
9	MALAPPURAM	243	46	9867	2216	12372	1989	14361
10	PALAKKAD	267	62	3234	2731	6294	1637	7931
11	PATHANAMTHITTA	56	4	274	1601	1935	372	2307
12	THIRUVANANTHAPURAM	77	34	906	1570	2587	1095	3682
13	THRISSUR	323	71	8720	13635	22749	842	23591
14	WAYANAD	23	50	115	675	863	605	1468
	Total	1704	564	33609	44134	80011	12563	92574

TABLE XIII (D): MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF FEMALE OWNER - GROUND WATER**(In Number)**

Sl. No.	District	No. of Ground Water Scheme owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	9	1	90	232	332
2	ERNAKULAM	14	3	173	614	804
3	IDUKKI	5	6	34	117	162
4	KANNUR	18	6	538	396	958
5	KASARGOD	11	21	251	356	639
6	KOLLAM	7	2	134	174	317
7	KOTTAYAM	1	0	8	138	147
8	KOZHIKODE	11	4	388	279	682
9	MALAPPURAM	20	7	1041	322	1390
10	PALAKKAD	80	17	811	355	1263
11	PATHANAMTHITTA	27	2	91	300	420
12	THIRUVANANTHAPURAM	13	11	260	288	572
13	THRISSUR	47	10	1781	2753	4591
14	WAYANAD	0	0	4	3	7
	Total	263	90	5604	6327	12284

TABLE XIII(E): MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF FEMALE OWNER -SURFACE WATER**(In Number)**

Sl. No.	District	No. of Surface Water Scheme owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	2	1	37	104	144
2	ERNAKULAM	3	1	45	160	209
3	IDUKKI	5	6	37	107	155
4	KANNUR	2	2	238	141	383
5	KASARGOD	2	15	70	197	284
6	KOLLAM	8	0	74	61	143
7	KOTTAYAM	4	0	33	189	226
8	KOZHIKODE	2	1	93	67	163
9	MALAPPURAM	11	0	177	84	272
10	PALAKKAD	15	6	180	158	359
11	PATHANAMTHITTA	3	0	4	31	38
12	THIRUVANANTHAPURAM	7	6	47	141	201
13	THRISSUR	2	0	178	158	338
14	WAYANAD	3	10	12	64	89
	Total	69	48	1225	1662	3004

TABLE XIII(F) :MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF FEMALE OWNER - ALL SCHEMES**(In Number)**

Sl. No.	District	Total No. of Minor Irrigation Schemes				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	11	2	127	336	476
2	ERNAKULAM	17	4	218	774	1013
3	IDUKKI	10	12	71	224	317
4	KANNUR	20	8	776	537	1341
5	KASARGOD	13	36	321	553	923
6	KOLLAM	15	2	208	235	460
7	KOTTAYAM	5	0	41	327	373
8	KOZHIKODE	13	5	481	346	845
9	MALAPPURAM	31	7	1218	406	1662
10	PALAKKAD	95	23	991	513	1622
11	PATHANAMTHITTA	30	2	95	331	458
12	THIRUVANANTHAPURAM	20	17	307	429	773
13	THRISSUR	49	10	1959	2911	4929
14	WAYANAD	3	10	16	67	96
	Total	332	138	6829	7989	15288

TABLE XIII(I):MINOR IRRIGATION SCHEMES ACCORDING TO SOCIAL STATUS OF TRANSGENDER OWNER - ALL SCHEMES**(In Number)**

Sl. No.	District	All Schemes				
		Social Status of Owner				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	1	0	1	2	4
2	ERNAKULAM	1	0	3	6	10
3	IDUKKI	1	0	0	0	1
4	KANNUR	4	0	4	6	14
5	KASARGOD	2	0	0	4	6
6	KOLLAM	1	0	4	1	6
7	KOTTAYAM	0	0	0	1	1
8	KOZHIKODE	2	1	0	0	3
9	MALAPPURAM	17	0	15	7	39
10	PALAKKAD	1	0	1	5	7
11	PATHANAMTHITTA	0	0	2	1	3
12	THIRUVANANTHAPURAM	0	1	2	2	5
13	THRISSUR	4	2	9	14	29
14	WAYANAD	0	0	0	0	0
	Total	34	4	41	49	128

TABLE XIV (A): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO SOURCE OF FINANCE - GROUND WATER**(In Number)**

Sl. No.	District	Ground Water Schemes															
		With Single Source of Finance						With two Sources of Finance									Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to 15)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
1	ALAPPUZHA	0	3	563	2	7	575	65	79	21	0	0	0	988	1153	1728	
2	ERNAKULAM	101	129	3391	22	482	4125	80	72	193	3	1	0	543	892	5017	
3	IDUKKI	10	8	852	3	15	888	20	135	6	1	0	0	295	457	1345	
4	KANNUR	154	15	2570	1	184	2924	193	320	29	14	2	0	183	741	3665	
5	KASARGOD	33	3	2085	2	26	2149	145	182	3	0	2	1	238	571	2720	
6	KOLLAM	48	17	746	3	37	851	57	230	39	8	7	7	71	419	1270	
7	KOTTAYAM	23	13	984	0	63	1083	30	89	0	6	3	0	79	207	1290	
8	KOZHIKODE	43	24	1910	6	7	1990	159	903	12	17	2	0	731	1824	3814	
9	MALAPPURAM	68	32	7797	42	249	8188	428	620	69	64	13	0	559	1753	9941	
10	PALAKKAD	116	23	2276	13	601	3029	167	53	32	1	4	0	1382	1639	4668	
11	PATHANAMTHITTA	39	17	864	15	60	995	34	458	22	49	1	2	91	657	1652	
12	THIRUVANANTHAPURAM	47	68	684	7	35	841	127	483	36	31	8	9	108	802	1643	
13	THRISSUR	84	26	16364	19	36	16529	378	58	106	5	12	1	3911	4471	21000	
14	WAYANAD	0	0	15	0	1	16	0	10	0	0	0	0	20	30	46	
	Total	766	378	41101	135	1803	44183	1883	3692	568	199	55	20	9199	15616	59799	

TABLE XIV (B): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO SOURCE OF FINANCE - SURFACE WATER**(In Number)**

Sl. No.	District	Surface Water Schemes															
		With Single Source of Finance						With two Sources of Finance									Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to 15)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
1	ALAPPUZHA	0	2	229	4	3	238	42	20	6	0	1	0	394	463	701	
2	ERNAKULAM	34	23	1353	4	197	1611	49	14	4	0	0	0	312	379	1990	
3	IDUKKI	11	44	1466	1	23	1545	19	65	18	2	0	0	498	602	2147	
4	KANNUR	43	13	1461	0	104	1621	108	36	11	13	0	0	38	206	1827	
5	KASARGOD	10	6	1535	2	77	1630	144	41	33	1	3	0	92	314	1944	
6	KOLLAM	19	7	538	1	61	626	25	76	9	2	0	0	29	141	767	
7	KOTTAYAM	119	5	1281	2	52	1459	59	100	3	0	2	0	253	417	1876	
8	KOZHIKODE	1	7	757	0	31	796	18	61	11	2	0	0	222	314	1110	
9	MALAPPURAM	29	38	1796	21	311	2195	33	50	39	6	2	0	106	236	2431	
10	PALAKKAD	32	17	902	1	191	1143	76	9	15	1	1	0	381	483	1626	
11	PATHANAMTHITTA	7	32	156	0	8	203	1	64	2	2	0	0	11	80	283	
12	THIRUVANANTHAPURAM	50	21	363	40	238	712	52	50	23	9	20	1	77	232	944	
13	THRISSUR	13	3	1169	0	60	1245	25	5	0	1	0	0	473	504	1749	
14	WAYANAD	22	37	404	0	11	474	19	110	4	9	0	1	200	343	817	
Total		390	255	13410	76	1367	15498	670	701	178	48	29	2	3086	4714	20212	

TABLE XIV(C): MINOR IRRIGATION SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO SOURCE OF FINANCE - ALL SCHEMES**(In Number)**

Sl. No.	District	Total No. of MI Schemes															
		With Single Source of Finance						With two Sources of Finance									Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to 15)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
1	ALAPPUZHA	0	5	792	6	10	813	107	99	27	0	1	0	1382	1616	2429	
2	ERNAKULAM	135	152	4744	26	679	5736	129	86	197	3	1	0	855	1271	7007	
3	IDUKKI	21	52	2318	4	38	2433	39	200	24	3	0	0	793	1059	3492	
4	KANNUR	197	28	4031	1	288	4545	301	356	40	27	2	0	221	947	5492	
5	KASARGOD	43	9	3620	4	103	3779	289	223	36	1	5	1	330	885	4664	
6	KOLLAM	67	24	1284	4	98	1477	82	306	48	10	7	7	100	560	2037	
7	KOTTAYAM	142	18	2265	2	115	2542	89	189	3	6	5	0	332	624	3166	
8	KOZHIKODE	44	31	2667	6	38	2786	177	964	23	19	2	0	953	2138	4924	
9	MALAPPURAM	97	70	9593	63	560	10383	461	670	108	70	15	0	665	1989	12372	
10	PALAKKAD	148	40	3178	14	792	4172	243	62	47	2	5	0	1763	2122	6294	
11	PATHANAMTHITTA	46	49	1020	15	68	1198	35	522	24	51	1	2	102	737	1935	
12	THIRUVANANTHAPURAM	97	89	1047	47	273	1553	179	533	59	40	28	10	185	1034	2587	
13	THRISSUR	97	29	17533	19	96	17774	403	63	106	6	12	1	4384	4975	22749	
14	WAYANAD	22	37	419	0	12	490	19	120	4	9	0	1	220	373	863	
	Total	1156	633	54511	211	3170	59681	2553	4393	746	247	84	22	12285	20330	80011	

TABLE XV(A): MINOR IRRIGATION SCHEMES BY TRIBAL & NON-TRIBAL VILLAGES – GROUND WATER**(In Number)**

Sl. No.	District	Ground Water Schemes														
		Dug well			Shallow Tube well			Medium Tube well			Deep Tube well			Total		
		Tribal	Non tribal	Total	Tribal	Non tribal	Total	Tribal	Non tribal	Total	Tribal	Non tribal	Total	Tribal	Non tribal	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	ALAPPUZHA	42	1107	1149	70	592	662	3	142	145	0	1	1	115	1,842	1,957
2	ERNAKULAM	0	4896	4896	0	176	176	0	332	332	0	13	13	0	5,417	5,417
3	IDUKKI	93	670	763	1	8	9	19	349	368	20	256	276	133	1,283	1,416
4	KANNUR	0	3687	3687	0	52	52	0	132	132	0	28	28	0	3,899	3,899
5	KASARGOD	0	1635	1635	0	143	143	0	610	610	0	452	452	0	2,840	2,840
6	KOLLAM	23	1258	1281	0	11	11	0	50	50	0	9	9	23	1,328	1,351
7	KOTTAYAM	38	1170	1208	1	22	23	0	86	86	0	9	9	39	1,287	1,326
8	KOZHIKODE	0	3838	3838	0	48	48	0	84	84	0	18	18	0	3,988	3,988
9	MALAPPURAM	125	9132	9257	6	325	331	10	582	592	0	117	117	141	10,156	10,297
10	PALAKKAD	70	3051	3121	4	266	270	38	1284	1,322	14	622	636	126	5,223	5,349
11	PATHANAMTHITTA	0	1633	1633	0	8	8	0	16	16	0	4	4	0	1,661	1,661
12	THIRUVANANTHAPURAM	47	1536	1583	0	6	6	0	107	107	0	4	4	47	1,653	1,700
13	THRISSUR	848	17188	18036	18	1389	1,407	74	1354	1,428	2	299	301	942	20,230	21,172
14	WAYANAD	0	48	48	0	0	0	0	29	29	0	3	3	0	80	80
	Total	1286	50849	52135	100	3046	3146	144	5157	5301	36	1835	1871	1566	60887	62453

TABLE XV (B): MINOR IRRIGATION SCHEMES BY TRIBAL & NON-TRIBAL VILLAGES - SURFACE WATER**(In Number)**

Sl. No.	District	Surface Water Schemes								
		Surface Flow Schemes			Surface Lift Schemes			Total		
		Tribal	Non tribal	Total	Tribal	Non tribal	Total	Tribal	Non tribal	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	18	611	629	64	777	841	82	1388	1470
2	ERNAKULAM	0	502	502	0	2209	2209	0	2711	2711
3	IDUKKI	81	284	365	78	2206	2284	159	2490	2649
4	KANNUR	0	559	559	0	2058	2058	0	2617	2617
5	KASARGOD	0	314	314	0	2310	2310	0	2624	2624
6	KOLLAM	66	334	400	22	576	598	88	910	998
7	KOTTAYAM	1	691	692	108	1792	1900	109	2483	2592
8	KOZHIKODE	0	196	196	0	1183	1183	0	1379	1379
9	MALAPPURAM	17	1031	1048	125	2891	3016	142	3922	4064
10	PALAKKAD	1	947	948	109	1525	1634	110	2472	2582
11	PATHANAMTHITTA	0	302	302	0	344	344	0	646	646
12	THIRUVANANTHAPURAM	47	1382	1429	18	535	553	65	1917	1982
13	THRISSUR	22	405	427	194	1798	1992	216	2203	2419
14	WAYANAD	57	401	458	183	747	930	240	1148	1388
	Total	310	7959	8269	901	20951	21852	1211	28910	30121

Table XVI(A): NUMBER OF IN USE GROUND WATER SCHEMES AND IRRIGATION POTENTIAL UTILISED BY WATER DISTRIBUTION DEVICE**(In Number/Area in Ha)**

Sl. No.	District	Ground Water Schemes According to Water Distribution System															
		Open Water Channel (Pucca)		Open Water Channel (Kutcha)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	18	6.89	39	14.05	55	34.77	1703	811.35	7	9.55	2	1.88	122	34.38	1946	912.87
2	ERNAKULAM	307	139.66	1684	819.29	376	171.92	2674	1435.03	39	24.59	90	59.59	209	83.48	5379	2733.56
3	IDUKKI	18	24.22	72	73.62	87	63.83	1037	952.63	14	12.92	43	48.46	133	137.80	1404	1313.48
4	KANNUR	23	17.38	78	25.92	212	191.11	3266	1770.10	35	23.05	149	103.49	127	58.80	3890	2189.85
5	KASARGOD	99	63.15	74	80.06	123	72.87	1785	873.69	45	31.52	648	441.77	63	41.12	2837	1604.18
6	KOLLAM	91	61.18	130	347.95	205	295.46	648	399.76	24	17.58	19	13.99	212	245.21	1329	1381.13
7	KOTTAYAM	20	11.59	24	11.60	90	343.44	1086	1652.03	25	17.61	15	7.10	65	28.04	1325	2071.41
8	KOZHIKODE	70	57.57	289	164.72	211	102.02	2972	1345.47	89	70.13	56	33.23	294	123.86	3981	1897.00
9	MALAPPURAM	320	199.94	2649	1632.48	273	138.81	6343	3115.27	120	65.81	418	272.33	160	109.65	10283	5534.29
10	PALAKKAD	229	321.28	1244	1352.77	261	471.61	2571	2711.02	742	1083.66	113	69.33	72	65.15	5232	6074.82
11	PATHANAMTHITTA	129	28.90	97	32.71	235	95.85	957	392.78	12	9.24	26	7.49	203	67.82	1659	634.79
12	THIRUVANANTHAPURAM	67	24.87	202	105.68	296	177.36	805	379.40	19	21.18	5	3.11	296	98.35	1690	809.95
13	THRISSUR	755	266.76	5634	2303.41	3188	950.89	10665	3185.15	100	41.33	487	204.85	337	97.81	21166	7050.20
14	WAYANAD	0	0.00	6	8.18	1	3.24	41	64.21	0	0.00	20	33.42	11	4.51	79	113.56
	Total	2146	1223.39	12222	6972.44	5613	3113.18	36553	19087.89	1271	1428.17	2091	1300.04	2304	1195.9	62200	34321.09

TABLE XVI (B): NUMBER OF IN USE SURFACE WATER SCHEMES AND IRRIGATION POTENTIAL UTILISED BY WATER DISTRIBUTION DEVICE**(In Number/ Area in Ha)**

Sl No.	District	Surface Water Schemes According to Water Distribution System															
		Open Water Channel (Pucca)		Open Water Channel (Kutcha)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	116	6885.12	585	15815.21	13	54.55	660	1386.86	2	0.81	4	4.95	71	66.95	1451	24214.45
2	ERNAKULAM	228	3797.44	998	3160.99	116	1983.42	1085	1991.59	20	31.03	31	31.84	194	1146.13	2672	12142.44
3	IDUKKI	45	1040.26	121	609.28	82	122.59	2020	6136.66	37	52.83	63	223.13	265	1582.38	2633	9767.13
4	KANNUR	121	571.03	520	1780.23	105	214.91	1319	1402.11	19	29.26	78	62.73	423	1006.72	2585	5066.99
5	KASARGOD	110	1445.43	362	763.12	39	87.59	1001	1455.38	38	25.63	881	653.16	160	780.12	2591	5210.43
6	KOLLAM	113	593.96	343	726.59	21	17.17	210	171.03	20	24.75	6	17.72	267	442.71	980	1993.93
7	KOTTAYAM	116	3350.73	565	8315.34	153	3755.40	1478	2223.39	18	12.73	37	74.80	214	593.30	2581	18325.69
8	KOZHIKODE	34	218.74	145	516.69	55	70.33	862	845.29	15	6.53	44	46.67	196	263.67	1351	1967.92
9	MALAPPURAM	201	5064.55	1650	8639.34	92	646.59	1676	4151.76	41	86.47	146	216.17	184	1104.10	3990	19908.98
10	PALAKKAD	272	773.85	969	2687.70	81	255.81	1013	2060.17	13	47.82	29	46.03	110	317.34	2487	6188.72
11	PATHANAMTHITTA	79	1755.04	242	1085.46	11	4.72	152	184.72	1	0.40	1	1.21	146	279.44	632	3310.99
12	THIRUVANANTHAPURAM	269	1411.95	1016	3867.71	100	198.57	227	1771.29	4	4.32	5	7.67	347	540.99	1968	7802.50
13	THRISSUR	154	2555.27	799	7335.13	351	472.59	1007	2957.82	13	55.80	54	57.09	34	864.21	2412	14297.91
14	WAYANAD	237	4248.64	278	1871.55	16	163.45	492	1672.29	20	47.73	169	572.37	136	467.24	1348	9043.27
	Total	2095	33712.01	8593	57174.34	1235	8047.69	1320	28410.36	261	426.11	1548	2015.54	2747	9455.30	29681	139241.35

TABLE XVI(C): NUMBER OF MINOR IRRIGATION SCHEMES AND IRRIGATION POTENTIAL UTILISED BY WATER DISTRIBUTION DEVICE -ALL SCHEMES**(In Number/Area in Ha)**

Sl. No.	District	Minor Irrigation Schemes According to Water Distribution System															
		Open Water (Lined/Pucca)		Open Water (Unlined/Kutcha)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	134	6892.01	624	15829.26	68	89.32	2363	2198.21	9	10.36	6	6.83	193	101.33	3,397	25127.32
2	ERNAKULAM	535	3937.10	2682	3980.28	492	2155.34	3759	3426.62	59	55.62	121	91.43	403	1229.61	8,051	14876.00
3	IDUKKI	63	1064.48	193	682.90	169	186.42	3057	7089.29	51	65.75	106	271.59	398	1720.18	4,037	11080.61
4	KANNUR	144	588.41	598	1806.15	317	406.02	4585	3172.21	54	52.31	227	166.22	550	1065.52	6,475	7256.84
5	KASARGOD	209	1508.58	436	843.18	162	160.46	2786	2329.07	83	57.15	1529	1094.93	223	821.24	5,428	6814.61
6	KOLLAM	204	655.14	473	1074.54	226	312.63	858	570.79	44	42.33	25	31.71	479	687.92	2,309	3375.06
7	KOTTAYAM	136	3362.32	589	8326.94	243	4098.84	2564	3875.42	43	30.34	52	81.90	279	621.34	3,906	20397.10
8	KOZHIKODE	104	276.31	434	681.41	266	172.35	3834	2190.76	104	76.66	100	79.90	490	387.53	5,332	3864.92
9	MALAPPURAM	521	5264.49	4299	10271.82	365	785.40	8019	7267.03	161	152.28	564	488.50	344	1213.75	14,273	25443.27
10	PALAKKAD	501	1095.13	2213	4040.47	342	727.42	3584	4771.19	755	1131.48	142	115.36	182	382.49	7,719	12263.54
11	PATHANAMTHITTA	208	1783.94	339	1118.17	246	100.57	1109	577.50	13	9.64	27	8.70	349	347.26	2,291	3945.78
12	THIRUVANANTHAPURAM	336	1436.82	1218	3973.39	396	375.93	1032	2150.69	23	25.50	10	10.78	643	639.34	3,658	8612.45
13	THRISSUR	909	2822.03	6433	9638.54	3539	1423.48	11672	6142.97	113	97.13	541	261.94	371	962.02	23,578	21348.11
14	WAYANAD	237	4248.64	284	1879.73	17	166.69	533	1736.50	20	47.73	189	605.79	147	471.75	1,427	9156.83
	Total	4241	34935.40	20815	64146.78	6848	11160.87	49755	47498.25	1532	1854.28	3639	3315.58	5051	10651.28	91881	173562.44

TABLE XVII: NUMBER OF TRIBAL VILLAGES HAVING MAJOR/MEDIUM IRRIGATION SCHEMES, MINOR IRRIGATION SCHEMES AND NO IRRIGATION SCHEMES**(In Number)**

Sl. No.	District	Only Major /MediumScheme	Only Minor IrrigationScheme	Both Major/Medium & MIScheme	No Irrigation Scheme
(1)	(2)	(3)	(4)	(5)	(6)
1	ALAPPUZHA	0	2	1	0
2	ERNAKULAM	0	0	0	0
3	IDUKKI	0	6	0	0
4	KANNUR	0	0	0	0
5	KASARGOD	0	0	0	0
6	KOLLAM	0	1	2	0
7	KOTTAYAM	0	3	0	0
8	KOZHIKODE	0	0	0	0
9	MALAPPURAM	0	1	2	0
10	PALAKKAD	0	3	2	0
11	PATHANAMTHITTA	0	0	0	0
12	THIRUVANANTHAPURAM	0	2	1	0
13	THRISSUR	0	4	1	0
14	WAYANAD	0	2	0	0
	Total	0	24	9	0

TABLE XVIII: NUMBER OF MINOR IRRIGATION SCHEMES IN THE COMMAND AREA OF MAJOR/MEDIUM IRRIGATION SCHEMES BY REASONS**(In Number)**

Sl. No.	District	GROUND WATER					SURFACE WATER				
		Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (Col 3 to 6)	Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (col.8 to 11)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	ALAPPUZHA	4	4	0	6	14	23	18	3	21	65
2	ERNAKULAM	449	376	38	187	1050	174	156	70	67	467
3	IDUKKI	2	0	0	0	2	9	0	1	4	14
4	KANNUR	153	4	0	12	169	78	1	0	1	80
5	KASARGOD	0	22	0	0	22	5	128	0	7	140
6	KOLLAM	1	10	0	20	31	4	13	0	4	21
7	KOTTAYAM	23	1	0	12	36	104	11	1	1	117
8	KOZHIKODE	186	96	0	5	287	33	40	4	28	105
9	MALAPPURAM	2	0	0	3	5	1	3	0	43	47
10	PALAKKAD	79	673	9	18	779	37	401	0	39	477
11	PATHANAMTHITTA	62	52	24	4	142	18	17	2	4	41
12	THIRUVANANTHAPURAM	62	29	0	0	91	192	90	1	6	289
13	THRISSUR	398	172	9	15	594	89	27	0	57	173
14	WAYANAD	0	0	0	0	0	2	3	0	10	15
	Total	1421	1439	80	282	3222	769	908	82	292	2051

DUGWELLS

TABLE.1.1 NUMBER OF DUGWELLS BY TYPE

Sl. No.	District	Pucca	Kutcha	Dug-cum bore well	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	1076	62	6	5	1149
2	ERNAKULAM	3991	854	38	13	4896
3	IDUKKI	601	148	9	5	763
4	KANNUR	3425	229	19	14	3687
5	KASARGOD	1267	238	22	108	1635
6	KOLLAM	1043	158	47	33	1281
7	KOTTAYAM	1046	150	6	6	1208
8	KOZHIKODE	3555	187	9	87	3838
9	MALAPPURAM	7620	1518	15	104	9257
10	PALAKKAD	2743	296	52	30	3121
11	PATHANAMTHITTA	1459	161	3	10	1633
12	THIRUVANANTHAPURAM	1397	134	6	46	1583
13	THRISSUR	15694	2120	107	115	18036
14	WAYANAD	46	2	0	0	48
	Total	44963	6257	339	576	52135

TABLE 1.2: DISTRIBUTION OF DUGWELLS ACCORDING TO OWNERSHIP**(In Number)**

Sl. No.	District	Public					Private			
		Govt. Owned	Co-op Society	Panchayat Owned	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	Grand Total (7 + 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	2	0	49	2	53	152	944	1096	1149
2	ERNAKULAM	18	3	68	95	184	56	4656	4712	4896
3	IDUKKI	1	4	17	9	31	3	729	732	763
4	KANNUR	5	3	100	23	131	85	3471	3556	3687
5	KASARGOD	16	1	4	23	44	24	1567	1591	1635
6	KOLLAM	1	0	34	30	65	7	1209	1216	1281
7	KOTTAYAM	0	0	2	28	30	4	1174	1178	1208
8	KOZHIKODE	1	0	95	30	126	34	3678	3712	3838
9	MALAPPURAM	17	4	61	143	225	92	8940	9032	9257
10	PALAKKAD	6	2	173	32	213	140	2768	2908	3121
11	PATHANAMTHITTA	2	0	1	4	7	2	1624	1626	1633
12	THIRUVANANTHAPURAM	1	0	2	8	11	16	1556	1572	1583
13	THRISSUR	8	4	17	52	81	58	17897	17955	18036
14	WAYANAD	24	0	9	1	34	0	14	14	48
Total		102	21	632	480	1235	673	50227	50900	52135

TABLE 1.3.1: DISTRIBUTION OF DUGWELL ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No	District	No. of Dug wells owned by						Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7 to 8)
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1	ALAPPUZHA	52	3	92	797	944	205	1149	
2	ERNAKULAM	100	15	862	3679	4656	240	4896	
3	IDUKKI	18	21	112	578	729	34	763	
4	KANNUR	65	13	1804	1589	3471	216	3687	
5	KASARGOD	45	35	525	962	1567	68	1635	
6	KOLLAM	34	9	437	729	1209	72	1281	
7	KOTTAYAM	15	11	93	1055	1174	34	1208	
8	KOZHIKODE	71	18	1916	1673	3678	160	3838	
9	MALAPPURAM	178	33	7255	1474	8940	317	9257	
10	PALAKKAD	141	29	1502	1096	2768	353	3121	
11	PATHANAMTHITTA	50	4	246	1324	1624	9	1633	
12	THIRUVANANTHAPURAM	40	22	622	872	1556	27	1583	
13	THRISSUR	277	54	6183	11383	17897	139	18036	
14	WAYANAD	0	2	0	12	14	34	48	
	Total	1086	269	21649	27223	50227	1908	52135	

TABLE 1.3.2: DISTRIBUTION OF DUGWELL ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No	District	No. of Dug wells owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	8	0	25	142	175
2	ERNAKULAM	13	2	147	556	718
3	IDUKKI	0	6	16	77	99
4	KANNUR	18	6	513	370	907
5	KASARGOD	8	10	132	236	386
6	KOLLAM	7	2	131	171	311
7	KOTTAYAM	0	0	6	125	131
8	KOZHIKODE	9	4	368	270	651
9	MALAPPURAM	18	6	942	286	1252
10	PALAKKAD	64	12	541	202	819
11	PATHANAMTHITTA	27	2	87	294	410
12	THIRUVANANTHAPURAM	13	11	249	283	556
13	THRISSUR	40	9	1390	2455	3894
14	WAYANAD	0	0	0	1	1
	Total	225	70	4547	5468	10310

TABLE 1.4.1: DISTRIBUTION OF DUGWELLS ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Dug wells by size class of owner					
		Marginal (0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	854	74	9	5	2	944
2	ERNAKULAM	4092	415	89	50	10	4656
3	IDUKKI	491	167	49	17	5	729
4	KANNUR	3131	280	47	11	2	3471
5	KASARGOD	1160	264	103	39	1	1567
6	KOLLAM	1051	110	27	13	8	1209
7	KOTTAYAM	972	159	31	12	0	1174
8	KOZHIKODE	3232	349	73	21	3	3678
9	MALAPPURAM	7642	937	289	57	15	8940
10	PALAKKAD	2111	504	121	25	7	2768
11	PATHANAMTHITTA	1497	97	24	3	3	1624
12	THIRUVANANTHAPURAM	1439	83	24	7	3	1556
13	THRISSUR	17067	598	115	98	19	17897
14	WAYANAD	4	6	4	0	0	14
	Total	44743	4043	1005	358	78	50227

TABLE 1.4.2: DISTRIBUTION OF DUGWELLS ACCORDING TO THE INDIVIDUAL FEMALE OWNER'S HOLDING SIZE

(In Number)

Sl. No.	District	No. of Dug wells by size class of owner					
		Marginal (0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4ha)	Medium (4-10ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	168	5	1	0	1	175
2	ERNAKULAM	674	34	4	3	3	718
3	IDUKKI	78	14	6	1	0	99
4	KANNUR	851	47	6	3	0	907
5	KASARGOD	318	47	15	6	0	386
6	KOLLAM	280	20	8	2	1	311
7	KOTTAYAM	110	17	3	1	0	131
8	KOZHIKODE	589	52	7	3	0	651
9	MALAPPURAM	1085	109	48	5	5	1252
10	PALAKKAD	621	154	35	7	2	819
11	PATHANAMTHITTA	395	9	4	0	2	410
12	THIRUVANANTHAPURAM	527	21	7	0	1	556
13	THRISSUR	3774	99	11	6	4	3894
14	WAYANAD	1	0	0	0	0	1
	Total	9471	628	155	37	19	10310

TABLE 1.5 DISTRIBUTION OF DUGWELLS AND COST OF CONSTRUCTION**(In Rs. 000)**

Sl. No	District	Number and Cost of Construction of Dug wells Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	530	32088	318	20263	138	7102	96	3116	67	3496	1149	66065
2	ERNAKULAM	4475	123530	227	7854	96	3453	45	1637	53	1348	4896	137822
3	IDUKKI	489	24018	108	7119	60	3043	48	2246	58	3002	763	39428
4	KANNUR	3081	138103	256	15174	138	10419	100	5092	112	4663	3687	173451
5	KASARGOD	1167	36539	221	14185	154	7120	50	2428	43	2171	1635	62443
6	KOLLAM	591	14953	158	11923	125	4946	161	6406	246	7199	1281	45427
7	KOTTAYAM	799	20666	92	2523	54	1419	42	1180	221	8059	1208	33847
8	KOZHIKODE	2497	116523	404	23274	309	21458	321	23884	307	13734	3838	198873
9	MALAPPURAM	7377	224648	746	39239	625	36901	290	15692	219	11072	9257	327552
10	PALAKKAD	2038	80431	498	21642	335	10861	135	4755	115	5783	3121	123472
11	PATHANAMTHITTA	789	25918	292	9554	182	6357	155	6021	215	7877	1633	55727
12	THIRUVANANTHAPURAM	739	25849	183	7836	131	5627	200	9944	330	16015	1583	65271
13	THRISSUR	15563	414410	1190	40024	626	23577	346	13182	311	9725	18036	500918
14	WAYANAD	44	4299	3	292	0	0	0	0	1	20	48	4611
	Total	40179	1281975	4696	220902	2973	142283	1989	95583	2298	94164	52135	1834907

TABLE 1.6.1: DISTRIBUTION OF DUGWELLS BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No	District	No. of Dug wells according to the annual cost of maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	712	423	14	0	0	1149
2	ERNAKULAM	2931	1942	23	0	0	4896
3	IDUKKI	701	58	4	0	0	763
4	KANNUR	3208	468	11	0	0	3687
5	KASARGOD	1014	563	58	0	0	1635
6	KOLLAM	862	374	44	0	1	1281
7	KOTTAYAM	926	279	3	0	0	1208
8	KOZHIKODE	2897	885	53	3	0	3838
9	MALAPPURAM	7733	1484	40	0	0	9257
10	PALAKKAD	2278	822	19	2	0	3121
11	PATHANAMTHITTA	1212	405	16	0	0	1633
12	THIRUVANANTHAPURAM	1237	339	7	0	0	1583
13	THRISSUR	13401	4581	54	0	0	18036
14	WAYANAD	41	7	0	0	0	48
	Total	39153	12630	346	5	1	52135

Table 1.6.2 : AVERAGE COST OF CONSTRUCTION, MACHINERY , ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR DUGWELL

(Amount in thousands)

Sl. No	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Dug well for which subsidy was received	Average amount of subsidy	No. of Dug well for which subsidy was received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	58	12	2	118	7	201	7
2	ERNAKULAM	28	10	1	68	6	218	4
3	IDUKKI	52	13	0	34	25	77	7
4	KANNUR	47	10	1	225	6	589	5
5	KASARGOD	38	16	2	106	9	7	2
6	KOLLAM	35	17	3	124	9	288	6
7	KOTTAYAM	28	9	1	78	6	112	6
8	KOZHIKODE	52	12	1	126	8	1190	6
9	MALAPPURAM	35	11	1	468	9	837	5
10	PALAKKAD	40	9	1	28	28	181	3
11	PATHANAMTHITTA	34	12	1	211	11	538	7
12	THIRUVANANTHAPURAM	41	13	1	206	10	717	6
13	THRISSUR	28	9	1	218	12	287	6
14	WAYANAD	96	19	1	4	51	3	38
Total		35	11	1	2014	10	5245	6

TABLE 1.7: DISTRIBUTION DUG WELLS ACCORDING TO MAJOR SOURCE OF FINANCE (UNDER INDIVIDUAL OWNERSHIP)

(In Number)

Sl. No	District	With Single Source of Finance						With two Sources of Finance								Grand Total (8 +16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt Fund	Own Saving & Money Lender	Bank Loan & Govt Fund	Bank Loan & Money Lender	Govt Fund & Money Lender	Others	Total (9 to 15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	3	264	2	4	273	45	64	18	0	0	0	544	671	944
2	ERNAKULAM	100	127	3092	22	458	3799	73	59	193	3	1	0	528	857	4656
3	IDUKKI	7	3	455	3	13	481	15	78	0	1	0	0	154	248	729
4	KANNUR	153	12	2409	1	184	2759	181	309	26	14	2	0	180	712	3471
5	KASARGOD	22	3	1182	2	17	1226	37	111	3	0	1	1	188	341	1567
6	KOLLAM	47	16	705	3	36	807	55	224	39	7	7	7	63	402	1209
7	KOTTAYAM	20	13	904	0	61	998	27	71	0	4	2	0	72	176	1174
8	KOZHIKODE	43	23	1860	6	7	1939	154	840	12	15	2	0	716	1739	3678
9	MALAPPURAM	58	30	7021	33	233	7375	421	500	53	59	12	0	520	1565	8940
10	PALAKKAD	80	11	1337	5	424	1857	82	42	21	1	3	0	762	911	2768
11	PATHANAMTHITTA	39	14	842	15	59	969	33	457	22	49	1	2	91	655	1624
12	THIRUVANANTHAPURAM	47	66	621	7	33	774	124	471	34	30	8	9	106	782	1556
13	THRISSUR	82	23	14533	11	35	14684	346	54	49	3	8	1	2752	3213	17897
14	WAYANAD	0	0	9	0	0	9	0	2	0	0	0	0	3	5	14
	Total	698	344	35234	110	1564	37950	1593	3282	470	186	47	20	6679	12277	50227

TABLE 1.8: DISTRIBUTION OF DUGWELLS BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Dug wells In use	Dug wells not in use			Grand Total (3+6)	Number of Schemes meant only for re-charge of ground water		
			Temporarily	Permanently	Total (4+5)		In use	Not in use (Temp + Pmt)	Total (8+9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	1138	2	9	11	1149	15	5	20
2	ERNAKULAM	4861	26	9	35	4896	50	14	64
3	IDUKKI	757	5	1	6	763	0	1	1
4	KANNUR	3680	5	2	7	3687	2	2	4
5	KASARGOD	1633	2	0	2	1635	6	0	6
6	KOLLAM	1267	14	0	14	1281	10	0	10
7	KOTTAYAM	1207	1	0	1	1208	7	0	7
8	KOZHIKODE	3832	5	1	6	3838	2	0	2
9	MALAPPURAM	9247	8	2	10	9257	14	2	16
10	PALAKKAD	3046	64	11	75	3121	10	3	13
11	PATHANAMTHITTA	1631	2	0	2	1633	1	0	1
12	THIRUVANANTHAPURAM	1574	8	1	9	1583	1	0	1
13	THRISSUR	18031	4	1	5	18036	41	1	42
14	WAYANAD	48	0	0	0	48	0	0	0
	Total	51952	146	37	183	52135	159	28	187

TABLE 1.9: DISTRIBUTION OF DUGWELLS TEMPORARILY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Non Availability of Adequate Power/ Fuel		Mechanical Break Down		Less discharge of Water		Non - Availability of Finance		Lack of Maintenance		Others		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	0	0.00	1	0.12	0	0.00	0	0.00	1	0.00	0	0.00	2	0.12
2	ERNAKULAM	2	0.00	8	0.16	8	0.18	1	0.00	2	0.36	5	0.20	26	0.90
3	IDUKKI	0	0.00	1	0.00	3	0.00	0	0.00	1	0.00	0	0.00	5	0.00
4	KANNUR	0	0.00	0	0.00	0	0.00	1	0.93	0	0.00	4	0.00	5	0.93
5	KASARGOD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00	2	0.00
6	KOLLAM	0	0.00	0	0.00	3	0.10	1	0.00	0	0.00	10	0.00	14	0.10
7	KOTTAYAM	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
8	KOZHIKODE	2	0.00	1	0.00	0	0.00	0	0.00	0	0.00	2	0.00	5	0.00
9	MALAPPURAM	0	0.00	2	0.00	5	0.05	0	0.00	1	0.00	0	0.00	8	0.05
10	PALAKKAD	2	0.00	2	0.00	4	0.00	2	0.00	27	0.00	27	0.00	64	0.00
11	PATHANAMTHITTA	0	0.00	0	0.00	2	0.09	0	0.00	0	0.00	0	0.00	2	0.09
12	THIRUVANANTHAPURAM	0	0.00	2	0.00	1	0.00	0	0.00	0	0.00	5	0.07	8	0.07
13	THRISSUR	0	0.00	1	0.00	1	0.00	0	0.00	1	0.00	1	0.00	4	0.00
	Total	6	0.00	19	0.28	27	0.42	5	0.93	33	0.36	56	0.27	146	2.26

TABLE 1.10: DISTRIBUTION OF DUGWELLS PERMANENTLY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/Medium Irrigation Projects		Other reasons		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	1	0.00	6	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00	9	0.00
2	ERNAKULAM	0	0.00	4	0.00	1	0.00	0	0.00	0	0.00	0	0.00	4	0.00	9	0.00
3	IDUKKI	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
4	KANNUR	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00	2	0.00
5	KOZHIKODE	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
6	MALAPPURAM	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00	2	0.00
7	PALAKKAD	1	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	9	0.00	11	0.00
8	THIRUVANANTHAPURAM	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
9	THRISSUR	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
Total		3	0.00	11	0.00	3	0.00	0	0.00	0	0.00	0	0.00	20	0.00	37	0.00

TABLE 1.11: DISTRIBUTION OF DUGWELL SCHEMES IN USE ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED**(In Number/In Ha)**

Sl. No	District	No. & PU of Dug well Schemes According to Water Distribution System															
		Open Water (Lined/Pucca)		Open Water (Unlined/Kutchra)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	12	5.93	32	12.40	31	19.66	945	545.64	2	2.11	0	0.00	116	32.54	1138	618.28
2	ERNAKULAM	287	127.48	1603	782.46	354	161.92	2328	1258.17	33	21.77	71	45.71	185	66.36	4861	2463.87
3	IDUKKI	10	5.51	64	51.21	50	27.23	483	374.70	8	5.40	15	8.81	127	134.70	757	607.56
4	KANNUR	22	9.30	76	25.00	205	181.53	3112	1693.71	27	10.67	121	79.07	117	45.28	3680	2044.56
5	KASARGOD	63	39.03	47	51.12	73	42.03	1112	554.48	26	20.73	268	199.64	44	32.01	1633	939.04
6	KOLLAM	89	60.40	127	347.45	191	284.79	612	365.56	22	16.56	17	12.09	209	242.49	1267	1329.34
7	KOTTAYAM	19	11.39	22	11.00	82	341.62	993	1597.46	19	10.22	11	4.51	61	25.32	1207	2001.52
8	KOZHIKODE	63	49.14	284	162.50	206	95.66	2869	1298.67	79	60.87	48	24.68	283	118.87	3832	1810.39
9	MALAPPURAM	305	192.26	2460	1504.03	209	109.46	5714	2810.66	95	50.02	342	222.65	122	73.64	9247	4962.72
10	PALAKKAD	129	118.19	684	546.43	104	126.46	1500	1093.47	564	722.02	35	33.93	30	22.16	3046	2662.66
11	PATHANAMTHITTA	129	28.90	97	32.71	229	91.92	936	379.33	12	9.24	26	7.49	202	67.62	1631	617.21
12	THIRUVANANTHAPURAM	63	21.51	197	104.34	292	174.20	721	352.95	15	14.09	5	3.11	281	92.60	1574	762.80
13	THRISSUR	715	252.81	5027	2019.35	2598	825.58	8989	2603.41	55	17.44	312	119.41	335	97.11	1803	5935.11
14	WAYANAD	0	0.00	6	8.18	1	3.24	24	45.56	0	0.00	7	9.62	10	4.06	48	70.66
	Total	1906	921.85	10726	5658.18	4625	2485.30	30338	14973.77	957	961.14	1278	770.72	2122	1054.76	5195	26825.72

TABLE 1.12: DISTRIBUTION OF DUGWELLS (IN USE, TEMPORARILY NOT IN USE) ACCORDING TO WATER LIFTING DEVICES**(In Number)**

Sl. No.	District	Number of schemes by lifting Device					
		Submersible Pump	Centrifugal Pump	Turbine	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	684	342	13	100	1	1140
2	ERNAKULAM	550	4092	65	93	87	4887
3	IDUKKI	197	442	17	88	18	762
4	KANNUR	1496	1993	71	104	21	3685
5	KASARGOD	420	1182	13	6	14	1635
6	KOLLAM	473	551	99	138	20	1281
7	KOTTAYAM	346	744	64	47	7	1208
8	KOZHIKODE	1252	2395	54	124	12	3837
9	MALAPPURAM	2115	6708	281	100	51	9255
10	PALAKKAD	491	2385	21	169	44	3110
11	PATHANAMTHITTA	403	979	151	92	8	1633
12	THIRUVANANTHAPURAM	814	567	65	107	29	1582
13	THRISSUR	933	16678	334	68	22	18035
14	WAYANAD	16	19	2	11	0	48
	Total	10190	39077	1250	1247	334	52098

TABLE 1.13: DISTRIBUTION OF DUGWELLS (IN USE, TEMPORARILY NOT IN USE) ACCORDING TO SOURCE OF ENERGY**(In Number)**

Sl. No	District	Number of schemes by source of energy						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	968	71	0	1	100	0	1140
2	ERNAKULAM	4656	115	6	2	93	15	4887
3	IDUKKI	649	21	0	1	88	3	762
4	KANNUR	3455	93	4	0	104	29	3685
5	KASARGOD	1585	24	3	1	6	16	1635
6	KOLLAM	1081	42	4	4	138	12	1281
7	KOTTAYAM	1143	16	0	0	47	2	1208
8	KOZHIKODE	3530	144	1	2	124	36	3837
9	MALAPPURAM	8639	359	4	2	100	151	9255
10	PALAKKAD	2870	64	0	0	169	7	3110
11	PATHANAMTHITTA	1406	58	0	0	92	77	1633
12	THIRUVANANTHAPURAM	1426	45	0	0	107	4	1582
13	THRISSUR	17453	480	11	4	68	19	18035
14	WAYANAD	31	6	0	0	11	0	48
Total		48892	1538	33	17	1247	371	52098

TABLE 1.14: DISTRIBUTION OF DUGWELLS (IN USE, TEMPORARILY NOT IN USE) ACCORDING TO HORSE POWER OF LIFTING DEVICES**(In Number)**

Sl. No.	District	No. of Dug well by horse power of lifting devices								Total (9 to 10)
		0-2 hp	2-4 hp	4-6 hp	6-8 hp	8-10 hp	above 10 hp	Total (3 to 8)	Schemes without horsepower	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	945	31	61	0	0	3	1040	100	1140
2	ERNAKULAM	3189	1303	285	4	6	7	4794	93	4887
3	IDUKKI	488	8	169	2	3	4	674	88	762
4	KANNUR	3307	112	140	10	9	3	3581	104	3685
5	KASARGOD	1236	212	160	6	11	4	1629	6	1635
6	KOLLAM	1084	9	45	0	1	4	1143	138	1281
7	KOTTAYAM	1064	11	82	0	3	1	1161	47	1208
8	KOZHIKODE	3402	75	229	2	2	3	3713	124	3837
9	MALAPPURAM	8383	553	200	4	7	8	9155	100	9255
10	PALAKKAD	1352	428	1147	5	6	3	2941	169	3110
11	PATHANAMTHITTA	1483	35	18	0	4	1	1541	92	1633
12	THIRUVANANTHAPURAM	1231	49	191	1	1	2	1475	107	1582
13	THRISSUR	7429	2029	8436	26	14	33	17967	68	18035
14	WAYANAD	21	5	6	1	4	0	37	11	48
	Total	34614	4860	11169	61	71	76	50851	1247	52098

TABLE 1.15: DISTRIBUTION OF DUGWELLS (IN USE, TEMPORARILY NOT IN USE) ACCORDING TO TOTAL PUMPING HOURS OF OPERATION**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (3 to 8)	<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	1018	14	4	3	1	0	1040	976	27	27	5	4	1	1040
2	ERNAKULAM	4632	130	9	6	3	14	4794	4157	434	148	34	6	15	4794
3	IDUKKI	673	0	1	0	0	0	674	651	15	7	1	0	0	674
4	KANNUR	3568	10	3	0	0	0	3581	3538	38	4	0	0	1	3581
5	KASARGOD	1538	87	4	0	0	0	1629	1590	30	3	6	0	0	1629
6	KOLLAM	1088	47	3	0	4	1	1143	1058	69	2	3	4	7	1143
7	KOTTAYAM	1154	3	1	1	1	1	1161	1069	74	18	0	0	0	1161
8	KOZHIKODE	3658	49	2	1	3	0	3713	3661	49	1	1	0	1	3713
9	MALAPPURAM	9000	116	37	2	0	0	9155	8893	215	28	13	5	1	9155
10	PALAKKAD	2879	50	9	2	0	1	2941	2637	249	38	5	4	8	2941
11	PATHANAMTHITTA	1497	36	7	1	0	0	1541	1408	104	26	3	0	0	1541
12	THIRUVANANTHAPURAM	1426	41	2	2	2	2	1475	1394	74	4	0	1	2	1475
13	THRISSUR	17657	126	123	11	3	47	17967	1776	160	26	11	1	3	1796
14	WAYANAD	36	1	0	0	0	0	37	37	0	0	0	0	0	37
	Total	49824	710	205	29	17	66	50851	4883	1538	332	82	25	39	5085

TABLE 1.16: DISTRIBUTION OF DUGWELLS (IN USE, TEMPORARILY NOT IN USE) ACCORDING TO AVERAGE HOURS OF PUMPING PER DAY**(In Number)**

Sl. No	District	During Kharif Season							During Rabi Season						
		0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (3 to 8)	0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	1014	20	2	0	0	4	1040	976	56	4	1	0	3	1040
2	ERNAKULAM	4661	102	18	12	0	1	4794	4381	372	33	6	0	2	4794
3	IDUKKI	673	1	0	0	0	0	674	664	10	0	0	0	0	674
4	KANNUR	3569	7	1	0	0	4	3581	3562	19	0	0	0	0	3581
5	KASARGOD	1546	81	2	0	0	0	1629	1594	32	3	0	0	0	1629
6	KOLLAM	1090	46	2	1	1	3	1143	1077	63	2	0	0	1	1143
7	KOTTAYAM	1155	3	2	0	0	1	1161	1085	75	0	1	0	0	1161
8	KOZHIKODE	3662	47	1	0	0	3	3713	3664	48	1	0	0	0	3713
9	MALAPPURAM	8947	190	15	1	0	2	9155	8783	356	12	2	0	2	9155
10	PALAKKAD	2800	117	20	3	0	1	2941	2656	223	58	1	0	3	2941
11	PATHANAMTHITTA	1494	45	2	0	0	0	1541	1400	137	4	0	0	0	1541
12	THIRUVANANTHAPURAM	1436	32	3	0	0	4	1475	1401	71	0	0	0	3	1475
13	THRISSUR	17787	130	5	0	0	45	17967	1782	133	5	0	0	1	17967
14	WAYANAD	35	2	0	0	0	0	37	35	2	0	0	0	0	37
	Total	49869	823	73	17	1	68	50851	4910	159	122	11	0	15	50851

TABLE 1.17: DISTRIBUTION OF DUGWELLS ACCORDING TO DEPTH

(In Number)

Sl. No.	District	No. by the depth of dugwell					
		0 to 20 mts	20 to 40 mts	40 to 60 mts	60 to 70 mts	>70 mts	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1139	6	4	0	0	1149
2	ERNAKULAM	4888	7	1	0	0	4896
3	IDUKKI	752	7	3	0	1	763
4	KANNUR	3633	43	7	0	4	3687
5	KASARGOD	1592	36	4	2	1	1635
6	KOLLAM	1206	74	0	0	1	1281
7	KOTTAYAM	1203	2	3	0	0	1208
8	KOZHIKODE	3823	12	1	0	2	3838
9	MALAPPURAM	9226	21	5	2	3	9257
10	PALAKKAD	2920	177	15	4	5	3121
11	PATHANAMTHITTA	1592	41	0	0	0	1633
12	THIRUVANANTHAPURAM	1504	75	4	0	0	1583
13	THRISSUR	17950	69	14	1	2	18036
14	WAYANAD	47	0	1	0	0	48
	Total	51475	570	62	9	19	52135

TABLE 1.18: DISTRIBUTION OF DUGWELLS IN AND OUTSIDE THE COMMAND OF MAJOR/MEDIUM PROJECTS**(In Number)**

Sl. No.	District	Outside command	No. of Dug wells inside the command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1137	3	4	0	5	12	1149
2	ERNAKULAM	3867	440	368	38	183	1029	4896
3	IDUKKI	763	0	0	0	0	0	763
4	KANNUR	3519	153	3	0	12	168	3687
5	KASARGOD	1614	0	21	0	0	21	1635
6	KOLLAM	1251	1	10	0	19	30	1281
7	KOTTAYAM	1172	23	1	0	12	36	1208
8	KOZHIKODE	3553	184	96	0	5	285	3838
9	MALAPPURAM	9253	1	0	0	3	4	9257
10	PALAKKAD	2883	21	208	5	4	238	3121
11	PATHANAMTHITTA	1491	62	52	24	4	142	1633
12	THIRUVANANTHAPURAM	1494	60	29	0	0	89	1583
13	THRISSUR	17484	375	156	7	14	552	18036
14	WAYANAD	48	0	0	0	0	0	48
Total		49529	1323	948	74	261	2606	52135

TABLE 1.19.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH ALL DUGWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	619.75	97.17	162.40	265.61	98.20	623.38
2	ERNAKULAM	2538.76	389.62	475.69	1485.72	219.96	2570.99
3	IDUKKI	633.68	43.29	42.60	492.96	58.23	637.08
4	KANNUR	2118.87	142.40	167.77	1596.07	238.55	2144.79
5	KASARGOD	1049.07	79.81	51.94	867.87	77.21	1076.83
6	KOLLAM	1370.13	357.33	304.07	508.56	248.86	1418.82
7	KOTTAYAM	1581.92	463.45	499.29	564.64	481.77	2009.15
8	KOZHIKODE	1740.85	151.62	170.63	1277.26	239.81	1839.32
9	MALAPPURAM	5103.02	389.55	687.61	3395.94	702.94	5176.04
10	PALAKKAD	2580.27	365.23	777.85	1475.69	108.92	2727.69
11	PATHANAMTHITTA	584.16	138.70	172.68	286.48	73.48	671.34
12	THIRUVANANTHAPURAM	725.39	152.86	155.59	349.35	136.70	794.50
13	THRISSUR	5942.75	261.30	236.99	4990.70	460.19	5949.18
14	WAYANAD	71.66	13.01	5.50	43.49	9.66	71.66
	Total	26660.28	3045.34	3910.61	17600.34	3154.48	27710.77

TABLE 1.19.2: CCA AND SEASON WISE POTENTIAL CREATED THROUGH DUGWELLS [IN USE]**(In Hectares)**

Sl. No.	District	Culturable CommandArea	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	619.07	97.02	161.95	265.61	98.12	622.70
2	ERNAKULAM	2518.48	384.57	469.85	1479.75	216.50	2550.67
3	IDUKKI	611.25	42.69	42.52	471.61	57.83	614.65
4	KANNUR	2116.37	142.40	167.77	1593.57	238.55	2142.29
5	KASARGOD	1048.42	79.81	51.54	867.75	77.08	1076.18
6	KOLLAM	1362.57	355.10	302.74	505.90	247.52	1411.26
7	KOTTAYAM	1580.94	463.45	499.29	563.66	481.77	2008.17
8	KOZHIKODE	1737.21	150.69	169.70	1274.55	239.51	1834.45
9	MALAPPURAM	5100.59	389.55	687.61	3393.71	702.74	5173.61
10	PALAKKAD	2526.49	355.98	770.15	1444.91	102.67	2673.71
11	PATHANAMTHITTA	583.62	138.29	172.68	286.44	73.39	670.80
12	THIRUVANANTHAPURAM	719.59	151.55	154.38	346.30	136.31	788.54
13	THRISSUR	5940.24	261.30	236.66	4988.52	460.19	5946.67
14	WAYANAD	71.66	13.01	5.50	43.49	9.66	71.66
	Total	26536.50	3025.41	3892.34	17525.77	3141.84	27585.36

TABLE 1.19.3: CCA AND SEASON WISE POTENTIAL CREATED THROUGH DUGWELLS [TEMPORARILY NOT IN USE]**(In Hectares)**

Sl. No.	District	Culturable CommandArea	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0.22	0.00	0.22	0.00	0.00	0.22
2	ERNAKULAM	6.29	0.37	0.94	3.50	1.52	6.33
3	IDUKKI	22.43	0.60	0.08	21.35	0.40	22.43
4	KANNUR	2.50	0.00	0.00	2.50	0.00	2.50
5	KASARGOD	0.65	0.00	0.40	0.12	0.13	0.65
6	KOLLAM	7.56	2.23	1.33	2.66	1.34	7.56
7	KOTTAYAM	0.98	0.00	0.00	0.98	0.00	0.98
8	KOZHIKODE	2.58	0.40	0.40	2.18	0.30	3.28
9	MALAPPURAM	2.18	0.00	0.00	1.98	0.20	2.18
10	PALAKKAD	50.33	9.25	7.70	27.33	6.25	50.53
11	PATHANAMTHITTA	0.54	0.41	0.00	0.04	0.09	0.54
12	THIRUVANANTHAPURAM	5.65	1.26	1.16	3.00	0.39	5.81
13	THRISSUR	2.51	0.00	0.33	2.18	0.00	2.51
	Total	104.42	14.52	12.56	67.82	10.62	105.52

TABLE 1.19.4: CCA AND SEASON WISE POTENTIAL CREATED THROUGH DUGWELLS [PERMANENTLY NOT IN USE]**(In Hectares)**

Sl. No.	District	Culturable CommandArea	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0.46	0.15	0.23	0.00	0.08	0.46
2	ERNAKULAM	13.99	4.68	4.90	2.47	1.94	13.99
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00
5	KOZHIKODE	1.06	0.53	0.53	0.53	0.00	1.59
6	MALAPPURAM	0.25	0.00	0.00	0.25	0.00	0.25
7	PALAKKAD	3.45	0.00	0.00	3.45	0.00	3.45
8	THIRUVANANTHAPURAM	0.15	0.05	0.05	0.05	0.00	0.15
9	THRISSUR	0.00	0.00	0.00	0.00	0.00	0.00
	Total	19.36	5.41	5.71	6.75	2.02	19.89

TABLE 1.20.1: SEASON WISE POTENTIAL UTILISED THROUGH DUGWELLS- ALL SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	1.56	1.17	2.73	1.69	7.15	94.08	159.5	262.10	95.52	611.23	95.64	160.70	264.83	97.21	618.38
2	ERNAKULAM	120.80	161.78	373.39	36.34	692.31	236.45	285.1	1084.92	170.48	1776.99	357.25	446.92	1458.31	206.82	2469.30
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	42.78	41.48	489.90	55.83	629.99	42.78	41.48	489.90	55.83	629.99
4	KANNUR	0.00	8.02	32.28	8.45	48.75	92.04	147.5	1537.24	220.59	1997.38	92.04	155.53	1569.52	229.04	2046.13
5	KASARGOD	0.00	0.00	4.93	0.00	4.93	70.58	44.67	745.33	74.18	934.76	70.58	44.67	750.26	74.18	939.69
6	KOLLAM	4.36	4.40	87.50	3.63	99.89	321.25	270.4	404.00	241.18	1236.91	325.61	274.88	491.50	244.81	1336.80
7	KOTTAYAM	2.54	5.43	8.14	5.05	21.16	457.17	493.8	553.81	476.54	1981.34	459.71	499.25	561.95	481.59	2002.50
8	KOZHIKODE	26.55	66.94	83.02	27.86	204.37	121.00	100.4	1182.39	205.45	1609.30	147.55	167.40	1265.41	233.31	1813.67
9	MALAPPURAM	2.21	0.52	1.69	0.40	4.82	292.42	648.4	3356.76	662.37	4960.03	294.63	649.00	3358.45	662.77	4964.85
10	PALAKKAD	127.35	157.08	83.68	4.27	372.38	236.62	617.9	1384.32	101.92	2340.81	363.97	775.03	1468.00	106.19	2713.19
11	PATHANAMTHITTA	5.27	5.56	23.10	4.38	38.31	119.68	154.9	246.00	58.70	579.35	124.95	160.53	269.10	63.08	617.66
12	THIRUVANANTHAPURAM	4.29	3.95	10.98	4.81	24.03	139.06	148.1	331.43	125.90	744.51	143.35	152.07	342.41	130.71	768.54
13	THRISSUR	5.70	5.73	193.07	4.59	209.09	255.28	230.6	4788.98	453.64	5728.53	260.98	236.36	4982.05	458.23	5937.62
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	13.01	5.50	43.49	8.66	70.66	13.01	5.50	43.49	8.66	70.66
	Total	300.63	420.58	904.51	101.47	1727.19	2491.4	3348	16410.7	2950.96	25201.79	2792.05	3769.3	17315.18	3052.43	26928.9

TABLE 1.20.2: SEASON WISE POTENTIAL UTILISED THROUGH DUGWELLS [IN USE]

(In Hectares)

Sl. No	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to 11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	1.56	1.17	2.73	1.69	7.15	94.08	159.43	262.10	95.52	611.13	95.64	160.60	264.83	97.21	618.28
2	ERNAKULAM	120.49	161.28	372.25	35.06	689.08	236.39	284.94	1083.08	170.38	1774.79	356.88	446.22	1455.33	205.44	2463.87
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	42.18	41.40	468.55	55.43	607.56	42.18	41.40	468.55	55.43	607.56
4	KANNUR	0.00	8.02	32.28	8.45	48.75	92.04	147.51	1535.67	220.59	1995.81	92.04	155.53	1567.95	229.04	2044.56
5	KASARGOD	0.00	0.00	4.93	0.00	4.93	70.58	44.27	745.21	74.05	934.11	70.58	44.27	750.14	74.05	939.04
6	KOLLAM	4.36	4.40	87.50	3.63	99.89	319.12	269.15	401.34	239.84	1229.45	323.48	273.55	488.84	243.47	1329.34
7	KOTTAYAM	2.54	5.43	8.14	5.05	21.16	457.17	493.82	552.83	476.54	1980.36	459.71	499.25	560.97	481.59	2001.52
8	KOZHIKODE	26.55	66.94	83.02	27.86	204.37	120.60	100.06	1180.21	205.15	1606.02	147.15	167.00	1263.23	233.01	1810.39
9	MALAPPURAM	2.21	0.52	1.69	0.40	4.82	292.42	648.48	3354.78	662.22	4957.90	294.63	649.00	3356.47	662.62	4962.72
10	PALAKKAD	127.35	156.88	82.86	4.27	371.36	227.37	610.45	1357.81	95.67	2291.30	354.72	767.33	1440.67	99.94	2662.66
11	PATHANAMTHITTA	5.27	5.56	23.10	4.38	38.31	119.27	154.97	245.96	58.70	578.90	124.54	160.53	269.06	63.08	617.21
12	THIRUVANANTHAPURAM	4.29	3.95	10.98	4.81	24.03	137.80	146.99	328.43	125.55	738.77	142.09	150.94	339.41	130.36	762.80
13	THRISSUR	5.70	5.73	193.07	4.59	209.09	255.28	230.30	4786.80	453.64	5726.02	260.98	236.03	4979.87	458.23	5935.11
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	13.01	5.50	43.49	8.66	70.66	13.01	5.50	43.49	8.66	70.66
	Total	300.32	419.88	902.55	100.19	1722.94	2477.31	3337.2	16346.26	2941.94	25102.78	2777.63	3757.15	17248.81	3042.13	26825.7

TABLE 1.20.3 SEASON WISE POTENTIAL UTILISED THROUGH DUGWELLS [TEMPORARILY NOT IN USE]

(In Hectares)

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to 11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.10
2	ERNAKULAM	0.31	0.50	1.14	1.28	3.23	0.06	0.20	1.84	0.10	2.20	0.37	0.70	2.98	1.38	5.43
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.60	0.08	21.35	0.40	22.43	0.60	0.08	21.35	0.40	22.43
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00	1.57	0.00	0.00	1.57	0.00	1.57
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.12	0.13	0.65	0.00	0.40	0.12	0.13	0.65
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	2.13	1.33	2.66	1.34	7.46	2.13	1.33	2.66	1.34	7.46
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.98	0.00	0.00	0.98	0.00	0.98
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	0.40	0.40	2.18	0.30	3.28	0.40	0.40	2.18	0.30	3.28
9	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.15	2.13	0.00	0.00	1.98	0.15	2.13
10	PALAKKAD	0.00	0.20	0.82	0.00	1.02	9.25	7.50	26.51	6.25	49.51	9.25	7.70	27.33	6.25	50.53
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.04	0.00	0.45	0.41	0.00	0.04	0.00	0.45
12	THIRUVANANTHAPURAM	0.00	0.00	0.00	0.00	0.00	1.26	1.13	3.00	0.35	5.74	1.26	1.13	3.00	0.35	5.74
13	THRISSUR	0.00	0.00	0.00	0.00	0.00	0.00	0.33	2.18	0.00	2.51	0.00	0.33	2.18	0.00	2.51
	Total	0.31	0.70	1.96	1.28	4.25	14.11	11.47	64.41	9.02	99.01	14.42	12.17	66.37	10.30	103.26

TABLE 1.21 DISTRIBUTION OF DUGWELLS (IN USE) ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl. No.	District	No. of Dug wells in use	No. of Dug wells without constraints	No. of Dug well Having Constraints in utilisation of potential						
				Non Availability of Adequate Power	Mechanical Break Down	Less discharge of Water	Non - Availability of Finance	Lack of Maintenance	Others	Total (5 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	1138	1120	0	2	16	0	0	0	18
2	ERNAKULAM	4861	4623	0	5	58	2	4	169	238
3	IDUKKI	757	753	2	1	1	0	0	0	4
4	KANNUR	3680	3642	0	2	28	1	1	6	38
5	KASARGOD	1633	1605	23	0	0	0	2	3	28
6	KOLLAM	1267	1207	3	2	27	1	2	25	60
7	KOTTAYAM	1207	1205	0	0	1	0	0	1	2
8	KOZHIKODE	3832	3766	1	36	11	0	1	17	66
9	MALAPPURAM	9247	9034	5	4	4	0	0	200	213
10	PALAKKAD	3046	3034	0	0	9	0	0	3	12
11	PATHANAMTHITTA	1631	1616	0	2	10	0	0	3	15
12	THIRUVANANTHAPURAM	1574	1551	0	1	9	9	0	4	23
13	THRISSUR	18031	18030	0	0	1	0	0	0	1
14	WAYANAD	48	46	2	0	0	0	0	0	2
Total		51952	51232	36	55	175	13	10	431	720

SHALLOW TUBEWELLS

TABLE 2.1: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO OWNERSHIP**(In Number)**

Sl. No	District	Public					Private			
		Govt. Owned	Co-op Society	Panchayat Owned	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	Grand Total (7 + 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	5	0	1	7	13	9	640	649	662
2	ERNAKULAM	2	0	1	4	7	5	164	169	176
3	IDUKKI	0	0	0	0	0	0	9	9	9
4	KANNUR	0	0	1	0	1	1	50	51	52
5	KASARGOD	0	0	0	3	3	0	140	140	143
6	KOLLAM	1	0	1	1	3	0	8	8	11
7	KOTTAYAM	0	0	1	0	1	0	22	22	23
8	KOZHIKODE	0	0	0	0	0	10	38	48	48
9	MALAPPURAM	0	0	0	1	1	6	324	330	331
10	PALAKKAD	0	0	79	0	79	34	157	191	270
11	PATHANAMTHITTA	0	0	0	0	0	0	8	8	8
12	THIRUVANANTHAPURAM	0	0	0	0	0	1	5	6	6
13	THRISSUR	0	0	0	0	0	1	1406	1407	1407
	Total	8	0	84	16	108	67	2971	3038	3146

TABLE 2.2.1: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No	District	No. of Shallow tube well owned by						
		ScheduledCaste	Scheduled Tribe	OBC	Others	Total (3 to 6)	Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	8	4	207	421	640	22	662
2	ERNAKULAM	2	0	59	103	164	12	176
3	IDUKKI	0	0	0	9	9	0	9
4	KANNUR	1	0	34	15	50	2	52
5	KASARGOD	0	1	40	99	140	3	143
6	KOLLAM	0	0	4	4	8	3	11
7	KOTTAYAM	3	1	1	17	22	1	23
8	KOZHIKODE	1	1	24	12	38	10	48
9	MALAPPURAM	7	4	203	110	324	7	331
10	PALAKKAD	16	0	101	40	157	113	270
11	PATHANAMTHITTA	0	0	3	5	8	0	8
12	THIRUVANANTHAPURAM	0	0	2	3	5	1	6
13	THRISSUR	11	4	971	420	1406	1	1407
	Total	49	15	1649	1258	2971	175	3146

TABLE 2.2.2: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No	District	No. of Shallow tube well owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	1	1	50	74	126
2	ERNAKULAM	0	0	14	34	48
3	IDUKKI	0	0	0	2	2
4	KANNUR	0	0	12	3	15
5	KASARGOD	0	1	15	29	45
6	KOTTAYAM	1	0	1	1	3
7	KOZHIKODE	1	0	5	1	7
8	MALAPPURAM	1	1	33	22	57
9	PALAKKAD	6	0	30	7	43
10	PATHANAMTHITTA	0	0	2	2	4
11	THIRUVANANTHAPURAM	0	0	0	2	2
12	THRISSUR	2	1	237	94	334
	Total	12	4	399	271	686

TABLE 2.3.1: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No	District	No. of Shallow tube well by size class of owned					
		Marginal (0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	599	37	1	3	0	640
2	ERNAKULAM	155	7	2	0	0	164
3	IDUKKI	6	3	0	0	0	9
4	KANNUR	48	0	2	0	0	50
5	KASARGOD	133	4	0	2	1	140
6	KOLLAM	7	1	0	0	0	8
7	KOTTAYAM	17	3	2	0	0	22
8	KOZHIKODE	31	5	2	0	0	38
9	MALAPPURAM	282	30	11	1	0	324
10	PALAKKAD	99	40	11	6	1	157
11	PATHANAMTHITTA	5	2	1	0	0	8
12	THIRUVANANTHAPURAM	5	0	0	0	0	5
13	THRISSUR	1382	24	0	0	0	1406
	Total	2769	156	32	12	2	2971

TABLE 2.3.2: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO THE INDIVIDUAL FEMALE OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. Shallow tubewells by size class of owner					
		Marginal (0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	118	7	0	1	0	126
2	ERNAKULAM	46	2	0	0	0	48
3	IDUKKI	2	0	0	0	0	2
4	KANNUR	15	0	0	0	0	15
5	KASARGOD	43	1	0	1	0	45
6	KOTTAYAM	2	1	0	0	0	3
7	KOZHIKODE	7	0	0	0	0	7
8	MALAPPURAM	46	8	3	0	0	57
9	PALAKKAD	20	17	3	3	0	43
10	PATHANAMTHITTA	4	0	0	0	0	4
11	THIRUVANANTHAPURAM	2	0	0	0	0	2
12	THRISSUR	327	7	0	0	0	334
	Total	632	43	6	5	0	686

TABLE 2.4: DISTRIBUTION OF SHALLOW TUBEWELLS AND COST OF CONSTRUCTION**(In Rs. 000)**

Sl. No.	District	Number and Cost of Construction of Shallow Tube Wells Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	346	16373	161	9709	129	8760	20	1215	6	291	662	36347
2	ERNAKULAM	149	1715	14	268	6	149	6	152	1	20	176	2303
3	IDUKKI	4	172	1	100	2	88	1	17	1	75	9	452
4	KANNUR	44	1654	5	295	0	0	0	0	3	180	52	2129
5	KASARGOD	79	2526	5	111	8	260	28	1067	23	914	143	4878
6	KOLLAM	2	58	4	235	0	0	2	46	3	87	11	426
7	KOTTAYAM	20	473	2	30	1	100	0	0	0	0	23	603
8	KOZHIKODE	21	690	6	213	3	260	3	160	15	528	48	1850
9	MALAPPURAM	274	6968	22	696	9	432	16	707	10	472	331	9275
10	PALAKKAD	194	6056	36	385	29	531	4	122	7	362	270	7456
11	PATHANAMTHITTA	2	75	3	142	1	40	1	100	1	30	8	387
12	THIRUVANANTHAPURAM	1	25	0	0	2	140	2	18	1	25	6	208
13	THRISSUR	1039	19595	284	8906	59	1414	22	505	3	128	1407	30547
	Total	2175	56380	543	21090	249	12174	105	4109	74	3112	3146	96861

TABLE 2.5.1: DISTRIBUTION OF SHALLOW TUBEWELLS BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No.	District	No. of Shallow tube well according to the annual cost of maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	330	331	1	0	0	662
2	ERNAKULAM	137	39	0	0	0	176
3	IDUKKI	7	2	0	0	0	9
4	KANNUR	46	5	1	0	0	52
5	KASARGOD	81	62	0	0	0	143
6	KOLLAM	7	2	2	0	0	11
7	KOTTAYAM	14	9	0	0	0	23
8	KOZHIKODE	37	11	0	0	0	48
9	MALAPPURAM	273	53	5	0	0	331
10	PALAKKAD	175	95	0	0	0	270
11	PATHANAMTHITTA	7	0	1	0	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	6
13	THRISSUR	906	499	2	0	0	1407
	Total	2026	1108	12	0	0	3146

TABLE.2.5.2: AVERAGE COST OF CONSTRUCTION, MACHINERY , ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR SHALLOW TUBEWELLS**(Amount in thousands)**

Sl. No.	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Shallowtube well for which subsidywas received	Average amountof subsidy	No. of Shallowtube well for which subsidywas received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	55	13	2	10	2	9	2
2	ERNAKULAM	13	6	1	3	14	17	3
3	IDUKKI	50	26	1	1	10	0	0
4	KANNUR	41	12	1	5	24	8	8
5	KASARGOD	34	15	3	63	8	2	1
6	KOLLAM	39	20	7	1	10	3	12
7	KOTTAYAM	26	6	1	10	4	2	3
8	KOZHIKODE	39	12	1	6	10	22	5
9	MALAPPURAM	28	13	1	6	7	90	8
10	PALAKKAD	28	8	1	10	10	63	2
11	PATHANAMTHITTA	48	19	3	0	0	1	6
12	THIRUVANANTHAPURAM	35	12	0	1	3	2	10
13	THRISSUR	22	7	2	0	0	0	0
	Total	31	10	1	116	8	219	5

TABLE 2.6: DISTRIBUTION OF SHALLOW TUBEWELLS UNDER INDIVIDUAL OWNERSHIP ACCORDING TO MAJOR SOURCE OF FINANCE**(In Number)**

Sl. No.	District	With Single Source of Finance						With two Sources of Finance								Grand Total (8 +16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to 15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	0	258	0	1	259	8	12	1	0	0	0	360	381	640
2	ERNAKULAM	0	1	148	0	2	151	2	10	0	0	0	0	1	13	164
3	IDUKKI	1	0	6	0	1	8	1	0	0	0	0	0	0	1	9
4	KANNUR	0	3	32	0	0	35	3	8	3	0	0	0	1	15	50
5	KASARGOD	0	0	77	0	0	77	1	62	0	0	0	0	0	63	140
6	KOLLAM	0	1	6	0	0	7	0	1	0	0	0	0	0	1	8
7	KOTTAYAM	0	0	11	0	0	11	1	8	0	1	0	0	1	11	22
8	KOZHIKODE	0	0	16	0	0	16	2	14	0	1	0	0	5	22	38
9	MALAPPURAM	0	1	216	0	5	222	1	82	6	3	0	0	10	102	324
10	PALAKKAD	3	1	92	1	46	143	2	1	1	0	0	0	10	14	157
11	PATHANAMTHITTA	0	0	7	0	0	7	0	1	0	0	0	0	0	1	8
12	THIRUVANANTHAPURAM	0	0	3	0	0	3	1	1	0	0	0	0	0	2	5
13	THRISSUR	0	1	731	4	0	736	16	0	25	0	4	0	625	670	1406
	Total	4	8	1603	5	55	1675	38	200	36	5	4	0	1013	1296	2971

TABLE 2.7: DISTRIBUTION OF SHALLOW TUBEWELLS BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Shallow tube well in use	Shallow tube well not in use			Grand Total(3+6)	Number of Schemes meant only for re-chargeof ground water		
			Temporarily	Permanently	Total (4+5)		In use	Not in use (Temp + Pmt)	Total (8+9)
(1)	(2)	3	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	662	0	0	0	662	0	0	0
2	ERNAKULAM	173	3	0	3	176	5	2	7
3	IDUKKI	8	0	1	1	9	0	1	1
4	KANNUR	52	0	0	0	52	0	0	0
5	KASARGOD	143	0	0	0	143	2	0	2
6	KOLLAM	9	2	0	2	11	0	0	0
7	KOTTAYAM	23	0	0	0	23	1	0	1
8	KOZHIKODE	48	0	0	0	48	0	0	0
9	MALAPPURAM	330	1	0	1	331	0	0	0
10	PALAKKAD	249	5	16	21	270	0	20	20
11	PATHANAMTHITTA	8	0	0	0	8	0	0	0
12	THIRUVANANTHAPURAM	6	0	0	0	6	0	0	0
13	THRISSUR	1407	0	0	0	1407	0	0	0
	Total	3118	11	17	28	3146	8	23	31

TABLE 2.8: DISTRIBUTION OF SHALLOW TUBEWELLS TEMPORARILY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Non Availability of Adequate Power/Fuel		Mechanical Break Down		Less discharge of Water		Non - Availability of Finance		Lack of Maintenance		Others		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ERNAKULAM	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	2	0.00	3	0.00
2	KOLLAM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00	2	0.00
3	MALAPPURAM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
4	PALAKKAD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	5	0.00	5	0.00
	Total	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	10	0.00	11	0.00

TABLE 2.9: DISTRIBUTION OF SHALLOW TUBEWELLS PERMANENTLY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/ Medium Irrigation Projects		Other reasons		Total	
		No	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	IDUKKI	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
2	PALAKKAD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	16	0.00	16	0.00
	Total	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	17	0.00	17	0.00

TABLE 2.10: DISTRIBUTION OF SHALLOW TUBE WELLS IN USE ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED**(In Number/In Ha)**

Sl. No.	District	No. & IPU of Shallow Tube Well Schemes According to Water Distribution System															
		Open Water (Lined/Pucca)		Open Water (Unlined/Kutchra)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	6	0.96	5	1.42	11	12.00	628	229.12	5	7.44	2	1.88	5	1.56	662	254.38
2	ERNAKULAM	3	1.85	18	6.82	7	3.24	129	49.07	2	1.30	4	0.89	10	5.97	173	69.14
3	IDUKKI	0	0.00	0	0.00	0	0.00	5	3.51	1	0.40	1	0.20	1	0.30	8	4.41
4	KANNUR	0	0.00	1	0.12	0	0.00	42	10.72	4	5.60	3	3.07	2	0.14	52	19.65
5	KASARGOD	0	0.00	6	5.80	9	3.07	120	34.13	0	0.00	7	6.74	1	0.56	143	50.30
6	KOLLAM	0	0.00	0	0.00	1	0.54	7	1.59	1	0.50	0	0.00	0	0.00	9	2.63
7	KOTTAYAM	1	0.20	1	0.30	4	0.64	16	8.30	1	0.72	0	0.00	0	0.00	23	10.16
8	KOZHIKODE	4	6.45	2	0.94	3	4.94	29	13.82	3	3.22	4	5.04	3	2.96	48	37.37
9	MALAPPURAM	3	1.46	82	68.35	47	18.03	172	64.46	7	5.75	17	5.33	2	1.30	330	164.68
10	PALAKKAD	22	10.36	10	13.51	4	3.82	140	191.08	36	98.50	5	1.64	32	35.84	249	354.75
11	PATHANAMTHITTA	0	0.00	0	0.00	0	0.00	7	5.26	0	0.00	0	0.00	1	0.20	8	5.46
12	THIRUVANANTHAPURAM	0	0.00	2	0.32	0	0.00	4	1.12	0	0.00	0	0.00	0	0.00	6	1.44
13	THRISSUR	22	4.53	199	62.90	393	81.51	728	153.03	9	2.05	56	12.85	0	0.00	1407	316.87
	Total	61	25.81	326	160.48	479	127.79	2027	765.21	69	125.48	99	37.64	57	48.83	3118	1291.24

TABLE 2.11: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SHALLOW TUBEWELLS ACCORDING TO WATER LIFTING DEVICES**(In Number)**

Sl. No.	District	Number of schemes by lifting Device					
		Submersible Pump	Centrifugal Pump	Turbine	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	299	355	1	2	5	662
2	ERNAKULAM	30	138	0	6	2	176
3	IDUKKI	7	0	1	0	0	8
4	KANNUR	16	29	6	1	0	52
5	KASARGOD	45	97	1	0	0	143
6	KOLLAM	2	2	0	7	0	11
7	KOTTAYAM	12	11	0	0	0	23
8	KOZHIKODE	23	21	3	0	1	48
9	MALAPPURAM	70	249	9	2	1	331
10	PALAKKAD	56	147	2	47	2	254
11	PATHANAMTHITTA	6	1	1	0	0	8
12	THIRUVANANTHAPURAM	2	2	2	0	0	6
13	THRISSUR	422	976	3	4	2	1407
Total		990	2028	29	69	13	3129

TABLE 2.12: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SHALLOW TUBEWELLS ACCORDING TO SOURCE OF ENERGY**(In Number)**

Sl. No.	District	Number of schemes by source of energy						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	652	8	0	0	2	0	662
2	ERNAKULAM	167	3	0	0	6	0	176
3	IDUKKI	8	0	0	0	0	0	8
4	KANNUR	47	3	0	0	1	1	52
5	KASARGOD	142	1	0	0	0	0	143
6	KOLLAM	3	0	0	0	7	1	11
7	KOTTAYAM	22	1	0	0	0	0	23
8	KOZHIKODE	45	3	0	0	0	0	48
9	MALAPPURAM	317	8	0	0	2	4	331
10	PALAKKAD	200	6	1	0	47	0	254
11	PATHANAMTHITTA	6	2	0	0	0	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	0	6
13	THRISSUR	1399	4	0	0	4	0	1407
Total		3014	39	1	0	69	6	3129

TABLE 2.13: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SHALLOW TUBEWELLS ACCORDING TO HORSE POWER OF LIFTING DEVICE**(In Number)**

Sl. No.	District	No. of Shallow tube well by horse power of lifting devices							Total (9 to 10)	
		0-2 hp	2-4 hp	4-6 hp	6-8 hp	8-10 hp	above 10 hp	Total (3 to 8)		Schemes without horsepower
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	591	67	2	0	0	0	660	2	662
2	ERNAKULAM	155	12	3	0	0	0	170	6	176
3	IDUKKI	4	0	4	0	0	0	8	0	8
4	KANNUR	48	2	1	0	0	0	51	1	52
5	KASARGOD	139	2	2	0	0	0	143	0	143
6	KOLLAM	3	1	0	0	0	0	4	7	11
7	KOTTAYAM	19	0	4	0	0	0	23	0	23
8	KOZHIKODE	43	5	0	0	0	0	48	0	48
9	MALAPPURAM	318	8	2	0	0	1	329	2	331
10	PALAKKAD	132	16	57	2	0	0	207	47	254
11	PATHANAMTHITTA	8	0	0	0	0	0	8	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	0	6	0	6
13	THRISSUR	983	60	360	0	0	0	1403	4	1407
	Total	2449	173	435	2	0	1	3060	69	3129

TABLE 2.14: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SHALLOW TUBEWELLS ACCORDING TO TOTAL PUMPING HOURS OF OPERATION**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (3 to 8)	<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	615	42	1	1	0	1	660	578	73	5	1	1	2	660
2	ERNAKULAM	165	1	1	1	0	2	170	160	3	5	0	1	1	170
3	IDUKKI	8	0	0	0	0	0	8	8	0	0	0	0	0	8
4	KANNUR	51	0	0	0	0	0	51	50	1	0	0	0	0	51
5	KASARGOD	143	0	0	0	0	0	143	139	4	0	0	0	0	143
6	KOLLAM	4	0	0	0	0	0	4	4	0	0	0	0	0	4
7	KOTTAYAM	23	0	0	0	0	0	23	22	1	0	0	0	0	23
8	KOZHIKODE	42	6	0	0	0	0	48	47	1	0	0	0	0	48
9	MALAPPURAM	326	2	1	0	0	0	329	324	1	3	0	1	0	329
10	PALAKKAD	203	4	0	0	0	0	207	195	8	1	0	0	3	207
11	PATHANAMTHITTA	8	0	0	0	0	0	8	8	0	0	0	0	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	0	6	6	0	0	0	0	0	6
13	THRISSUR	1402	1	0	0	0	0	1403	1399	3	1	0	0	0	1403
	Total	2996	56	3	2	0	3	3060	2940	95	15	1	3	6	3060

TABLE 2.15: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SHALLOW TUBEWELLS ACCORDING TO AVERAGE HOURS OF PUMPING PER DAY**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (3to 8)	0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	641	17	1	0	0	1	660	625	31	3	0	0	1	660
2	ERNAKULAM	165	2	0	0	0	3	170	162	7	0	0	0	1	170
3	IDUKKI	8	0	0	0	0	0	8	8	0	0	0	0	0	8
4	KANNUR	51	0	0	0	0	0	51	51	0	0	0	0	0	51
5	KASARGOD	143	0	0	0	0	0	143	141	2	0	0	0	0	143
6	KOLLAM	4	0	0	0	0	0	4	4	0	0	0	0	0	4
7	KOTTAYAM	23	0	0	0	0	0	23	22	1	0	0	0	0	23
8	KOZHIKODE	48	0	0	0	0	0	48	48	0	0	0	0	0	48
9	MALAPPURAM	324	5	0	0	0	0	329	324	4	1	0	0	0	329
10	PALAKKAD	204	2	1	0	0	0	207	197	7	0	1	1	1	207
11	PATHANAMTHITTA	8	0	0	0	0	0	8	8	0	0	0	0	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	0	6	6	0	0	0	0	0	6
13	THRISSUR	1401	1	1	0	0	0	1403	139	3	1	0	0	0	1403
	Total	3026	27	3	0	0	4	3060	299	55	5	1	1	3	3060

TABLE 2.16: DISTRIBUTION OF SHALLOW TUBEWELLS ACCORDING TO DEPTH

(In Number)

Sl. No.	District	No. by the depth of Shallow tube well			
		0 to 20 mts	20 to 35 mts	>35 mts	Total (3 to 5)
(1)	(2)	(3)	(4)	(5)	(6)
1	ALAPPUZHA	655	7	0	662
2	ERNAKULAM	155	21	0	176
3	IDUKKI	4	5	0	9
4	KANNUR	31	21	0	52
5	KASARGOD	128	15	0	143
6	KOLLAM	4	7	0	11
7	KOTTAYAM	17	6	0	23
8	KOZHIKODE	28	20	0	48
9	MALAPPURAM	242	89	0	331
10	PALAKKAD	179	91	0	270
11	PATHANAMTHITTA	3	5	0	8
12	THIRUVANANTHAPURAM	4	2	0	6
13	THRISSUR	1147	260	0	1407
	Total	2597	549	0	3146

TABLE 2.17: DISTRIBUTION OF SHALLOW TUBEWELLS IN AND OUTSIDE THE COMMAND AREA OF MAJOR/MEDIUM PROJECTS**(In Number)**

Sl. No.	District	Outside command	No. of Shallow tube wells inside the command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	660	1	0	0	1	2	662
2	ERNAKULAM	171	0	2	0	3	5	176
3	IDUKKI	9	0	0	0	0	0	9
4	KANNUR	52	0	0	0	0	0	52
5	KASARGOD	143	0	0	0	0	0	143
6	KOLLAM	11	0	0	0	0	0	11
7	KOTTAYAM	23	0	0	0	0	0	23
8	KOZHIKODE	46	2	0	0	0	2	48
9	MALAPPURAM	331	0	0	0	0	0	331
10	PALAKKAD	257	4	9	0	0	13	270
11	PATHANAMTHITTA	8	0	0	0	0	0	8
12	THIRUVANANTHAPURAM	6	0	0	0	0	0	6
13	THRISSUR	1404	0	3	0	0	3	1407
	Total	3121	7	14	0	4	25	3146

TABLE 2.18.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH SHALLOW TUBEWELLS - ALL SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	248.30	45.88	69.12	92.96	51.39	259.35
2	ERNAKULAM	73.90	12.06	14.68	37.94	11.31	75.99
3	IDUKKI	4.41	0.00	0.00	4.41	0.00	4.41
4	KANNUR	18.90	1.05	2.30	9.51	8.11	20.97
5	KASARGOD	46.89	6.70	3.54	36.40	6.76	53.40
6	KOLLAM	4.53	1.28	0.33	2.54	0.38	4.53
7	KOTTAYAM	9.80	0.45	0.91	7.82	0.98	10.16
8	KOZHIKODE	36.83	11.67	3.23	18.35	4.90	38.15
9	MALAPPURAM	165.72	11.71	23.70	120.74	10.38	166.53
10	PALAKKAD	315.08	36.98	117.53	170.23	31.07	355.81
11	PATHANAMTHITTA	5.41	1.05	1.45	2.28	0.68	5.46
12	THIRUVANANTHAPURAM	1.48	0.07	0.06	0.77	0.58	1.48
13	THRISSUR	315.24	1.83	7.65	286.33	21.22	317.03
	Total	1246.49	130.73	244.50	790.28	147.76	1313.27

TABLE 2.18.2: CCA AND SEASON WISE POTENTIAL CREATED THROUGH IN USE SHALLOW TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable CommandArea	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	248.30	45.88	69.12	92.96	51.39	259.35
2	ERNAKULAM	73.68	12.06	14.68	37.72	11.31	75.77
3	IDUKKI	4.41	0.00	0.00	4.41	0.00	4.41
4	KANNUR	18.90	1.05	2.30	9.51	8.11	20.97
5	KASARGOD	46.89	6.70	3.54	36.40	6.76	53.40
6	KOLLAM	2.83	0.38	0.33	1.74	0.38	2.83
7	KOTTAYAM	9.80	0.45	0.91	7.82	0.98	10.16
8	KOZHIKODE	36.83	11.67	3.23	18.35	4.90	38.15
9	MALAPPURAM	165.52	11.71	23.70	120.54	10.38	166.33
10	PALAKKAD	314.78	36.98	117.53	169.93	31.07	355.51
11	PATHANAMTHITTA	5.41	1.05	1.45	2.28	0.68	5.46
12	THIRUVANANTHAPURAM	1.48	0.07	0.06	0.77	0.58	1.48
13	THRISSUR	315.24	1.83	7.65	286.33	21.22	317.03
	Total	1244.07	129.83	244.50	788.76	147.76	1310.85

TABLE 2.18.3: CCA AND SEASON WISE POTENTIAL CREATED THROUGH TEMPORARILY NOT IN USE SHALLOW TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ERNAKULAM	0.22	0.00	0.00	0.22	0.00	0.22
2	KOLLAM	1.70	0.90	0.00	0.80	0.00	1.70
3	MALAPPURAM	0.20	0.00	0.00	0.20	0.00	0.20
4	PALAKKAD	0.30	0.00	0.00	0.30	0.00	0.30
	Total	2.42	0.90	0.00	1.52	0.00	2.42

TABLE 2.19.1: SEASON WISE POTENTIAL UTILISED THROUGH SHALLOW TUBEWELLS- ALL SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.55	0.15	0.33	0.36	1.39	43.35	67.42	92.12	50.10	252.99	43.90	67.57	92.45	50.46	254.38
2	ERNAKULAM	0.65	0.65	2.30	0.60	4.20	8.57	13.05	34.17	9.37	65.16	9.22	13.70	36.47	9.97	69.36
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.41	0.00	4.41	0.00	0.00	4.41	0.00	4.41
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00	2.28	9.37	8.00	19.65	0.00	2.28	9.37	8.00	19.65
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	3.70	3.54	36.30	6.76	50.30	3.70	3.54	36.30	6.76	50.30
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	1.08	0.33	2.54	0.38	4.33	1.08	0.33	2.54	0.38	4.33
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.45	0.91	7.82	0.98	10.16	0.45	0.91	7.82	0.98	10.16
8	KOZHIKODE	0.00	0.00	0.21	0.00	0.21	11.17	3.11	17.99	4.89	37.16	11.17	3.11	18.20	4.89	37.37
9	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	11.21	23.60	119.69	10.38	164.88	11.21	23.60	119.69	10.38	164.88
10	PALAKKAD	2.58	10.12	4.13	0.33	17.16	34.35	107.2	165.56	30.74	337.89	36.93	117.36	169.69	31.07	355.05
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	1.05	1.45	2.28	0.68	5.46	1.05	1.45	2.28	0.68	5.46
12	THIRUVANANTHAPURAM	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.76	0.57	1.44	0.05	0.06	0.76	0.57	1.44
13	THRISSUR	0.00	0.28	0.85	0.00	1.13	1.78	7.37	285.38	21.21	315.74	1.78	7.65	286.23	21.21	316.87
	Total	3.78	11.20	7.82	1.29	24.09	116.76	230.3	778.39	144.06	1269.57	120.54	241.56	786.21	145.35	1293.6

TABLE 2.19.2: SEASON WISE POTENTIAL UTILISED THROUGH SHALLOW TUBEWELLS – IN USE**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.55	0.15	0.33	0.36	1.39	43.35	67.42	92.12	50.10	252.99	43.90	67.57	92.45	50.46	254.38
2	ERNAKULAM	0.65	0.65	2.30	0.60	4.20	8.57	13.05	33.95	9.37	64.94	9.22	13.70	36.25	9.97	69.14
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.41	0.00	4.41	0.00	0.00	4.41	0.00	4.41
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00	2.28	9.37	8.00	19.65	0.00	2.28	9.37	8.00	19.65
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	3.70	3.54	36.30	6.76	50.30	3.70	3.54	36.30	6.76	50.30
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.18	0.33	1.74	0.38	2.63	0.18	0.33	1.74	0.38	2.63
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.45	0.91	7.82	0.98	10.16	0.45	0.91	7.82	0.98	10.16
8	KOZHIKODE	0.00	0.00	0.21	0.00	0.21	11.17	3.11	17.99	4.89	37.16	11.17	3.11	18.20	4.89	37.37
9	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	11.21	23.60	119.49	10.38	164.68	11.21	23.60	119.49	10.38	164.68
10	PALAKKAD	2.58	10.12	4.13	0.33	17.16	34.35	107.2	165.26	30.74	337.59	36.93	117.36	169.39	31.07	354.75
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	1.05	1.45	2.28	0.68	5.46	1.05	1.45	2.28	0.68	5.46
12	THIRUVANANTHAPURAM	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.76	0.57	1.44	0.05	0.06	0.76	0.57	1.44
13	THRISSUR	0.00	0.28	0.85	0.00	1.13	1.78	7.37	285.38	21.21	315.74	1.78	7.65	286.23	21.21	316.87
	Total	3.78	11.20	7.82	1.29	24.09	115.86	230.3	776.87	144.06	1267.15	119.64	241.56	784.69	145.35	1291.2

TABLE 2.19.3: SEASON WISE POTENTIAL UTILISED THROUGH SHALLOW TUBEWELLS- TEMPORARILY NOT IN USE**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ERNAKULAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.22	0.00	0.00	0.22	0.00	0.22
2	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.80	0.00	1.70	0.90	0.00	0.80	0.00	1.70
3	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.20	0.00	0.20
4	PALAKKAD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.00	0.30	0.00	0.30
	Total	0.00	0.00	0.00	0.00	0.00	0.90	0.00	1.52	0.00	2.42	0.90	0.00	1.52	0.00	2.42

TABLE 2.20: DISTRIBUTION OF IN USE SHALLOW TUBEWELLS ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl. No.	District	No. of Shallow tube wells in use	No. of Shallow tube wells without constraints	No. of Shallow tube well Having Constraints in utilisation of potential						
				Non Availability of Adequate Power	Mechanical Break Down	Less discharge of Water	Non – Availability of Finance	Lack of Maintenance	Others	Total (5 to10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	662	622	0	26	2	1	0	11	40
2	ERNAKULAM	173	173	0	0	0	0	0	0	0
3	IDUKKI	8	8	0	0	0	0	0	0	0
4	KANNUR	52	52	0	0	0	0	0	0	0
5	KASARGOD	143	143	0	0	0	0	0	0	0
6	KOLLAM	9	9	0	0	0	0	0	0	0
7	KOTTAYAM	23	23	0	0	0	0	0	0	0
8	KOZHIKODE	48	44	1	3	0	0	0	0	4
9	MALAPPURAM	330	330	0	0	0	0	0	0	0
10	PALAKKAD	249	248	0	0	1	0	0	0	1
11	PATHANAMTHITTA	8	8	0	0	0	0	0	0	0
12	THIRUVANANTHAPURAM	6	5	0	0	0	1	0	0	1
13	THRISSUR	1407	1407	0	0	0	0	0	0	0
Total		3118	3072	1	29	3	2	0	11	46

MEDIUM TUBEWELLS

TABLE 3.1: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO OWNERSHIP**(In Number)**

Sl. No.	District	Public					Private			
		Govt. Owned	Co-op Society	Panchayat Owned	Other	Total (3to6)	Group of Farmers	Individual Farmer	Total (8to9)	Grand Total (7+10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	0	1	0	1	1	143	144	145
2	ERNAKULAM	2	2	2	138	144	3	185	188	332
3	IDUKKI	1	2	8	5	16	2	350	352	368
4	KANNUR	0	0	7	3	10	3	119	122	132
5	KASARGOD	4	2	1	3	10	13	587	600	610
6	KOLLAM	0	0	0	0	0	0	50	50	50
7	KOTTAYAM	0	0	0	1	1	0	85	85	86
8	KOZHIKODE	0	0	0	2	2	2	80	82	84
9	MALAPPURAM	4	3	6	6	19	6	567	573	592
10	PALAKKAD	1	0	72	31	104	40	1178	1218	1322
11	PATHANAMTHITTA	0	0	0	0	0	0	16	16	16
12	THIRUVANANTHAPURAM	0	0	0	0	0	29	78	107	107
13	THRISSUR	6	1	2	7	16	7	1405	1412	1428
14	WAYANAD	0	0	0	0	0	0	29	29	29
	Total	18	10	99	196	323	106	4872	4978	5301

TABLE 3.2.1: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No.	District	No. of Medium tube well owned by						
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)	Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1	2	52	88	143	2	145
2	ERNAKULAM	2	1	57	125	185	147	332
3	IDUKKI	14	3	84	249	350	18	368
4	KANNUR	0	0	34	85	119	13	132
5	KASARGOD	10	13	234	330	587	23	610
6	KOLLAM	0	0	14	36	50	0	50
7	KOTTAYAM	1	0	5	79	85	1	86
8	KOZHIKODE	4	0	42	34	80	4	84
9	MALAPPURAM	8	1	472	86	567	25	592
10	PALAKKAD	33	14	685	446	1178	144	1322
11	PATHANAMTHITTA	0	0	2	14	16	0	16
12	THIRUVANANTHAPURAM	1	1	53	23	78	29	107
13	THRISSUR	15	5	551	834	1405	23	1428
14	WAYANAD	1	0	11	17	29	0	29
	Total	90	40	2296	2446	4872	429	5301

TABLE 3.2.2: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No.	District	No. of Medium tube well owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	0	0	15	16	31
2	ERNAKULAM	1	1	11	24	37
3	IDUKKI	3	0	6	19	28
4	KANNUR	0	0	11	19	30
5	KASARGOD	3	3	67	62	135
6	KOLLAM	0	0	2	3	5
7	KOTTAYAM	0	0	1	8	9
8	KOZHIKODE	1	0	14	6	21
9	MALAPPURAM	1	0	57	13	71
10	PALAKKAD	9	5	192	97	303
11	PATHANAMTHITTA	0	0	2	2	4
12	THIRUVANANTHAPURAM	0	0	11	3	14
13	THRISSUR	5	0	128	170	303
14	WAYANAD	0	0	4	2	6
	Total	23	9	521	444	997

TABLE 3.3.1: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Medium tube well by size class of owner					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	136	4	1	2	0	143
2	ERNAKULAM	165	13	6	1	0	185
3	IDUKKI	212	78	36	14	10	350
4	KANNUR	96	12	9	1	1	119
5	KASARGOD	466	78	28	12	3	587
6	KOLLAM	42	7	0	0	1	50
7	KOTTAYAM	49	22	11	3	0	85
8	KOZHIKODE	68	11	1	0	0	80
9	MALAPPURAM	451	88	21	7	0	567
10	PALAKKAD	717	278	140	35	8	1178
11	PATHANAMTHITTA	9	7	0	0	0	16
12	THIRUVANANTHAPURAM	72	3	3	0	0	78
13	THRISSUR	1291	104	5	4	1	1405
14	WAYANAD	11	10	5	3	0	29
	Total	3785	715	266	82	24	4872

TABLE 3.3.2: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO THE INDIVIDUAL FEMALE OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Medium tube wells by size class of owned					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium(2-4 ha)	Medium(4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	31	0	0	0	0	31
2	ERNAKULAM	36	1	0	0	0	37
3	IDUKKI	23	4	1	0	0	28
4	KANNUR	24	3	3	0	0	30
5	KASARGOD	110	19	6	0	0	135
6	KOLLAM	4	1	0	0	0	5
7	KOTTAYAM	8	1	0	0	0	9
8	KOZHIKODE	19	2	0	0	0	21
9	MALAPPURAM	53	11	7	0	0	71
10	PALAKKAD	190	64	40	7	2	303
11	PATHANAMTHITTA	1	3	0	0	0	4
12	THIRUVANANTHAPURAM	13	1	0	0	0	14
13	THRISSUR	282	18	1	1	1	303
14	WAYANAD	3	3	0	0	0	6
	Total	797	131	58	8	3	997

TABLE 3.4: DISTRIBUTION OF MEDIUM TUBEWELLS AND COST OF CONSTRUCTION**(In 000)**

Sl. No.	District	Number and Cost of Construction of Medium Tube wells Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	40	1958	33	1586	21	992	29	1159	22	691	145	6386
2	ERNAKULAM	296	6754	8	288	14	359	8	285	6	250	332	7936
3	IDUKKI	140	8810	72	4798	51	2833	41	2477	64	4475	368	23393
4	KANNUR	92	4740	15	650	6	337	5	255	14	445	132	6427
5	KASARGOD	462	18336	66	2534	33	1609	19	1115	30	1011	610	24606
6	KOLLAM	17	961	10	846	6	291	8	806	9	350	50	3254
7	KOTTAYAM	46	1736	10	484	3	65	8	306	19	998	86	3589
8	KOZHIKODE	34	1569	14	433	15	678	16	731	5	295	84	3706
9	MALAPPURAM	414	15580	67	2545	37	1379	38	1726	36	1478	592	22708
10	PALAKKAD	768	28126	171	10298	160	6117	71	3040	152	8489	1322	56069
11	PATHANAMTHITTA	8	985	4	305	1	10	2	450	1	100	16	1850
12	THIRUVANANTHAPURAM	56	2589	11	570	5	315	26	913	9	360	107	4747
13	THRISSUR	1145	38669	105	4055	60	2124	51	2209	67	2051	1428	49108
14	WAYANAD	6	331	6	84	8	326	6	367	3	240	29	1349
	Total	3524	131144	592	29477	420	17435	328	15839	437	21233	5301	215128

TABLE 3.5.1: DISTRIBUTION OF MEDIUM TUBEWELLS BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No.	District	No. of Medium tube well according to the annual cost of maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	94	46	5	0	0	145
2	ERNAKULAM	235	93	4	0	0	332
3	IDUKKI	341	25	2	0	0	368
4	KANNUR	126	6	0	0	0	132
5	KASARGOD	528	75	7	0	0	610
6	KOLLAM	31	17	2	0	0	50
7	KOTTAYAM	66	20	0	0	0	86
8	KOZHIKODE	75	9	0	0	0	84
9	MALAPPURAM	511	80	1	0	0	592
10	PALAKKAD	1066	252	4	0	0	1322
11	PATHANAMTHITTA	14	1	1	0	0	16
12	THIRUVANANTHAPURAM	95	12	0	0	0	107
13	THRISSUR	1067	359	2	0	0	1428
14	WAYANAD	29	0	0	0	0	29
	Total	4278	995	28	0	0	5301

TABLE.3.5.2: AVERAGE COST OF CONSTRUCTION, MACHINERY, ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR MEDIUM TUBE WELLS**(Amount in thousands)**

Sl. No.	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Medium tube well for which subsidy was received	Average amount of subsidy	No. of Medium tube well for which subsidy was received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	44	13	2	21	5	20	6
2	ERNAKULAM	24	12	1	4	19	7	8
3	IDUKKI	64	26	0	5	13	24	8
4	KANNUR	49	17	0	5	19	6	20
5	KASARGOD	40	18	1	4	3	7	6
6	KOLLAM	65	23	3	3	18	2	3
7	KOTTAYAM	42	16	1	6	20	13	6
8	KOZHIKODE	44	17	0	22	11	27	7
9	MALAPPURAM	38	16	1	22	18	54	7
10	PALAKKAD	42	12	1	18	46	89	4
11	PATHANAMTHITTA	116	24	2	0	0	0	0
12	THIRUVANANTHAPURAM	44	11	1	4	20	13	7
13	THRISSUR	34	13	1	12	13	17	6
14	WAYANAD	47	33	0	10	16	1	16
Total		41	15	1	136	18	280	6

TABLE 3.6: DISTRIBUTION OF MEDIUM TUBEWELLS UNDER INDIVIDUAL OWNERSHIP BY MAJOR SOURCE OF FINANCE**(In Number)**

Sl. No.	District	With Single Source of Finance						With two Sources of Finance								Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3to7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	0	41	0	2	43	12	3	2	0	0	0	83	100	143
2	ERNAKULAM	1	1	145	0	22	169	4	3	0	0	0	0	9	16	185
3	IDUKKI	2	3	226	0	1	232	3	22	3	0	0	0	90	118	350
4	KANNUR	0	0	107	0	0	107	7	3	0	0	0	0	2	12	119
5	KASARGOD	7	0	490	0	8	505	26	8	0	0	1	0	47	82	587
6	KOLLAM	1	0	34	0	1	36	2	4	0	1	0	0	7	14	50
7	KOTTAYAM	3	0	61	0	2	66	2	10	0	0	1	0	6	19	85
8	KOZHIKODE	0	1	25	0	0	26	3	42	0	1	0	0	8	54	80
9	MALAPPURAM	8	0	467	8	9	492	6	29	9	2	1	0	28	75	567
10	PALAKKAD	15	8	576	7	123	729	42	6	8	0	1	0	392	449	1178
11	PATHANAMTHITTA	0	2	13	0	1	16	0	0	0	0	0	0	0	0	16
12	THIRUVANANTHAPURAM	0	2	59	0	2	63	2	10	1	0	0	0	2	15	78
13	THRISSUR	1	2	978	4	1	986	12	3	28	2	0	0	374	419	1405
14	WAYANAD	0	0	6	0	1	7	0	6	0	0	0	0	16	22	29
	Total	38	19	3228	19	173	3477	121	149	51	6	4	0	1064	1395	4872

TABLE 3.7: DISTRIBUTION OF MEDIUM TUBEWELLS BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Medium tube well in use	Medium tube well not in use			Grand Total (3+6)	Number of Schemes meant only for re-charge of ground water		
			Temporarily	Permanently	Total(4+5)		In use	Not in use (Temp + Pmt)	Total (8+9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	145	0	0	0	145	0	0	0
2	ERNAKULAM	332	0	0	0	332	2	0	2
3	IDUKKI	365	2	1	3	368	0	0	0
4	KANNUR	130	0	2	2	132	0	0	0
5	KASARGOD	610	0	0	0	610	0	0	0
6	KOLLAM	49	1	0	1	50	0	0	0
7	KOTTAYAM	86	0	0	0	86	0	0	0
8	KOZHIKODE	83	0	1	1	84	0	1	1
9	MALAPPURAM	589	1	2	3	592	0	3	3
10	PALAKKAD	1309	5	8	13	1322	37	8	45
11	PATHANAMTHITTA	16	0	0	0	16	0	0	0
12	THIRUVANANTHAPURAM	106	1	0	1	107	0	0	0
13	THRISSUR	1427	1	0	1	1428	4	0	4
14	WAYANAD	28	1	0	1	29	0	0	0
	Total	5275	12	14	26	5301	43	12	55

TABLE 3.8: DISTRIBUTION OF MEDIUM TUBEWELL TEMPORARILY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Non Availability of Adequate Power/ Fuel		Mechanical Break Down		Less discharge of Water		Non-Availability of Finance		Lack of Maintenance		Others		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	IDUKKI	0	0.00	0	0.00	1	0.00	1	0.00	0	0.00	0	0.00	2	0.00
2	KOLLAM	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
3	MALAPPURAM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
4	PALAKKAD	0	0.00	1	0.40	1	0.00	0	0.00	0	0.00	3	0.00	5	0.40
5	THIRUVANANTHAPURAM	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00
6	THRISSUR	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
7	WAYANAD	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
	Total	2	0.00	2	0.40	3	0.00	1	0.00	0	0.00	4	0.00	12	0.40

TABLE 3.9: DISTRIBUTION OF MEDIUM TUBEWELLS PERMANENTLY NOT IN USE BY REASON**(In Number/In Ha)**

Sl. No.	District	Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/ Medium Irrigation Projects		Other reasons		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	IDUKKI	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
2	KANNUR	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00	2	0.00
3	KOZHIKODE	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00
4	MALAPPURAM	0	0.00	0	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00
5	PALAKKAD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	8	0.00	8	0.00
	Total	0	0.00	0	0.00	2	0.00	1	0.00	0	0.00	0	0.00	11	0.00	14	0.00

TABLE 3.10: DISTRIBUTION OF IN USE MEDIUM TUBE WELLS ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED**(In Number/In Ha)**

Sl. No.	District	No. & IPU of Medium Tube well Schemes According to Water Distribution System															
		Open Water (Lined/ Pucca)		Open Water (Unlined/ Kutcha)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	0	0.00	2	0.23	13	3.11	129	35.59	0	0.00	0	0.00	1	0.28	145	39.21
2	ERNAKULAM	17	10.33	58	27.80	14	6.36	213	125.64	4	1.52	14	11.80	12	10.81	332	194.26
3	IDUKKI	6	16.04	7	21.20	23	28.47	311	297.91	2	0.96	12	15.17	4	1.80	365	381.55
4	KANNUR	1	8.08	1	0.80	5	4.08	91	52.60	4	6.78	20	17.15	8	13.38	130	102.87
5	KASARGOD	30	17.22	5	3.24	29	20.69	317	143.41	13	7.54	202	122.06	14	7.42	610	321.58
6	KOLLAM	2	0.78	1	0.30	13	10.13	29	32.61	1	0.52	1	1.20	2	2.12	49	47.66
7	KOTTAYAM	0	0.00	1	0.30	3	1.06	69	41.88	5	6.67	4	2.59	4	2.72	86	55.22
8	KOZHIKODE	3	1.98	2	0.88	1	0.12	62	29.19	7	6.04	2	1.53	6	1.83	83	41.57
9	MALAPPURAM	9	4.25	89	50.53	16	10.61	385	210.03	16	9.22	42	25.27	32	31.66	589	341.57
10	PALAKKAD	48	121.77	301	540.97	57	110.87	712	842.78	119	236.69	63	25.17	9	6.21	1309	1884.46
11	PATHANAMTHITTA	0	0.00	0	0.00	6	3.93	10	6.55	0	0.00	0	0.00	0	0.00	16	10.48
12	THIRUVANANTHAPURAM	4	3.36	3	1.02	4	3.16	78	24.49	4	7.09	0	0.00	13	4.91	106	44.03
13	THRISSUR	15	5.08	359	166.16	188	39.90	740	297.18	28	16.50	95	51.67	2	0.70	1427	577.19
14	WAYANAD	0	0.00	0	0.00	0	0.00	16	17.05	0	0.00	11	22.98	1	0.45	28	40.48
Total		135	188.89	829	813.43	372	242.49	3162	2156.91	203	299.53	466	296.59	108	84.29	5275	4082.13

TABLE 3.11: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE MEDIUM TUBE WELLS ACCORDING TO WATERLIFTING DEVICES**(In Number)**

Sl. No.	District	Number of schemes by lifting Device					
		Submersible Pump	Centrifugal Pump	Turbine	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	43	95	3	4	0	145
2	ERNAKULAM	73	243	10	5	1	332
3	IDUKKI	302	50	7	3	5	367
4	KANNUR	92	26	6	0	6	130
5	KASARGOD	414	182	4	0	10	610
6	KOLLAM	24	11	9	1	5	50
7	KOTTAYAM	45	24	13	1	3	86
8	KOZHIKODE	41	34	6	0	2	83
9	MALAPPURAM	330	205	51	1	3	590
10	PALAKKAD	614	586	25	86	3	1314
11	PATHANAMTHITTA	2	5	8	0	1	16
12	THIRUVANANTHAPURAM	61	31	13	0	2	107
13	THRISSUR	768	616	23	8	13	1428
14	WAYANAD	26	2	1	0	0	29
Total		2835	2110	179	109	54	5287

TABLE 3.12: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE MEDIUM TUBE WELLS ACCORDING TO SOURCE OF ENERGY**(In Number)**

Sl. No.	District	Number of schemes by source of energy						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	139	2	0	0	4	0	145
2	ERNAKULAM	301	26	0	0	5	0	332
3	IDUKKI	359	4	1	0	3	0	367
4	KANNUR	125	0	0	0	0	5	130
5	KASARGOD	602	3	1	0	0	4	610
6	KOLLAM	42	0	0	0	1	7	50
7	KOTTAYAM	85	0	0	0	1	0	86
8	KOZHIKODE	79	3	0	0	0	1	83
9	MALAPPURAM	580	6	0	0	1	3	590
10	PALAKKAD	1209	16	1	0	86	2	1314
11	PATHANAMTHITTA	16	0	0	0	0	0	16
12	THIRUVANANTHAPURAM	105	0	0	0	0	2	107
13	THRISSUR	1406	13	0	0	8	1	1428
14	WAYANAD	28	1	0	0	0	0	29
	Total	5076	74	3	0	109	25	5287

TABLE 3.13: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE MEDIUM TUBE WELLS ACCORDING TO HORSE POWER OF LIFTING DEVICES**(In Number)**

Sl. No.	District	No. of Medium tube well by horse power of lifting devices								Total(9 to 10)
		0-2 hp	2-4 hp	4-6 hp	6-8 hp	8-10 hp	above 10 hp	Total (3 to 8)	Schemes without horse power	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	136	4	1	0	0	0	141	4	145
2	ERNAKULAM	255	62	10	0	0	0	327	5	332
3	IDUKKI	252	15	96	1	0	0	364	3	367
4	KANNUR	117	7	4	0	1	1	130	0	130
5	KASARGOD	479	73	47	11	0	0	610	0	610
6	KOLLAM	44	2	2	0	0	1	49	1	50
7	KOTTAYAM	82	0	3	0	0	0	85	1	86
8	KOZHIKODE	68	4	11	0	0	0	83	0	83
9	MALAPPURAM	541	27	20	0	1	0	589	1	590
10	PALAKKAD	448	104	641	32	1	2	1228	86	1314
11	PATHANAMTHITTA	8	7	1	0	0	0	16	0	16
12	THIRUVANANTHAPURAM	101	0	6	0	0	0	107	0	107
13	THRISSUR	500	124	786	5	4	1	1420	8	1428
14	WAYANAD	24	1	3	1	0	0	29	0	29
	Total	3055	430	1631	50	7	5	5178	109	5287

TABLE 3.14: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE MEDIUM TUBE WELLS ACCORDING TO TOTAL PUMPING HOURS OF OPERATION**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (3to8)	<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (10to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	140	1	0	0	0	0	141	133	3	1	0	0	4	141
2	ERNAKULAM	325	0	1	0	0	1	327	317	7	2	0	1	0	327
3	IDUKKI	364	0	0	0	0	0	364	364	0	0	0	0	0	364
4	KANNUR	130	0	0	0	0	0	130	124	6	0	0	0	0	130
5	KASARGOD	597	10	2	1	0	0	610	582	22	6	0	0	0	610
6	KOLLAM	47	1	0	0	1	0	49	44	3	0	0	1	1	49
7	KOTTAYAM	85	0	0	0	0	0	85	82	3	0	0	0	0	85
8	KOZHIKODE	76	7	0	0	0	0	83	83	0	0	0	0	0	83
9	MALAPPURAM	579	7	3	0	0	0	589	566	17	4	1	1	0	589
10	PALAKKAD	1187	36	4	1	0	0	1228	893	204	82	14	10	25	1228
11	PATHANAMTHITTA	14	2	0	0	0	0	16	11	3	1	1	0	0	16
12	THIRUVANANTHAPURAM	107	0	0	0	0	0	107	106	1	0	0	0	0	107
13	THRISSUR	1410	9	1	0	0	0	1420	1391	20	3	5	0	1	1420
14	WAYANAD	27	0	0	0	1	1	29	29	0	0	0	0	0	29
Total		5088	73	11	2	2	2	5178	4725	289	99	21	13	31	5178

TABLE3.15: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE MEDIUM TUBE WELLS ACCORDING TO AVERAGE HOURS OF PUMPING PER DAY**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (3 to 8)	0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (10 to15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	141	0	0	0	0	0	141	135	2	1	2	0	1	141
2	ERNAKULAM	322	4	0	1	0	0	327	319	7	1	0	0	0	327
3	IDUKKI	364	0	0	0	0	0	364	364	0	0	0	0	0	364
4	KANNUR	130	0	0	0	0	0	130	128	2	0	0	0	0	130
5	KASARGOD	591	17	2	0	0	0	610	588	20	2	0	0	0	610
6	KOLLAM	47	2	0	0	0	0	49	45	4	0	0	0	0	49
7	KOTTAYAM	85	0	0	0	0	0	85	85	0	0	0	0	0	85
8	KOZHIKODE	83	0	0	0	0	0	83	83	0	0	0	0	0	83
9	MALAPPURAM	579	10	0	0	0	0	589	564	23	2	0	0	0	589
10	PALAKKAD	1131	80	14	3	0	0	1228	953	173	79	4	1	18	1228
11	PATHANAMTHITTA	14	1	0	1	0	0	16	12	3	0	1	0	0	16
12	THIRUVANANTHAPURAM	106	1	0	0	0	0	107	107	0	0	0	0	0	107
13	THRISSUR	1398	17	5	0	0	0	1420	1389	24	6	0	0	1	1420
14	WAYANAD	27	0	2	0	0	0	29	29	0	0	0	0	0	29
Total		5018	132	23	5	0	0	5178	4801	258	91	7	1	20	5178

TABLE 3.16: DISTRIBUTION OF MEDIUM TUBEWELLS ACCORDING TO DEPTH**(In Number)**

Sl. No.	District	No. by the depth of Medium tube well					
		0 to 35 mts	35 to 40 mts	40 to 60 mts	60 to 70 mts	>70 mts	Total(3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0	7	44	94	0	145
2	ERNAKULAM	0	24	91	217	0	332
3	IDUKKI	0	9	64	295	0	368
4	KANNUR	0	19	47	66	0	132
5	KASARGOD	0	14	210	386	0	610
6	KOLLAM	0	0	24	26	0	50
7	KOTTAYAM	0	1	19	66	0	86
8	KOZHIKODE	0	12	40	32	0	84
9	MALAPPURAM	0	45	183	364	0	592
10	PALAKKAD	0	32	276	1014	0	1322
11	PATHANAMTHITTA	0	0	5	11	0	16
12	THIRUVANANTHAPURAM	0	37	40	30	0	107
13	THRISSUR	0	87	409	932	0	1428
14	WAYANAD	0	0	5	24	0	29
	Total	0	287	1457	3557	0	5301

TABLE 3.17: DISTRIBUTION OF MEDIUM TUBEWELLS IN AND OUTSIDE THE COMMAND AREA OF MAJOR/MEDIUM PROJECTS**(In Number)**

Sl. No.	District	Outside command	No. of Medium tube wells inside the command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	145	0	0	0	0	0	145
2	ERNAKULAM	319	8	5	0	0	13	332
3	IDUKKI	368	0	0	0	0	0	368
4	KANNUR	131	0	1	0	0	1	132
5	KASARGOD	609	0	1	0	0	1	610
6	KOLLAM	49	0	0	0	1	1	50
7	KOTTAYAM	86	0	0	0	0	0	86
8	KOZHIKODE	84	0	0	0	0	0	84
9	MALAPPURAM	591	1	0	0	0	1	592
10	PALAKKAD	1064	12	237	2	7	258	1322
11	PATHANAMTHITTA	16	0	0	0	0	0	16
12	THIRUVANANTHAPURAM	105	2	0	0	0	2	107
13	THRISSUR	1394	19	13	2	0	34	1428
14	WAYANAD	29	0	0	0	0	0	29
Total		4990	42	257	4	8	311	5301

TABLE 3.18.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH MEDIUM TUBEWELLS - ALL SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	40.30	2.78	9.08	23.96	4.55	40.37
2	ERNAKULAM	195.44	10.32	20.49	141.76	24.62	197.19
3	IDUKKI	384.56	1.61	1.32	379.10	2.67	384.70
4	KANNUR	103.91	13.07	7.99	69.09	21.33	111.48
5	KASARGOD	320.99	22.99	22.37	277.95	16.81	340.12
6	KOLLAM	48.31	10.50	10.96	18.40	10.32	50.18
7	KOTTAYAM	55.29	2.31	2.92	43.01	8.49	56.73
8	KOZHIKODE	40.75	3.28	0.94	33.27	4.15	41.64
9	MALAPPURAM	350.89	51.64	50.99	221.59	28.17	352.39
10	PALAKKAD	1765.46	418.04	708.71	709.78	53.25	1889.78
11	PATHANAMTHITTA	11.35	2.50	1.40	6.88	0.62	11.40
12	THIRUVANANTHAPURAM	45.17	9.55	8.72	21.40	6.10	45.77
13	THRISSUR	572.37	30.25	50.41	447.74	51.13	579.53
14	WAYANAD	41.23	1.00	0.60	33.04	6.59	41.23
	Total	3976.02	579.84	896.90	2426.97	238.80	4142.51

TABLE 3.18.2 CCA AND SEASON WISE POTENTIAL CREATED THROUGH IN USE MEDIUM TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	40.30	2.78	9.08	23.96	4.55	40.37
2	ERNAKULAM	195.44	10.32	20.49	141.76	24.62	197.19
3	IDUKKI	382.60	1.36	0.91	378.61	1.86	382.74
4	KANNUR	103.91	13.07	7.99	69.09	21.33	111.48
5	KASARGOD	320.99	22.99	22.37	277.95	16.81	340.12
6	KOLLAM	48.19	10.47	10.92	18.35	10.32	50.06
7	KOTTAYAM	55.29	2.31	2.92	43.01	8.49	56.73
8	KOZHIKODE	40.75	3.28	0.94	33.27	4.15	41.64
9	MALAPPURAM	350.89	51.64	50.99	221.59	28.17	352.39
10	PALAKKAD	1764.28	418.04	708.71	708.60	53.25	1888.60
11	PATHANAMTHITTA	11.35	2.50	1.40	6.88	0.62	11.40
12	THIRUVANANTHAPURAM	44.97	9.45	8.72	21.30	6.10	45.57
13	THRISSUR	571.46	30.25	50.41	446.83	51.13	578.62
14	WAYANAD	40.53	0.40	0.60	33.04	6.49	40.53
Total		3970.95	578.86	896.45	2424.24	237.89	4137.44

TABLE 3.18.3 CCA AND SEASON WISE POTENTIAL CREATED THROUGH TEMPORARILY NOT IN USE MEDIUM TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	IDUKKI	1.15	0.25	0.41	0.49	0.00	1.15
2	KOLLAM	0.12	0.03	0.04	0.05	0.00	0.12
3	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	0.00
4	PALAKKAD	1.18	0.00	0.00	1.18	0.00	1.18
5	THIRUVANANTHAPURAM	0.20	0.10	0.00	0.10	0.00	0.20
6	THRISSUR	0.91	0.00	0.00	0.91	0.00	0.91
7	WAYANAD	0.70	0.60	0.00	0.00	0.10	0.70
	Total	4.26	0.98	0.45	2.73	0.10	4.26

TABLE 3.18.4 CCA AND SEASON WISE POTENTIAL CREATED THROUGH PERMANENTLY NOT IN USE MEDIUM TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	IDUKKI	0.81	0.00	0.00	0.00	0.81	0.81
2	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00
3	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	0.00
4	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	0.00
5	PALAKKAD	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.81	0.00	0.00	0.00	0.81	0.81

TABLE 3.19.1 SEASON WISE POTENTIAL UTILISED THROUGH MEDIUM TUBEWELLS – ALL SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.00	0.00	0.00	0.00	0.00	2.47	8.62	23.62	4.50	39.21	2.47	8.62	23.62	4.50	39.21
2	ERNAKULAM	0.76	1.45	7.76	0.30	10.27	7.69	18.34	133.72	24.24	183.99	8.45	19.79	141.48	24.54	194.26
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	1.61	1.32	377.91	1.86	382.70	1.61	1.32	377.91	1.86	382.70
4	KANNUR	0.00	0.00	0.00	0.08	0.08	7.60	7.69	66.29	21.21	102.79	7.60	7.69	66.29	21.29	102.87
5	KASARGOD	0.00	0.00	0.40	0.00	0.40	21.41	21.42	262.76	15.59	321.18	21.41	21.42	263.16	15.59	321.58
6	KOLLAM	0.00	0.00	0.30	0.00	0.30	9.84	10.72	17.61	9.31	47.48	9.84	10.72	17.91	9.31	47.78
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	2.07	2.92	41.76	8.47	55.22	2.07	2.92	41.76	8.47	55.22
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	3.28	0.94	33.22	4.13	41.57	3.28	0.94	33.22	4.13	41.57
9	MALAPPURAM	2.83	0.00	0.00	0.00	2.83	40.59	50.23	220.03	27.89	338.74	43.42	50.23	220.03	27.89	341.57
10	PALAKKAD	177.59	292.51	74.35	3.59	548.04	240.25	415.6	632.59	48.76	1337.20	417.84	708.11	706.94	52.35	1885.2
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	2.43	1.03	6.51	0.51	10.48	2.43	1.03	6.51	0.51	10.48
12	THIRUVANANTHAPURAM	0.15	0.15	0.23	0.43	0.96	9.02	8.21	20.67	5.37	43.27	9.17	8.36	20.90	5.80	44.23
13	THRISSUR	0.66	6.29	13.40	3.99	24.34	29.52	44.02	433.11	47.11	553.76	30.18	50.31	446.51	51.10	578.10
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	1.00	0.60	33.04	6.54	41.18	1.00	0.60	33.04	6.54	41.18
Total		181.99	300.40	96.44	8.39	587.22	378.78	591.6	2302.84	225.49	3498.77	560.77	892.06	2399.28	233.88	4085.9

TABLE 3.19.2 SEASON WISE POTENTIAL UTILISED THROUGH IN USE MEDIUM TUBEWELLS**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.00	0.00	0.00	0.00	0.00	2.47	8.62	23.62	4.50	39.21	2.47	8.62	23.62	4.50	39.21
2	ERNAKULAM	0.76	1.45	7.76	0.30	10.27	7.69	18.34	133.72	24.24	183.99	8.45	19.79	141.48	24.54	194.26
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	1.36	0.91	377.42	1.86	381.55	1.36	0.91	377.42	1.86	381.55
4	KANNUR	0.00	0.00	0.00	0.08	0.08	7.60	7.69	66.29	21.21	102.79	7.60	7.69	66.29	21.29	102.87
5	KASARGOD	0.00	0.00	0.40	0.00	0.40	21.41	21.42	262.76	15.59	321.18	21.41	21.42	263.16	15.59	321.58
6	KOLLAM	0.00	0.00	0.30	0.00	0.30	9.81	10.68	17.56	9.31	47.36	9.81	10.68	17.86	9.31	47.66
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	2.07	2.92	41.76	8.47	55.22	2.07	2.92	41.76	8.47	55.22
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	3.28	0.94	33.22	4.13	41.57	3.28	0.94	33.22	4.13	41.57
9	MALAPPURAM	2.83	0.00	0.00	0.00	2.83	40.59	50.23	220.03	27.89	338.74	43.42	50.23	220.03	27.89	341.57
10	PALAKKAD	177.59	292.5	74.35	3.59	548.04	240.25	415.6	631.81	48.76	1336.42	417.84	708.11	706.16	52.35	1884.4
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	2.43	1.03	6.51	0.51	10.48	2.43	1.03	6.51	0.51	10.48
12	THIRUVANANTHAPURAM	0.15	0.15	0.23	0.43	0.96	8.92	8.21	20.57	5.37	43.07	9.07	8.36	20.80	5.80	44.03
13	THRISSUR	0.66	6.29	13.40	3.99	24.34	29.52	44.02	432.20	47.11	552.85	30.18	50.31	445.60	51.10	577.19
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	0.40	0.60	33.04	6.44	40.48	0.40	0.60	33.04	6.44	40.48
	Total	181.99	300.40	96.44	8.39	587.22	377.80	591.2	2300.51	225.39	3494.91	559.79	891.61	2396.95	233.78	4082.1

TABLE 3.19.3 SEASON WISE POTENTIAL UTILISED THROUGH TEMPORARILY NOT IN USE MEDIUM TUBEWELLS.**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.25	0.41	0.49	0.00	1.15	0.25	0.41	0.49	0.00	1.15
2	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.05	0.00	0.12	0.03	0.04	0.05	0.00	0.12
3	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	PALAKKAD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.78	0.00	0.00	0.78	0.00	0.78
5	THIRUVANANTHAPURAM	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.20	0.10	0.00	0.10	0.00	0.20
6	THRISSUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.91	0.00	0.00	0.91	0.00	0.91
7	WAYANAD	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.10	0.70	0.60	0.00	0.00	0.10	0.70
	Total	0.00	0.00	0.00	0.00	0.00	0.98	0.45	2.33	0.10	3.86	0.98	0.45	2.33	0.10	3.86

TABLE 3.20 DISTRIBUTION OF IN USE MEDIUM TUBEWELLS ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl.	District	No. of Medium	No. of Medium	No. of Medium tube well Having Constraints in utilisation of potential
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No.		tube wells in use	tube wells without constraint	Non Availability of Adequate Power	Mechanical Break Down	Less discharge of Water	Non - Availability of Finance	Lack of Maintenance	Others	Total (5 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	145	133	0	1	11	0	0	0	12
2	ERNAKULAM	332	330	0	0	1	0	0	1	2
3	IDUKKI	365	363	0	1	1	0	0	0	2
4	KANNUR	130	127	0	0	2	0	0	1	3
5	KASARGOD	610	592	11	0	0	0	0	7	18
6	KOLLAM	49	48	0	0	1	0	0	0	1
7	KOTTAYAM	86	86	0	0	0	0	0	0	0
8	KOZHIKODE	83	82	0	0	0	0	0	1	1
9	MALAPPURAM	589	586	0	0	1	0	0	2	3
10	PALAKKAD	1309	1305	0	1	0	0	0	3	4
11	PATHANAMTHITTA	16	15	0	0	0	0	0	1	1
12	THIRUVANANTHAPURAM	106	106	0	0	0	0	0	0	0
13	THRISSUR	1427	1425	0	0	2	0	0	0	2
14	WAYANAD	28	22	6	0	0	0	0	0	6
	Total	5275	5220	17	3	19	0	0	16	55

DEEP TUBE WELLS

TABLE 4.1: DISTRIBUTION OF DEEP TUBEWELLS ACCORDING TO OWNERSHIP**(In Number)**

Sl. No.	District	Public					Private			
		Govt. Owned	Co-op Society	Panchayat Owned	Other	Total (3to6)	Group of Farmers	Individual Farmer	Total (8 to 9)	Grand Total (7 +10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	0	0	0	0	0	1	1	1
2	ERNAKULAM	0	0	1	0	1	0	12	12	13
3	IDUKKI	0	0	4	7	11	8	257	265	276
4	KANNUR	0	0	1	0	1	2	25	27	28
5	KASARGOD	0	0	1	5	6	20	426	446	452
6	KOLLAM	0	3	3	0	6	0	3	3	9
7	KOTTAYAM	0	0	0	0	0	0	9	9	9
8	KOZHIKODE	0	0	0	0	0	0	18	18	18
9	MALAPPURAM	1	0	0	5	6	1	110	111	117
10	PALAKKAD	0	1	26	0	27	44	565	609	636
11	PATHANAMTHITTA	0	0	0	0	0	0	4	4	4
12	THIRUVANANTHAPURA	0	0	0	0	0	0	4	4	4
13	THRISSUR	1	0	0	1	2	7	292	299	301
14	WAYANAD	0	0	0	0	0	0	3	3	3
	Total	2	4	36	18	60	82	1729	1811	1871

TABLE 4.2.1: DISTRIBUTION OF DEEP TUBEWELLS ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No.	District	No. of Deep tube well owned by						
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)	Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	0	0	0	1	1	0	1
2	ERNAKULAM	0	0	1	11	12	1	13
3	IDUKKI	10	0	62	185	257	19	276
4	KANNUR	0	0	6	19	25	3	28
5	KASARGOD	6	27	197	196	426	26	452
6	KOLLAM	0	0	1	2	3	6	9
7	KOTTAYAM	1	0	0	8	9	0	9
8	KOZHIKODE	1	0	7	10	18	0	18
9	MALAPPURAM	4	0	91	15	110	7	117
10	PALAKKAD	8	0	265	292	565	71	636
11	PATHANAMTHITTA	0	0	0	4	4	0	4
12	THIRUVANANTHAPURAM	0	0	0	4	4	0	4
13	THRISSUR	3	1	123	165	292	9	301
14	WAYANAD	0	0	0	3	3	0	3
	Total	33	28	753	915	1729	142	1871

TABLE 4.2.2: DISTRIBUTION OF DEEP TUBEWELLS ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No.	District	No. of Deep tube well owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ERNAKULAM	0	0	1	0	1
2	IDUKKI	2	0	12	19	33
3	KANNUR	0	0	2	4	6
4	KASARGOD	0	7	37	29	73
5	KOLLAM	0	0	1	0	1
6	KOTTAYAM	0	0	0	4	4
7	KOZHIKODE	0	0	1	2	3
8	MALAPPURAM	0	0	9	1	10
9	PALAKKAD	1	0	48	49	98
10	PATHANAMTHITTA	0	0	0	2	2
11	THRISSUR	0	0	26	34	60
	Total	3	7	137	144	291

TABLE 4.3.1: DISTRIBUTION OF DEEP TUBE WELLS ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Deep tube well by size class of owner					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0	1	0	0	0	1
2	ERNAKULAM	10	2	0	0	0	12
3	IDUKKI	137	62	28	22	8	257
4	KANNUR	14	5	4	2	0	25
5	KASARGOD	210	118	68	29	1	426
6	KOLLAM	3	0	0	0	0	3
7	KOTTAYAM	4	5	0	0	0	9
8	KOZHIKODE	16	2	0	0	0	18
9	MALAPPURAM	87	11	8	3	1	110
10	PALAKKAD	336	136	69	18	6	565
11	PATHANAMTHITTA	3	1	0	0	0	4
12	THIRUVANANTHAPURAM	3	0	1	0	0	4
13	THRISSUR	237	42	12	1	0	292
14	WAYANAD	2	1	0	0	0	3
	Total	1062	386	190	75	16	1729

TABLE 4.3.2: DISTRIBUTION OF DEEP TUBEWELLS ACCORDING TO THE INDIVIDUAL FEMALE OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Deep tube wellby size class of owned					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium(2-4 ha)	Medium(4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ERNAKULAM	1	0	0	0	0	1
2	IDUKKI	26	3	0	4	0	33
3	KANNUR	3	1	1	1	0	6
4	KASARGOD	37	21	13	2	0	73
5	KOLLAM	1	0	0	0	0	1
6	KOTTAYAM	2	2	0	0	0	4
7	KOZHIKODE	3	0	0	0	0	3
8	MALAPPURAM	10	0	0	0	0	10
9	PALAKKAD	63	25	6	2	2	98
10	PATHANAMTHITTA	2	0	0	0	0	2
11	THRISSUR	50	9	1	0	0	60
	Total	198	61	21	9	2	291

TABLE 4.4: DISTRIBUTION OF DEEP TUBEWELLS AND COST OF CONSTRUCTION**(In Rs. 000)**

Sl. No.	District	Number and Cost of Construction of Deep Tube Wells Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	1	75	0	0	0	0	0	0	0	0	1	75
2	ERNAKULAM	11	639	0	0	0	0	0	0	2	460	13	1099
3	IDUKKI	88	6552	37	3427	48	4120	34	2708	69	5853	276	22660
4	KANNUR	22	1398	2	170	3	295	1	60	0	0	28	1923
5	KASARGOD	297	18293	98	7084	26	1868	20	1468	11	727	452	29439
6	KOLLAM	1	125	6	37	1	0	1	150	0	0	9	312
7	KOTTAYAM	6	195	1	60	1	118	0	0	1	51	9	424
8	KOZHIKODE	4	349	4	320	1	20	4	266	5	281	18	1236
9	MALAPPURAM	92	4154	10	551	5	117	5	164	5	202	117	5188
10	PALAKKAD	345	15535	60	2797	45	1777	114	2830	72	3360	636	26299
11	PATHANAMTHITTA	2	400	0	0	2	350	0	0	0	0	4	750
12	THIRUVANANTHAPURAM	2	149	1	90	0	0	1	50	0	0	4	289
13	THRISSUR	210	7209	26	787	18	907	23	908	24	1237	301	11047
14	WAYANAD	1	75	0	0	0	0	1	65	1	75	3	215
	Total	1082	55147	245	15322	150	9571	204	8669	190	12246	1871	100955

TABLE 4.5.1: DISTRIBUTION OF DEEP TUBEWELLS BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No.	District	No. of Deep tube well according to the annual cost of maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0	1	0	0	0	1
2	ERNAKULAM	10	3	0	0	0	13
3	IDUKKI	262	10	3	1	0	276
4	KANNUR	27	0	1	0	0	28
5	KASARGOD	347	99	6	0	0	452
6	KOLLAM	8	1	0	0	0	9
7	KOTTAYAM	9	0	0	0	0	9
8	KOZHIKODE	16	2	0	0	0	18
9	MALAPPURAM	100	16	1	0	0	117
10	PALAKKAD	399	236	1	0	0	636
11	PATHANAMTHITTA	0	0	4	0	0	4
12	THIRUVANANTHAPURAM	3	1	0	0	0	4
13	THRISSUR	216	83	2	0	0	301
14	WAYANAD	3	0	0	0	0	3
	Total	1400	452	18	1	0	1871

TABLE.4.5.2: AVERAGE COST OF CONSTRUCTION, MACHINERY, ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR DEEP TUBEWELLS.								
(Amount in thousands)								
Sl. No.	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Deep tube well for which subsidy was received	Average amount of subsidy	No. of Deep tube well for which subsidy was received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	75	10	2	0	0	0	0
2	ERNAKULAM	85	40	1	0	0	0	0
3	IDUKKI	82	46	1	1	0	37	8
4	KANNUR	69	23	1	0	0	2	3
5	KASARGOD	65	25	2	1	7	3	3
6	KOLLAM	35	8	1	0	0	0	0
7	KOTTAYAM	47	25	0	1	118	1	8
8	KOZHIKODE	69	23	1	7	19	5	11
9	MALAPPURAM	44	21	1	2	19	9	12
10	PALAKKAD	41	18	1	5	4	45	3
11	PATHANAMTHITTA	188	50	31	0	0	0	0
12	THIRUVANANTHAPURAM	72	19	1	0	0	2	5
13	THRISSUR	37	16	1	3	3	6	4
14	WAYANAD	72	37	0	1	17	1	6
	Total	54	24	1	21	16	111	6

TABLE 4.6: DISTRIBUTION OF DEEP TUBEWELLS UNDER INDIVIDUAL OWNERSHIP BY MAJOR SOURCE OF FINANCE

(In Number)

Sl. No.	District	With Single Source of Finance						With Two Sources of Finance								Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3to7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
2	ERNAKULAM	0	0	6	0	0	6	1	0	0	0	0	0	5	6	12
3	IDUKKI	0	2	165	0	0	167	1	35	3	0	0	0	51	90	257
4	KANNUR	1	0	22	0	0	23	2	0	0	0	0	0	0	2	25
5	KASARGOD	4	0	336	0	1	341	81	1	0	0	0	0	3	85	426
6	KOLLAM	0	0	1	0	0	1	0	1	0	0	0	0	1	2	3
7	KOTTAYAM	0	0	8	0	0	8	0	0	0	1	0	0	0	1	9
8	KOZHIKODE	0	0	9	0	0	9	0	7	0	0	0	0	2	9	18
9	MALAPPURAM	2	1	93	1	2	99	0	9	1	0	0	0	1	11	110
10	PALAKKAD	18	3	271	0	8	300	41	4	2	0	0	0	218	265	565
11	PATHANAMTHITTA	0	1	2	0	0	3	1	0	0	0	0	0	0	1	4
12	THIRUVANANTHAPURAM	0	0	1	0	0	1	0	1	1	1	0	0	0	3	4
13	THRISSUR	1	0	122	0	0	123	4	1	4	0	0	0	160	169	292
14	WAYANAD	0	0	0	0	0	0	0	2	0	0	0	0	1	3	3
Total		26	7	1036	1	11	1081	131	61	11	2	0	0	443	648	1729

TABLE 4.7: DISTRIBUTION OF DEEP TUBEWELLS BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Deep tube well in use	Deep tube well not in use			Grand Total (3+6)	Number of Schemes meant only for re-charge of ground water		
			Temporarily	Permanently	Total(4+5)		In use	Not in use (Temp + Pmt)	Total (8+9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	1	0	0	0	1	0	0	0
2	ERNAKULAM	13	0	0	0	13	1	0	1
3	IDUKKI	274	2	0	2	276	0	0	0
4	KANNUR	28	0	0	0	28	0	0	0
5	KASARGOD	451	1	0	1	452	1	0	1
6	KOLLAM	4	5	0	5	9	1	0	1
7	KOTTAYAM	9	0	0	0	9	0	0	0
8	KOZHIKODE	18	0	0	0	18	0	0	0
9	MALAPPURAM	117	0	0	0	117	0	0	0
10	PALAKKAD	628	3	5	8	636	0	3	3
11	PATHANAMTHITTA	4	0	0	0	4	0	0	0
12	THIRUVANANTHAPURAM	4	0	0	0	4	0	0	0
13	THRISSUR	301	0	0	0	301	0	0	0
14	WAYANAD	3	0	0	0	3	0	0	0
	Total	1855	11	5	16	1871	3	3	6

TABLE 4.8: DISTRIBUTION OF TEMPORARILY NOT IN USE DEEP TUBEWELLS - BY REASON**(In Number/ In Hector)**

Sl. No.	District	Non Availability of Adequate Power/Fuel		Mechanical Break Down		Less discharge of Water		Non-Availability of Finance		Lack of Maintenance		Others		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	IDUKKI	0	0.00	1	0.00	1	0.00	0	0.00	0	0.00	0	0.00	2	0.00
2	KASARGOD	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00
3	KOLLAM	0	0.00	0	0.00	0	0.00	0	0.00	4	0.00	1	0.00	5	0.00
4	PALAKKAD	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	2	0.00	3	0.00
	Total	0	0.00	2	0.00	1	0.00	1	0.00	4	0.00	3	0.00	11	0.00

TABLE 4.9: DISTRIBUTION OF PERMANENTLY NOT IN USE DEEP TUBEWELLS - BY REASON**(In Number/In Ha)**

Sl. No.	District	Salinity		Dried up		Destroyed beyond repair		Sea water intrusion		Industrial effluents		Availability of Major/ Medium Irrigation Projects		Other reasons		Total	
		No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL	No.	PL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	PALAKKAD	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	3	0.00	5	0.00
	Total	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	3	0.00	5	0.00

TABLE 4.10: DISTRIBUTION OF IN USE DEEP TUBE WELLS ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED

(In Number/In Ha)

Sl. No.	District	No. & PU of Deep Tube well Schemes According to Water Distribution System															
		Open Water (Lined/ Pucca)		Open Water (Unlined/ Kutchra)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	0	0.00	0	0.00	0	0.00	1	1.00	0	0.00	0	0.00	0	0.00	1	1.00
2	ERNAKULAM	0	0.00	5	2.21	1	0.40	4	2.15	0	0.00	1	1.19	2	0.34	13	6.29
3	IDUKKI	2	2.67	1	1.21	14	8.13	238	276.51	3	6.16	15	24.28	1	1.00	274	319.96
4	KANNUR	0	0.00	0	0.00	2	5.50	21	13.07	0	0.00	5	4.20	0	0.00	28	22.77
5	KASARGOD	6	6.90	16	19.90	12	7.08	236	141.67	6	3.25	171	113.33	4	1.13	451	293.26
6	KOLLAM	0	0.00	2	0.20	0	0.00	0	0.00	0	0.00	1	0.70	1	0.60	4	1.50
7	KOTTAYAM	0	0.00	0	0.00	1	0.12	8	4.39	0	0.00	0	0.00	0	0.00	9	4.51
8	KOZHIKODE	0	0.00	1	0.40	1	1.30	12	3.79	0	0.00	2	1.98	2	0.20	18	7.67
9	MALAPPURAM	3	1.97	18	9.57	1	0.71	72	30.12	2	0.82	17	19.08	4	3.05	117	65.32
10	PALAKKAD	30	70.96	249	251.86	96	230.46	219	583.69	23	26.45	10	8.59	1	0.94	628	1172.95
11	PATHANAMTHITTA	0	0.00	0	0.00	0	0.00	4	1.64	0	0.00	0	0.00	0	0.00	4	1.64
12	THIRUVANANTHAPURAM	0	0.00	0	0.00	0	0.00	2	0.84	0	0.00	0	0.00	2	0.84	4	1.68
13	THRISSUR	3	4.34	49	55.00	9	3.90	208	131.53	8	5.34	24	20.92	0	0.00	301	221.03
14	WAYANAD	0	0.00	0	0.00	0	0.00	1	1.60	0	0.00	2	0.82	0	0.00	3	2.42
	Total	44	86.84	341	340.35	137	257.60	1026	1192.00	42	42.02	248	195.09	17	8.10	1855	2122.00

TABLE 4.11: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE DEEP TUBE WELLS ACCORDING TO WATER LIFTING DEVICE**(In Number)**

Sl. No.	District	Number of schemes by lifting Device					
		Submersible Pump	Centrifugal Pump	Turbine	Manual/Animal	Others	Total(3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1	0	0	0	0	1
2	ERNAKULAM	2	7	3	1	0	13
3	IDUKKI	250	17	6	2	1	276
4	KANNUR	25	1	2	0	0	28
5	KASARGOD	431	17	0	0	4	452
6	KOLLAM	0	1	2	6	0	9
7	KOTTAYAM	7	1	1	0	0	9
8	KOZHIKODE	7	9	2	0	0	18
9	MALAPPURAM	79	24	14	0	0	117
10	PALAKKAD	492	134	1	3	1	631
11	PATHANAMTHITTA	4	0	0	0	0	4
12	THIRUVANANTHAPUR	4	0	0	0	0	4
13	THRISSUR	230	64	6	1	0	301
14	WAYANAD	3	0	0	0	0	3
	Total	1535	275	37	13	6	1866

TABLE 4.12: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE DEEP TUBEWELLS ACCORDING TO SOURCE OF ENERGY**(In Number)**

Sl. No.	District	Number of schemes by source of energy						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1	0	0	0	0	0	1
2	ERNAKULAM	12	0	0	0	1	0	13
3	IDUKKI	264	10	0	0	2	0	276
4	KANNUR	28	0	0	0	0	0	28
5	KASARGOD	450	0	0	0	0	2	452
6	KOLLAM	2	1	0	0	6	0	9
7	KOTTAYAM	9	0	0	0	0	0	9
8	KOZHIKODE	18	0	0	0	0	0	18
9	MALAPPURAM	116	1	0	0	0	0	117
10	PALAKKAD	625	2	0	0	3	1	631
11	PATHANAMTHITTA	4	0	0	0	0	0	4
12	THIRUVANANTHAPURAM	4	0	0	0	0	0	4
13	THRISSUR	297	3	0	0	1	0	301
14	WAYANAD	3	0	0	0	0	0	3
	Total	1833	17	0	0	13	3	1866

TABLE 4.13: DISTRIBUTION OF INUSE, TEMPORARILY NOT IN USE DEEP TUBE WELLS ACCORDING TO HORSE POWER OF LIFTING DEVICE**(In Number)**

Sl. No.	District	No. of Deep tube well by horse power of lifting devices						Total (7 and 8)
		0-6 hp	6-12 hp	12-18 hp	>=18 hp	Total(3 to 6)	Schemes without horse power	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1	0	0	0	1	0	1
2	ERNAKULAM	10	1	0	1	12	1	13
3	IDUKKI	251	22	1	0	274	2	276
4	KANNUR	27	1	0	0	28	0	28
5	KASARGOD	349	103	0	0	452	0	452
6	KOLLAM	3	0	0	0	3	6	9
7	KOTTAYAM	9	0	0	0	9	0	9
8	KOZHIKODE	16	2	0	0	18	0	18
9	MALAPPURAM	111	6	0	0	117	0	117
10	PALAKKAD	604	22	1	1	628	3	631
11	PATHANAMTHITTA	4	0	0	0	4	0	4
12	THIRUVANANTHAPURAM	4	0	0	0	4	0	4
13	THRISSUR	298	2	0	0	300	1	301
14	WAYANAD	0	2	0	1	3	0	3
	Total	1687	161	2	3	1853	13	1866

TABLE 4.14: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE DEEP TUBE WELLS ACCORDING TO TOTAL PUMPING HOURS OF OPERATION**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (3to8)	<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (10 to15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	1	0	0	0	0	0	1	1	0	0	0	0	0	1
2	ERNAKULAM	12	0	0	0	0	0	12	12	0	0	0	0	0	12
3	IDUKKI	274	0	0	0	0	0	274	274	0	0	0	0	0	274
4	KANNUR	28	0	0	0	0	0	28	26	2	0	0	0	0	28
5	KASARGOD	445	5	2	0	0	0	452	431	18	3	0	0	0	452
6	KOLLAM	2	1	0	0	0	0	3	3	0	0	0	0	0	3
7	KOTTAYAM	9	0	0	0	0	0	9	9	0	0	0	0	0	9
8	KOZHIKODE	18	0	0	0	0	0	18	18	0	0	0	0	0	18
9	MALAPPURAM	116	1	0	0	0	0	117	115	2	0	0	0	0	117
10	PALAKKAD	587	26	14	1	0	0	628	394	126	65	14	10	19	628
11	PATHANAMTHITTA	4	0	0	0	0	0	4	4	0	0	0	0	0	4
12	THIRUVANANTHAPURAM	4	0	0	0	0	0	4	4	0	0	0	0	0	4
13	THRISSUR	281	16	3	0	0	0	300	262	26	5	4	2	1	300
14	WAYANAD	3	0	0	0	0	0	3	3	0	0	0	0	0	3
	Total	1784	49	19	1	0	0	1853	1556	174	73	18	12	20	1853

TABLE 4.15: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE DEEP TUBE WELLS ACCORDING TO AVERAGE HOURS OF PUMPING PER DAY**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (3 to 8)	0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	1	0	0	0	0	0	1	1	0	0	0	0	0	1
2	ERNAKULAM	12	0	0	0	0	0	12	12	0	0	0	0	0	12
3	IDUKKI	274	0	0	0	0	0	274	274	0	0	0	0	0	274
4	KANNUR	28	0	0	0	0	0	28	28	0	0	0	0	0	28
5	KASARGOD	446	4	2	0	0	0	452	444	6	2	0	0	0	452
6	KOLLAM	2	1	0	0	0	0	3	3	0	0	0	0	0	3
7	KOTTAYAM	9	0	0	0	0	0	9	9	0	0	0	0	0	9
8	KOZHIKODE	18	0	0	0	0	0	18	18	0	0	0	0	0	18
9	MALAPPURAM	117	0	0	0	0	0	117	116	1	0	0	0	0	117
10	PALAKKAD	509	76	40	2	1	0	628	357	185	78	3	0	5	628
11	PATHANAMTHITTA	4	0	0	0	0	0	4	4	0	0	0	0	0	4
12	THIRUVANANTHAPURAM	4	0	0	0	0	0	4	4	0	0	0	0	0	4
13	THRISSUR	263	27	8	2	0	0	300	263	27	8	2	0	0	300
14	WAYANAD	3	0	0	0	0	0	3	3	0	0	0	0	0	3
	Total	1690	108	50	4	1	0	1853	153	219	88	5	0	5	1853

TABLE 4.16: DISTRIBUTION OF DEEP TUBEWELLS ACCORDING TO DEPTH**(In Number)**

Sl. No.	District	No. by the depth of Deep tube well						Total (3 to 8)
		0 to 70 mts	70 to 90 mts	90 to 110 mts	110 to 130 mts	130 to 150 mts	>=150 mts	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	0	1	0	0	0	0	1
2	ERNAKULAM	0	3	5	4	1	0	13
3	IDUKKI	0	51	67	43	15	100	276
4	KANNUR	0	15	11	2	0	0	28
5	KASARGOD	0	249	164	30	6	3	452
6	KOLLAM	0	1	6	1	0	1	9
7	KOTTAYAM	0	3	1	3	2	0	9
8	KOZHIKODE	0	6	6	4	1	1	18
9	MALAPPURAM	0	56	32	27	1	1	117
10	PALAKKAD	0	199	316	77	27	17	636
11	PATHANAMTHITTA	0	1	1	2	0	0	4
12	THIRUVANANTHAPURAM	0	1	2	1	0	0	4
13	THRISSUR	0	140	102	41	11	7	301
14	WAYANAD	0	1	1	0	1	0	3
	Total	0	727	714	235	65	130	1871

TABLE 4.17: DISTRIBUTION OF DEEP TUBEWELLS IN AND OUTSIDE THE COMMAND AREA OF MAJOR/MEDIUM PROJECTS**(In Number)**

Sl. No.	District	Outside command	No. of Deep tube wells inside the command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	1	0	0	0	0	0	1
2	ERNAKULAM	10	1	1	0	1	3	13
3	IDUKKI	274	2	0	0	0	2	276
4	KANNUR	28	0	0	0	0	0	28
5	KASARGOD	452	0	0	0	0	0	452
6	KOLLAM	9	0	0	0	0	0	9
7	KOTTAYAM	9	0	0	0	0	0	9
8	KOZHIKODE	18	0	0	0	0	0	18
9	MALAPPURAM	117	0	0	0	0	0	117
10	PALAKKAD	366	42	219	2	7	270	636
11	PATHANAMTHITTA	4	0	0	0	0	0	4
12	THIRUVANANTHAPURAM	4	0	0	0	0	0	4
13	THRISSUR	296	4	0	0	1	5	301
14	WAYANAD	3	0	0	0	0	0	3
	Total	1591	49	220	2	9	280	1871

TABLE 4.18.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH DEEP TUBEWELLS - ALL SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1.00	0.00	0.50	0.50	0.00	1.00
2	ERNAKULAM	6.28	0.73	0.60	3.91	1.05	6.29
3	IDUKKI	324.52	0.17	0.13	322.96	1.26	324.52
4	KANNUR	26.98	2.02	2.45	19.47	3.05	26.99
5	KASARGOD	296.45	15.65	28.40	254.48	12.35	310.88
6	KOLLAM	1.62	0.55	0.21	0.35	0.51	1.62
7	KOTTAYAM	5.41	0.54	0.70	3.52	0.71	5.47
8	KOZHIKODE	7.67	0.00	0.00	7.63	0.04	7.67
9	MALAPPURAM	74.84	12.90	5.19	54.36	2.78	75.23
10	PALAKKAD	1039.95	407.33	502.10	267.35	16.01	1192.79
11	PATHANAMTHITTA	1.49	0.65	0.45	0.39	0.15	1.64
12	THIRUVANANTHAPURAM	1.68	0.45	0.45	0.48	0.30	1.68
13	THRISSUR	210.27	36.98	38.56	123.89	21.73	221.16
14	WAYANAD	2.42	0.00	0.60	1.82	0.00	2.42
	Total	2000.58	477.97	580.34	1061.11	59.94	2179.36

TABLE 4.18.2: CCA AND SEASON WISE POTENTIAL CREATED THROUGH IN USE DEEP TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	1.00	0.00	0.50	0.50	0.00	1.00
2	ERNAKULAM	6.28	0.73	0.60	3.91	1.05	6.29
3	IDUKKI	319.96	0.17	0.13	318.40	1.26	319.96
4	KANNUR	26.98	2.02	2.45	19.47	3.05	26.99
5	KASARGOD	296.23	15.65	28.40	254.26	12.35	310.66
6	KOLLAM	1.62	0.55	0.21	0.35	0.51	1.62
7	KOTTAYAM	5.41	0.54	0.70	3.52	0.71	5.47
8	KOZHIKODE	7.67	0.00	0.00	7.63	0.04	7.67
9	MALAPPURAM	74.84	12.90	5.19	54.36	2.78	75.23
10	PALAKKAD	1025.71	400.44	495.21	262.00	16.01	1173.66
11	PATHANAMTHITTA	1.49	0.65	0.45	0.39	0.15	1.64
12	THIRUVANANTHAPURAM	1.68	0.45	0.45	0.48	0.30	1.68
13	THRISSUR	210.27	36.98	38.56	123.89	21.73	221.16
14	WAYANAD	2.42	0.00	0.60	1.82	0.00	2.42
Total		1981.56	471.08	573.45	1050.98	59.94	2155.45

TABLE 4.18.3: CCA AND SEASON WISE POTENTIAL CREATED THROUGH TEMPORARILY NOT IN USE DEEP TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	IDUKKI	4.56	0.00	0.00	4.56	0.00	4.56
2	KASARGOD	0.22	0.00	0.00	0.22	0.00	0.22
3	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.00
4	PALAKKAD	11.57	4.47	4.47	5.10	0.00	14.04
	Total	16.35	4.47	4.47	9.88	0.00	18.82

TABLE 4.18.4: CCA AND SEASON WISE POTENTIAL CREATED THROUGH PERMANENTLY NOT IN USE DEEP TUBEWELLS**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	PALAKKAD	2.67	2.42	2.42	0.25	0.00	5.09
	Total	2.67	2.42	2.42	0.25	0.00	5.09

TABLE 4.19.1: SEASON WISE POTENTIAL UTILISED THROUGH DEEP TUBEWELLS – ALL SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	1.00	0.00	0.50	0.50	0.00	1.00
2	ERNAKULAM	0.00	0.16	0.49	0.08	0.73	0.73	0.44	3.42	0.97	5.56	0.73	0.60	3.91	1.05	6.29
3	IDUKKI	0.00	0.00	2.02	0.00	2.02	0.17	0.13	320.94	1.26	322.50	0.17	0.13	322.96	1.26	324.52
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00	1.95	17.97	2.85	22.77	0.00	1.95	17.97	2.85	22.77
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	15.14	25.78	240.64	11.92	293.48	15.14	25.78	240.64	11.92	293.48
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.55	0.15	0.35	0.45	1.50	0.55	0.15	0.35	0.45	1.50
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.06	0.22	3.52	0.71	4.51	0.06	0.22	3.52	0.71	4.51
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.63	0.04	7.67	0.00	0.00	7.63	0.04	7.67
9	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	4.99	3.98	54.19	2.16	65.32	4.99	3.98	54.19	2.16	65.32
10	PALAKKAD	243.03	328.13	94.09	2.34	667.59	161.88	170.84	173.01	13.67	519.40	404.91	498.97	267.10	16.01	1186.99
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	0.65	0.45	0.39	0.15	1.64	0.65	0.45	0.39	0.15	1.64
12	THIRUVANANTHAPURAM	0.00	0.00	0.00	0.00	0.00	0.45	0.45	0.48	0.30	1.68	0.45	0.45	0.48	0.30	1.68
13	THRISSUR	0.24	0.14	0.99	0.14	1.51	36.74	38.42	122.80	21.56	219.52	36.98	38.56	123.79	21.70	221.03
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.82	0.00	2.42	0.00	0.60	1.82	0.00	2.42
	Total	243.27	328.43	97.59	2.56	671.85	221.36	243.91	947.66	56.04	1468.97	464.63	572.34	1045.25	58.60	2140.82

TABLE 4.19.2: SEASON WISE POTENTIAL UTILISED THROUGH IN USE DEEP TUBEWELLS**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	0	0	0	0	0	0.5	0.5	0	1	0	0.5	0.5	0	1
2	ERNAKULAM	0	0.16	0.49	0.08	0.73	0.73	0.44	3.42	0.97	5.56	0.73	0.6	3.91	1.05	6.29
3	IDUKKI	0	0	2.02	0	2.02	0.17	0.13	316.38	1.26	317.94	0.17	0.13	318.4	1.26	319.96
4	KANNUR	0	0	0	0	0	0	1.95	17.97	2.85	22.77	0	1.95	17.97	2.85	22.77
5	KASARGOD	0	0	0	0	0	15.14	25.78	240.42	11.92	293.26	15.14	25.78	240.42	11.92	293.26
6	KOLLAM	0	0	0	0	0	0.55	0.15	0.35	0.45	1.5	0.55	0.15	0.35	0.45	1.5
7	KOTTAYAM	0	0	0	0	0	0.06	0.22	3.52	0.71	4.51	0.06	0.22	3.52	0.71	4.51
8	KOZHIKODE	0	0	0	0	0	0	0	7.63	0.04	7.67	0	0	7.63	0.04	7.67
9	MALAPPURAM	0	0	0	0	0	4.99	3.98	54.19	2.16	65.32	4.99	3.98	54.19	2.16	65.32
10	PALAKKAD	243.03	328.13	94.09	2.34	667.59	157.41	166.37	167.91	13.67	505.36	400.44	494.5	262	16.01	1172.95
11	PATHANAMTHITTA	0	0	0	0	0	0.65	0.45	0.39	0.15	1.64	0.65	0.45	0.39	0.15	1.64
12	THIRUVANANTHAPURAM	0	0	0	0	0	0.45	0.45	0.48	0.3	1.68	0.45	0.45	0.48	0.3	1.68
13	THRISSUR	0.24	0.14	0.99	0.14	1.51	36.74	38.42	122.8	21.56	219.52	36.98	38.56	123.79	21.7	221.03
14	WAYANAD	0	0	0	0	0	0	0.6	1.82	0	2.42	0	0.6	1.82	0	2.42
Total		243.27	328.43	97.59	2.56	671.85	216.89	239.4	937.78	56.04	1450.15	460.16	567.87	1035.37	58.6	2122

TABLE 4.19.3: SEASON WISE POTENTIAL UTILISED THROUGH TEMPORARILY NOT IN USE DEEP TUBEWELLS**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56	0.00	4.56	0.00	0.00	4.56	0.00	4.56
2	KASARGOD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.22	0.00	0.00	0.22	0.00	0.22
3	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	PALAKKAD	0.00	0.00	0.00	0.00	0.00	4.47	4.47	5.10	0.00	14.04	4.47	4.47	5.10	0.00	14.04
	Total	0.00	0.00	0.00	0.00	0.00	4.47	4.47	9.88	0.00	18.82	4.47	4.47	9.88	0.00	18.82

TABLE 4.20: DISTRIBUTION OF IN USE DEEP TUBEWELLS ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl. No.	District	No. of Deep tube wells in use	No. of Deep tube wells without constraints	No. of Deep tube well Having Constraints in utilisation of potential						
				Non Availability of Adequate Power	Mechanical Break Down	Less discharge of Water	Non - Availability of Finance	Lack of Maintenance	Others	Total (5 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	1	1	0	0	0	0	0	0	0
2	ERNAKULAM	13	13	0	0	0	0	0	0	0
3	IDUKKI	274	273	0	0	1	0	0	0	1
4	KANNUR	28	19	0	0	9	0	0	0	9
5	KASARGOD	451	451	0	0	0	0	0	0	0
6	KOLLAM	4	3	0	0	0	0	1	0	1
7	KOTTAYAM	9	9	0	0	0	0	0	0	0
8	KOZHIKODE	18	18	0	0	0	0	0	0	0
9	MALAPPURAM	117	116	0	0	1	0	0	0	1
10	PALAKKAD	628	628	0	0	0	0	0	0	0
11	PATHANAMTHITTA	4	4	0	0	0	0	0	0	0
12	THIRUVANANTHAPURAM	4	4	0	0	0	0	0	0	0
13	THRISSUR	301	301	0	0	0	0	0	0	0
14	WAYANAD	3	3	0	0	0	0	0	0	0
	Total	1855	1843	0	0	11	0	1	0	12

SURFACE FLOW

TABLE 5.1: NUMBER OF SURFACE FLOW SCHEMES BY TYPE**(In Number)**

Sl. No.	District	Type of Surface Flow Schemes								
		Reservoir	Tank/ Ponds	Other Storage	Permanent Diversion	Temporary Diversion	Water conservation- cum-ground water recharge schemes/ precolation tanks/ check dams etc.	Spring Channel	Others	Total (3 to10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	161	10	186	182	1	2	87	629
2	ERNAKULAM	0	251	8	68	33	32	47	63	502
3	IDUKKI	4	224	3	30	5	83	3	13	365
4	KANNUR	0	212	11	22	74	188	5	47	559
5	KASARGOD	0	165	5	19	11	84	1	29	314
6	KOLLAM	0	157	3	40	81	5	43	71	400
7	KOTTAYAM	0	31	13	196	176	123	28	125	692
8	KOZHIKODE	0	98	1	24	1	53	0	19	196
9	MALAPPURAM	1	464	26	64	63	276	1	153	1048
10	PALAKKAD	0	706	16	48	38	53	66	21	948
11	PATHANAMTHITTA	0	224	1	10	26	2	1	38	302
12	THIRUVANANTHAPURAM	1	905	6	241	110	57	7	102	1429
13	THRISSUR	4	239	4	54	49	16	14	47	427
14	WAYANAD	1	242	3	16	2	152	2	40	458
	Total	11	4079	110	1018	851	1125	220	855	8269

TABLE 5.2: DISTRIBUTION OF SURFACE FLOW SCHEMES ACCORDING TO OWNERSHIP**(In Number)**

Sl. No.	District	Public					Private			
		Govt. Owned	Coop Society	Panchayat Owned	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	Grand Total (7 + 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	174	2	83	12	271	238	120	358	629
2	ERNAKULAM	10	2	114	56	182	93	227	320	502
3	IDUKKI	55	0	40	90	185	24	156	180	365
4	KANNUR	65	1	208	14	288	73	198	271	559
5	KASARGOD	52	6	36	55	149	75	90	165	314
6	KOLLAM	1	6	32	20	59	87	254	341	400
7	KOTTAYAM	59	2	54	12	127	371	194	565	692
8	KOZHIKODE	61	4	16	10	91	12	93	105	196
9	MALAPPURAM	136	11	354	168	669	103	276	379	1048
10	PALAKKAD	34	4	183	94	315	173	460	633	948
11	PATHANAMTHITTA	114	6	68	15	203	12	87	99	302
12	THIRUVANANTHAPURAM	16	4	468	68	556	352	521	873	1429
13	THRISSUR	41	17	137	22	217	77	133	210	427
14	WAYANAD	175	4	117	40	336	42	80	122	458
	Total	993	69	1910	676	3648	1732	2889	4621	8269

TABLE 5.3.1: DISTRIBUTION OF SURFACE FLOW SCHEMES ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes owned by						Total (7 + 8)
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)	Owned by other than individual farmer (incl. Public & Group of farmers)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	4	0	17	99	120	509	629
2	ERNAKULAM	7	0	65	155	227	275	502
3	IDUKKI	4	10	24	118	156	209	365
4	KANNUR	3	4	117	74	198	361	559
5	KASARGOD	0	5	25	60	90	224	314
6	KOLLAM	18	2	84	150	254	146	400
7	KOTTAYAM	3	0	62	129	194	498	692
8	KOZHIKODE	1	1	33	58	93	103	196
9	MALAPPURAM	10	1	221	44	276	772	1048
10	PALAKKAD	25	3	128	304	460	488	948
11	PATHANAMTHITTA	2	0	15	70	87	215	302
12	THIRUVANANTHAPURAM	20	8	113	380	521	908	1429
13	THRISSUR	1	0	49	83	133	294	427
14	WAYANAD	2	8	15	55	80	378	458
	Total	100	42	968	1779	2889	5380	8269

TABLE 5.3.2: DISTRIBUTION OF SURFACE FLOW SCHEMES ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No.	District	No. of Surface flow Schemes owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	0	0	5	24	29
2	ERNAKULAM	1	0	14	18	33
3	IDUKKI	0	3	4	5	12
4	KANNUR	0	0	43	14	57
5	KASARGOD	0	1	1	9	11
6	KOLLAM	7	0	26	23	56
7	KOTTAYAM	0	0	4	19	23
8	KOZHIKODE	0	1	2	18	21
9	MALAPPURAM	3	0	23	7	33
10	PALAKKAD	5	0	12	46	63
11	PATHANAMTHITTA	0	0	2	10	12
12	THIRUVANANTHAPURAM	3	4	23	87	117
13	THRISSUR	0	0	15	16	31
14	WAYANAD	0	2	3	10	15
	Total	19	11	177	306	513

TABLE 5.4: DISTRIBUTION OF SURFACE FLOW SCHEMES ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes by size class of owner					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	80	21	10	7	2	120
2	ERNAKULAM	179	31	11	3	3	227
3	IDUKKI	87	33	18	7	11	156
4	KANNUR	164	20	5	5	4	198
5	KASARGOD	39	33	12	5	1	90
6	KOLLAM	203	27	12	7	5	254
7	KOTTAYAM	118	46	23	3	4	194
8	KOZHIKODE	77	9	3	4	0	93
9	MALAPPURAM	207	47	16	6	0	276
10	PALAKKAD	230	101	72	34	23	460
11	PATHANAMTHITTA	74	5	5	3	0	87
12	THIRUVANANTHAPURAM	431	36	30	15	9	521
13	THRISSUR	113	15	4	0	1	133
14	WAYANAD	11	32	21	15	1	80
	Total	2013	456	242	114	64	2889

TABLE 5.5: DISTRIBUTION OF SURFACE FLOW SCHEMES AND COST OF CONSTRUCTION**(In Rs. 000)**

Sl. No.	District	Number and Cost of Construction of Surface Flow Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	446	96547	99	13206	67	5280	10	2325	7	1850	629	119208
2	ERNAKULAM	482	35484	13	1729	3	12	1	10	3	670	502	37905
3	IDUKKI	306	42602	20	3653	10	1110	12	1228	17	3006	365	51599
4	KANNUR	502	66657	25	2051	5	720	9	1275	18	8230	559	78933
5	KASARGOD	285	22749	4	955	19	940	2	360	4	1145	314	26149
6	KOLLAM	236	9019	41	307	25	597	15	79	83	1106	400	11107
7	KOTTAYAM	513	83597	21	3694	4	537	44	7790	110	8696	692	104314
8	KOZHIKODE	167	19932	15	6781	5	509	3	2350	6	1987	196	31559
9	MALAPPURAM	958	195139	22	6720	27	1624	17	2726	24	7583	1048	213791
10	PALAKKAD	763	18229	126	1502	36	1140	10	265	13	114	948	21250
11	PATHANAMTHITTA	235	14759	24	2354	23	5563	9	121	11	4582	302	27378
12	THIRUVANANTHAPURAM	1133	28247	101	5778	71	3973	45	1040	79	4058	1429	43096
13	THRISSUR	352	13099	44	1248	5	902	13	1200	13	817	427	17265
14	WAYANAD	370	96577	41	11246	14	2220	14	6304	19	17142	458	133488
	Total	6748	742636	596	61223	314	25127	204	27072	407	60985	8269	917043

TABLE 5.6.1: DISTRIBUTION OF SURFACE FLOW SCHEMES BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes according to the Annual Cost of Maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	469	132	28	0	0	629
2	ERNAKULAM	468	8	25	1	0	502
3	IDUKKI	359	6	0	0	0	365
4	KANNUR	543	14	2	0	0	559
5	KASARGOD	300	7	7	0	0	314
6	KOLLAM	352	41	7	0	0	400
7	KOTTAYAM	649	27	14	1	1	692
8	KOZHIKODE	177	18	1	0	0	196
9	MALAPPURAM	991	46	10	0	1	1048
10	PALAKKAD	901	41	6	0	0	948
11	PATHANAMTHITTA	284	11	7	0	0	302
12	THIRUVANANTHAPURAM	1329	47	39	14	0	1429
13	THRISSUR	402	21	3	1	0	427
14	WAYANAD	456	1	1	0	0	458
	Total	7680	420	150	17	2	8269

Table.5.6.2: AVERAGE COST OF CONSTRUCTION, MACHINERY, ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR SURFACE FLOW SCHEMES**(Amount in thousands)**

Sl. No.	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Surface Flow for which subsidy was received	Average amount of subsidy	No. of Surface Flow for which subsidy was received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	190	3	2	43	130	7	41
2	ERNAKULAM	76	5	2	18	242	11	92
3	IDUKKI	141	8	0	7	84	0	0
4	KANNUR	141	2	0	61	192	3	3
5	KASARGOD	83	2	1	8	74	1	30
6	KOLLAM	28	4	1	12	6	7	3
7	KOTTAYAM	151	9	1	122	37	52	12
8	KOZHIKODE	161	7	0	5	491	3	12
9	MALAPPURAM	204	2	1	28	811	10	4
10	PALAKKAD	22	4	0	6	57	0	0
11	PATHANAMTHITTA	91	1	1	1	10	4	11
12	THIRUVANANTHAPURAM	30	1	2	64	96	7	25
13	THRISSUR	40	5	1	3	17	4	8
14	WAYANAD	291	2	0	16	109	1	0
Total		111	4	1	394	155	110	21

TABLE 5.7: DISTRIBUTION OF SURFACE FLOW SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO MAJOR SOURCE OF FINANCE**(In Number)**

Sl. No.	District	With Single Source of Finance						With two Sources of Finance								Grand Total (8 +16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3to7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9to15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	0	28	0	0	28	4	2	0	0	0	0	86	92	120
2	ERNAKULAM	5	11	82	0	61	159	4	0	0	0	0	0	64	68	227
3	IDUKKI	1	4	101	0	2	108	1	0	1	0	0	0	46	48	156
4	KANNUR	1	1	151	0	38	191	2	2	1	1	0	0	1	7	198
5	KASARGOD	1	0	45	0	18	64	15	1	3	0	0	0	7	26	90
6	KOLLAM	3	3	146	0	31	183	11	46	4	0	0	0	10	71	254
7	KOTTAYAM	15	0	142	1	5	163	3	14	0	0	0	0	14	31	194
8	KOZHIKODE	0	1	66	0	2	69	0	1	9	0	0	0	14	24	93
9	MALAPPURAM	6	11	142	2	102	263	0	1	1	0	0	0	11	13	276
10	PALAKKAD	24	10	267	1	71	373	7	1	2	0	1	0	76	87	460
11	PATHANAMTHITTA	1	3	74	0	3	81	0	2	1	2	0	0	1	6	87
12	THIRUVANANTHAPURAM	12	5	169	28	200	414	13	17	7	0	5	0	65	107	521
13	THRISSUR	5	0	88	0	5	98	6	1	0	0	0	0	28	35	133
14	WAYANAD	1	5	47	0	4	57	2	2	1	2	0	0	16	23	80
	Total	75	54	1548	32	542	2251	68	90	30	5	6	0	439	638	2889

TABLE 5.8: DISTRIBUTION OF SURFACE FLOW SCHEMES BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Schemes in use	Schemes not in use			Grand Total (3+6)	Number of Schemes meant only for re-charge of ground water		
			Temporarily	Permanently	Total (4+5)		In use	Not in use (Temp +Pmt)	Total (8+9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	620	7	2	9	629	2	2	4
2	ERNAKULAM	495	3	4	7	502	44	4	48
3	IDUKKI	356	6	3	9	365	75	3	78
4	KANNUR	540	17	2	19	559	2	0	2
5	KASARGOD	302	7	5	12	314	33	6	39
6	KOLLAM	390	8	2	10	400	6	0	6
7	KOTTAYAM	686	1	5	6	692	4	0	4
8	KOZHIKODE	171	18	7	25	196	0	13	13
9	MALAPPURAM	1027	17	4	21	1048	20	5	25
10	PALAKKAD	914	27	7	34	948	34	7	41
11	PATHANAMTHITTA	292	4	6	10	302	0	7	7
12	THIRUVANANTHAPURAM	1422	6	1	7	1429	11	0	11
13	THRISSUR	424	0	3	3	427	16	0	16
14	WAYANAD	429	27	2	29	458	37	4	41
	Total	8068	148	53	201	8269	284	51	335

TABLE 5.9: DISTRIBUTION OF TEMPORARILY NOT IN USE SURFACE FLOW SCHEMES BY REASONS**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes Temporarily not in use due to								
		Non Availability of adequate	Mechanical Break Down	Less discharge of Water	Non - Availability of Finance	Storage not filled up fully	Siltation of Channel/ Storage	Channel Break Down	Others	Total (3 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	2	0	0	0	3	0	2	7
2	ERNAKULAM	1	0	0	0	0	1	0	1	3
3	IDUKKI	1	1	0	0	0	0	0	4	6
4	KANNUR	1	0	0	0	0	0	0	16	17
5	KASARGOD	0	1	4	0	0	0	1	1	7
6	KOLLAM	0	0	1	0	0	0	0	7	8
7	KOTTAYAM	1	0	0	0	0	0	0	0	1
8	KOZHIKODE	0	0	0	0	0	0	0	18	18
9	MALAPPURAM	0	1	4	5	0	0	0	7	17
10	PALAKKAD	2	0	1	0	8	3	1	12	27
11	PATHANAMTHITTA	0	4	0	0	0	0	0	0	4
12	THIRUVANANTHAPURAM	0	0	5	0	0	1	0	0	6
13	WAYANAD	1	2	5	0	1	8	0	10	27
	Total	7	11	20	5	9	16	2	78	148

TABLE 5.10: DISTRIBUTION OF PERMANENTLY NOT IN USE SURFACE FLOW SCHEMES BY REASONS**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes Permanently not in use due to								
		Salinity	Dried up	Destroyed beyond repair	Due to sea water intrusion	Industrial effluents	Due to Availability of Major/Medium Irrigation Project	Sinking	Other reasons	Total (3 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	1	0	0	0	0	0	1	2
2	ERNAKULAM	0	0	1	0	1	2	0	0	4
3	IDUKKI	0	0	1	0	0	0	0	2	3
4	KANNUR	0	0	1	0	0	0	0	1	2
5	KASARGOD	0	0	1	0	0	0	0	4	5
6	KOLLAM	0	0	0	0	0	0	0	2	2
7	KOTTAYAM	0	1	1	0	0	0	0	3	5
8	KOZHIKODE	0	0	5	0	0	0	0	2	7
9	MALAPPURAM	1	2	1	0	0	0	0	0	4
10	PALAKKAD	0	2	1	0	0	1	0	3	7
11	PATHANAMTHITTA	0	1	2	0	0	0	0	3	6
12	THIRUVANANTHAPURAM	0	0	1	0	0	0	0	0	1
13	THRISSUR	1	1	0	0	0	0	0	1	3
14	WAYANAD	0	1	1	0	0	0	0	0	2
	Total	2	9	16	0	1	3	0	22	53

TABLE 5.11: DISTRIBUTION OF SURFACE FLOW SCHEMES IN USE ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED

(In Number/In Ha)

Sl. No.	District	No. & PU of Surface Flow Schemes According to Water Distribution System															
		Open Water (Lined/Pucca)		Open Water (Unlined/ Kutchra)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	81	5758.61	495	14120.99	3	47.50	25	23.06	0	0.00	0	0.00	16	44.74	620	19994.90
2	ERNAKULAM	94	810.42	276	1180.23	5	3.53	65	107.79	7	13.84	1	0.12	47	158.98	495	2274.91
3	IDUKKI	24	1017.40	63	532.25	9	60.50	148	1689.22	8	10.35	1	2.40	103	1230.30	356	4542.42
4	KANNUR	97	490.38	369	1586.98	7	1.58	21	139.03	4	16.57	2	0.65	40	569.96	540	2805.15
5	KASARGOD	74	881.73	127	586.94	6	19.61	25	216.94	4	1.79	28	15.89	38	324.72	302	2047.62
6	KOLLAM	75	153.59	205	616.41	1	0.84	29	44.30	1	0.36	1	8.44	78	115.79	390	939.73
7	KOTTAYAM	78	2394.36	348	6561.44	104	2941.68	62	683.08	1	0.36	1	0.40	92	519.27	686	13100.59
8	KOZHIKODE	17	62.31	88	435.27	1	12.50	33	152.23	2	0.57	1	2.22	29	163.73	171	828.83
9	MALAPPURAM	101	1062.93	731	5217.76	21	290.34	67	289.26	2	3.15	2	6.82	103	576.53	1027	7446.79
10	PALAKKAD	207	582.76	431	1466.05	18	46.36	189	454.66	2	6.04	4	19.38	63	239.45	914	2814.70
11	PATHANAMTHITTA	18	131.78	194	609.64	1	0.60	4	41.54	0	0.00	1	1.21	74	193.01	292	977.78
12	THIRUVANANTHAPURAM	187	1201.02	810	3336.41	71	168.51	112	1658.34	1	2.88	0	0.00	241	480.31	1422	6847.47
13	THRISSUR	51	1339.66	204	3387.12	11	44.70	146	1517.97	1	0.40	0	0.00	11	750.22	424	7040.07
14	WAYANAD	182	2299.03	171	1285.23	0	0.00	16	110.97	2	14.76	3	10.62	55	273.82	429	3994.43
	Total	1286	18185.98	4512	40922.72	258	3638.25	942	7128.39	35	71.07	45	68.15	990	5640.83	8068	75655.39

TABLE 5.12: DISTRIBUTION OF SURFACE FLOW SCHEMES IN AND OUTSIDE THE COMMAND AREA OF MAJOR/MEDIUM PROJECTS

(In Number)

Sl. No.	District	Outside command	No. of Surface flow Schemes inside the command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	601	2	5	3	18	28	629
2	ERNAKULAM	404	36	29	18	15	98	502
3	IDUKKI	362	1	0	0	2	3	365
4	KANNUR	554	5	0	0	0	5	559
5	KASARGOD	292	2	17	0	3	22	314
6	KOLLAM	392	2	3	0	3	8	400
7	KOTTAYAM	649	40	3	0	0	43	692
8	KOZHIKODE	187	1	8	0	0	9	196
9	MALAPPURAM	1039	0	0	0	9	9	1048
10	PALAKKAD	804	21	92	0	31	144	948
11	PATHANAMTHITTA	285	11	5	0	1	17	302
12	THIRUVANANTHAPURAM	1181	174	73	1	0	248	1429
13	THRISSUR	421	3	2	0	1	6	427
14	WAYANAD	458	0	0	0	0	0	458
Total		7629	298	237	22	83	640	8269

TABLE 5.13.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH SURFACE FLOW SCHEMES – ALL**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	17408.74	9654.93	9588.59	376.31	797.01	20416.84
2	ERNAKULAM	2420.89	783.29	608.20	798.20	413.86	2603.55
3	IDUKKI	4559.66	1222.89	1221.79	935.96	1183.02	4563.66
4	KANNUR	3149.21	359.08	1186.98	1314.29	290.11	3150.46
5	KASARGOD	2049.52	895.94	317.20	807.55	113.34	2134.03
6	KOLLAM	957.61	482.34	310.39	104.07	77.46	974.26
7	KOTTAYAM	13132.34	5960.59	4057.50	1261.18	2051.74	13331.01
8	KOZHIKODE	739.52	171.76	209.49	416.77	74.91	872.93
9	MALAPPURAM	8405.66	2327.04	2399.62	2708.64	1251.94	8687.24
10	PALAKKAD	2716.20	988.92	1158.82	775.72	39.96	2963.42
11	PATHANAMTHITTA	886.33	332.46	300.01	326.64	155.99	1115.10
12	THIRUVANANTHAPURAM	6315.98	1233.46	1211.57	4026.05	715.96	7187.04
13	THRISSUR	6920.03	1130.47	2472.30	3108.76	399.40	7110.93
14	WAYANAD	4110.47	2067.64	919.85	886.28	514.32	4388.09
Total		73772.16	27610.81	25962.31	17846.42	8079.02	79498.56

TABLE 5.13.2: CCA AND SEASON WISE POTENTIAL CREATED THROUGH IN USE SURFACE FLOW SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	17236.84	9599.93	9535.09	315.06	769.86	20219.94
2	ERNAKULAM	2419.12	783.09	607.93	797.50	413.26	2601.78
3	IDUKKI	4546.24	1222.03	1220.48	925.46	1181.81	4549.78
4	KANNUR	3076.24	354.08	1181.98	1266.17	275.26	3077.49
5	KASARGOD	1977.82	895.94	316.45	737.60	112.34	2062.33
6	KOLLAM	942.77	474.56	305.19	102.52	77.15	959.42
7	KOTTAYAM	13056.33	5957.39	4057.50	1219.49	2020.62	13255.00
8	KOZHIKODE	705.58	171.76	203.43	389.74	69.06	833.99
9	MALAPPURAM	8310.84	2317.04	2390.37	2641.60	1243.41	8592.42
10	PALAKKAD	2615.06	987.72	1099.93	734.67	39.96	2862.28
11	PATHANAMTHITTA	877.25	332.46	300.01	317.56	155.99	1106.02
12	THIRUVANANTHAPURAM	6304.46	1231.01	1208.62	4022.31	713.58	7175.52
13	THRISSUR	6884.23	1130.47	2451.50	3093.76	399.40	7075.13
14	WAYANAD	3921.43	1939.73	867.69	830.02	481.47	4118.91
	Total	72874.21	27397.21	25746.17	17393.46	7953.17	78490.01

TABLE 5.13.3: CCA AND SEASON WISE POTENTIAL CREATED THROUGH TEMPORARILY NOT IN USE SURFACE FLOW SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	151.90	45.00	43.50	61.25	27.15	176.90
2	ERNAKULAM	0.61	0.10	0.21	0.00	0.30	0.61
3	IDUKKI	13.42	0.86	1.31	10.50	1.21	13.88
4	KANNUR	42.52	0.00	0.00	27.67	14.85	42.52
5	KASARGOD	11.70	0.00	0.75	9.95	1.00	11.70
6	KOLLAM	12.52	5.96	5.20	1.05	0.31	12.52
7	KOTTAYAM	39.25	0.00	0.00	39.25	0.00	39.25
8	KOZHIKODE	29.47	0.00	5.06	24.28	5.13	34.47
9	MALAPPURAM	92.80	10.00	8.20	66.90	7.70	92.80
10	PALAKKAD	94.85	1.20	58.89	34.76	0.00	94.85
11	PATHANAMTHITTA	9.08	0.00	0.00	9.08	0.00	9.08
12	THIRUVANANTHAPURAM	11.43	2.45	2.95	3.65	2.38	11.43
13	WAYANAD	176.72	127.91	52.16	43.94	32.85	256.86
	Total	686.27	193.48	178.23	332.28	92.88	796.87

TABLE 5.13.4: CCA AND SEASON WISE POTENTIAL CREATED THROUGH PERMANENTLY NOT IN USE SURFACE FLOW SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total(4to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	20.00	10.00	10.00	0.00	0.00	20.00
2	ERNAKULAM	1.16	0.10	0.06	0.70	0.30	1.16
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00
4	KANNUR	30.45	5.00	5.00	20.45	0.00	30.45
5	KASARGOD	60.00	0.00	0.00	60.00	0.00	60.00
6	KOLLAM	2.32	1.82	0.00	0.50	0.00	2.32
7	KOTTAYAM	36.76	3.20	0.00	2.44	31.12	36.76
8	KOZHIKODE	4.47	0.00	1.00	2.75	0.72	4.47
9	MALAPPURAM	2.02	0.00	1.05	0.14	0.83	2.02
10	PALAKKAD	6.29	0.00	0.00	6.29	0.00	6.29
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	0.00
12	THIRUVANANTHAPURAM	0.09	0.00	0.00	0.09	0.00	0.09
13	THRISSUR	35.80	0.00	20.80	15.00	0.00	35.80
14	WAYANAD	12.32	0.00	0.00	12.32	0.00	12.32
	Total	211.68	20.12	37.91	120.68	32.97	211.68

TABLE 5.14.1: SEASON WISE POTENTIAL UTILISED THROUGH SURFACE FLOW SCHEMES – ALL**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	384.45	381.97	156.53	90.37	1013.32	9127.0	9130.	199.83	684.89	19141.83	9511.51	9512.02	356.36	775.26	20155.15
2	ERNAKULAM	128.17	115.82	237.72	66.75	548.46	554.44	441.7	451.92	278.95	1727.06	682.61	557.57	689.64	345.70	2275.52
3	IDUKKI	0.00	0.00	1.61	0.00	1.61	1222.0	1221.	928.00	1182.82	4554.69	1222.08	1221.79	929.61	1182.82	4556.30
4	KANNUR	0.00	0.08	27.71	0.08	27.87	191.90	1166.	1202.82	259.07	2819.80	191.90	1166.09	1230.53	259.15	2847.67
5	KASARGOD	5.24	4.04	14.36	1.17	24.81	883.26	307.6	730.99	112.17	2034.11	888.50	311.73	745.35	113.34	2058.92
6	KOLLAM	3.53	3.65	2.49	3.49	13.16	471.32	295.2	99.95	72.55	939.09	474.85	298.92	102.44	76.04	952.25
7	KOTTAYAM	3.82	376.39	3.63	1.55	385.39	5924.6	3676.	1136.96	2016.55	12754.45	5928.50	4052.65	1140.59	2018.10	13139.84
8	KOZHIKODE	1.82	15.00	105.03	11.50	133.35	169.79	190.5	307.97	61.65	729.95	171.61	205.54	413.00	73.15	863.30
9	MALAPPURAM	0.00	1.60	3.51	0.90	6.01	1533.6	2239.	2603.95	1150.21	7527.58	1533.65	2241.37	2607.46	1151.11	7533.59
10	PALAKKAD	448.43	391.94	65.07	15.00	920.44	521.32	742.8	702.04	22.76	1989.01	969.75	1134.83	767.11	37.76	2909.45
11	PATHANAMTHITTA	3.76	1.54	45.45	0.08	50.83	295.39	272.8	235.59	132.20	936.03	299.15	274.39	281.04	132.28	986.86
12	THIRUVANANTHAPURAM	117.97	129.65	475.32	151.14	874.08	1040.1	1048.	3389.49	506.00	5984.62	1158.13	1178.62	3864.81	657.14	6858.70
13	THRISSUR	143.75	25.01	15.19	0.00	183.95	986.72	2426.	3043.51	399.40	6856.12	1130.47	2451.50	3058.70	399.40	7040.07
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	1972.7	887.8	866.01	475.15	4201.71	1972.73	887.82	866.01	475.15	4201.71
	Total	1240.94	1446.6	1153.62	342.03	4183.28	24894.	24048	15899.03	7354.37	72196.05	26135.44	25494.84	17052.65	7696.40	76379.33

TABLE 5.14.2: SEASON WISE POTENTIAL UTILISED THROUGHIN USE SURFACE FLOW SCHEMES

(In Hectares)

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	354.45	358.47	120.28	73.37	906.57	9114.06	9115.0	182.33	676.89	19088.33	9468.51	9473.52	302.61	750.26	19994.90
2	ERNAKULAM	128.07	115.61	237.72	66.45	547.85	554.44	441.75	451.92	278.95	1727.06	682.51	557.36	689.64	345.40	2274.91
3	IDUKKI	0.00	0.00	1.61	0.00	1.61	1221.22	1220.4	917.50	1181.61	4540.81	1221.22	1220.48	919.11	1181.61	4542.42
4	KANNUR	0.00	0.08	0.04	0.08	0.20	191.90	1166.0	1202.82	244.22	2804.95	191.90	1166.09	1202.86	244.30	2805.15
5	KASARGOD	5.24	4.04	14.36	1.17	24.81	883.26	306.94	721.44	111.17	2022.81	888.50	310.98	735.80	112.34	2047.62
6	KOLLAM	3.53	3.65	2.49	3.49	13.16	465.36	290.07	98.90	72.24	926.57	468.89	293.72	101.39	75.73	939.73
7	KOTTAYAM	3.82	376.39	3.63	1.55	385.39	5924.68	3676.2	1097.71	2016.55	12715.20	5928.50	4052.65	1101.34	2018.10	13100.59
8	KOZHIKODE	1.82	15.00	105.03	11.50	133.35	169.79	185.48	283.69	56.52	695.48	171.61	200.48	388.72	68.02	828.83
9	MALAPPURAM	0.00	1.60	3.51	0.90	6.01	1525.65	2231.5	2541.05	1142.51	7440.78	1525.65	2233.17	2544.56	1143.41	7446.79
10	PALAKKAD	447.23	391.24	65.07	15.00	918.54	521.32	684.80	667.28	22.76	1896.16	968.55	1076.04	732.35	37.76	2814.70
11	PATHANAMTHITTA	3.76	1.54	45.45	0.08	50.83	295.39	272.85	226.51	132.20	926.95	299.15	274.39	271.96	132.28	977.78
12	THIRUVANANTHAPURAM	117.97	129.65	473.87	149.76	871.25	1037.71	1046.0	3387.49	505.00	5976.22	1155.68	1175.67	3861.36	654.76	6847.47
13	THRISSUR	143.75	25.01	15.19	0.00	183.95	986.72	2426.4	3043.51	399.40	6856.12	1130.47	2451.50	3058.70	399.40	7040.07
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	1862.06	851.08	822.07	459.22	3994.43	1862.06	851.08	822.07	459.22	3994.43
	Total	1209.64	1422.28	1088.25	323.35	4043.52	24753.5	23914.	15644.22	7299.24	71611.87	25963.20	25337.13	16732.47	7622.59	75655.39

TABLE 5.14.3: SEASON WISE POTENTIAL UTILISED THROUGH TEMPORARILY NOT IN USE SURFACE FLOW SCHEMES

(In Hectares)

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3to6)	Kharif	Rabi	Perennial	Others	Total (8to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7 +12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	30.00	23.50	36.25	17.00	106.75	13.00	15.00	17.50	8.00	53.50	43.00	38.50	53.75	25.00	160.25
2	ERNAKULAM	0.10	0.21	0.00	0.30	0.61	0.00	0.00	0.00	0.00	0.00	0.10	0.21	0.00	0.30	0.61
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.86	1.31	10.50	1.21	13.88	0.86	1.31	10.50	1.21	13.88
4	KANNUR	0.00	0.00	27.67	0.00	27.67	0.00	0.00	0.00	14.85	14.85	0.00	0.00	27.67	14.85	42.52
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	0.00	0.75	9.55	1.00	11.30	0.00	0.75	9.55	1.00	11.30
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	5.96	5.20	1.05	0.31	12.52	5.96	5.20	1.05	0.31	12.52
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.25	0.00	39.25	0.00	0.00	39.25	0.00	39.25
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	0.00	5.06	24.28	5.13	34.47	0.00	5.06	24.28	5.13	34.47
9	MALAPPURAM	0.00	0.00	0.00	0.00	0.00	8.00	8.20	62.90	7.70	86.80	8.00	8.20	62.90	7.70	86.80
10	PALAKKAD	1.20	0.70	0.00	0.00	1.90	0.00	58.09	34.76	0.00	92.85	1.20	58.79	34.76	0.00	94.75
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.08	0.00	9.08	0.00	0.00	9.08	0.00	9.08
12	THIRUVANANTHAPURAM	0.00	0.00	1.45	1.38	2.83	2.45	2.95	2.00	1.00	8.40	2.45	2.95	3.45	2.38	11.23
13	WAYANAD	0.00	0.00	0.00	0.00	0.00	110.67	36.74	43.94	15.93	207.28	110.67	36.74	43.94	15.93	207.28
	Total	31.30	24.41	65.37	18.68	139.76	140.94	133.30	254.81	55.13	584.18	172.24	157.71	320.18	73.81	723.94

TABLE 5.15: DISTRIBUTION OF IN USE SURFACE FLOW SCHEMES ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl. No.	District	No. of Surface Flow Schemes having Constraints in utilisation of potential										Grand Total (4 + 12)
		No. of Schemes in use	No. of Schemes without constraints	Inadequate power supply	Mechanical Break Down	Less Discharge of Water	Storage not filled up fully	Siltation of Canal/ Storage	Channel Break Down	Others	Total (5 to 11)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	ALAPPUZHA	620	609	1	0	0	0	4	0	6	11	620
2	ERNAKULAM	495	459	7	0	4	4	18	0	3	36	495
3	IDUKKI	356	346	5	0	2	1	0	0	2	10	356
4	KANNUR	540	526	0	0	9	0	0	0	5	14	540
5	KASARGOD	302	300	0	0	0	0	0	0	2	2	302
6	KOLLAM	390	366	6	1	3	0	0	4	10	24	390
7	KOTTAYAM	686	684	0	0	0	1	0	0	1	2	686
8	KOZHIKODE	171	154	3	1	0	4	0	0	9	17	171
9	MALAPPURAM	1027	999	9	1	1	4	3	0	10	28	1027
10	PALAKKAD	914	896	0	1	7	0	1	1	8	18	914
11	PATHANAMTHITTA	292	284	0	0	1	0	0	0	7	8	292
12	THIRUVANANTHAPURAM	1422	1307	23	0	33	18	9	1	31	115	1422
13	THRISSUR	424	407	6	0	10	1	0	0	0	17	424
14	WAYANAD	429	411	0	0	0	6	8	2	2	18	429
	Total	8068	7748	60	4	70	39	43	8	96	320	8068

TABLE 5.16: DISTRIBUTION OF TANKS/RESERVOIR & OTHER STORAGE OF SURFACE FLOW SCHEMES BY STORAGE SIZE**(In Number)**

Sl. No.	District	No. of Tanks/Reservoir & Other Storages by Designed storage					
		Not Available or Zero	More than 0 and upto100cubicmts	More than 100 and upto1000 cubicmts	More than 1000 and upto10000 cubic mts	Morethan10000 cubic mts	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0	10	89	63	9	171
2	ERNAKULAM	0	40	122	78	19	259
3	IDUKKI	0	67	115	48	1	231
4	KANNUR	0	69	97	43	14	223
5	KASARGOD	0	20	89	49	12	170
6	KOLLAM	0	36	69	48	7	160
7	KOTTAYAM	0	16	17	10	1	44
8	KOZHIKODE	0	18	52	23	6	99
9	MALAPPURAM	0	85	236	153	17	491
10	PALAKKAD	0	113	336	200	73	722
11	PATHANAMTHITTA	0	52	104	48	21	225
12	THIRUVANANTHAPURAM	0	149	210	454	99	912
13	THRISSUR	0	22	107	100	18	247
14	WAYANAD	0	31	147	57	11	246
	Total	0	728	1790	1374	308	4200

TABLE 5.16.1: NUMBER AND STORAGE CAPACITY OF RESERVOIRS IN SURFACE FLOW SCHEMES**(Storage capacity in Cubic Meters)**

Sl. No.	District	In use		Temporarily not in use		Permanently not in use		Total	
		No.	Storage capacity	No.	Storage capacity	No.	Storage capacity	No. (3 + 5 +7)	Storage capacity (4+ 6 + 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	IDUKKI	4	8402802.00	0	0.00	0	0.00	4	8402802.00
2	MALAPPURAM	1	2400.00	0	0.00	0	0.00	1	2400.00
3	THIRUVANANTHAPURAM	1	2500000.00	0	0.00	0	0.00	1	2500000.00
4	THRISSUR	4	7381801.00	0	0.00	0	0.00	4	7381801.00
5	WAYANAD	1	7650.00	0	0.00	0	0.00	1	7650.00
	Total	11	18294653.00	0	0.00	0	0.00	11	18294653.00

TABLE 5.16.2: NUMBER AND STORAGE CAPACITY OF TANK/PONDS IN SURFACE FLOW SCHEMES**(Storage capacity in Cubic Meters)**

Sl. No.	District	In use		Temporarily not in use		Permanently not in use		Total	
		No.	Storage capacity	No.	Storage capacity	No.	Storage capacity	No. (3 + 5 +7)	Storage capacity (4+6 + 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	156	313362.04	5	4888.00	0	0.00	161	318250.04
2	ERNAKULAM	248	894332.99	2	324.00	1	12200.00	251	906856.99
3	IDUKKI	222	189193.55	2	750.00	0	0.00	224	189943.55
4	KANNUR	209	535897.83	3	12120.00	0	0.00	212	548017.83
5	KASARGOD	159	548935.50	4	426.12	2	0.21	165	549361.83
6	KOLLAM	150	2197171.69	6	2367.36	1	60.00	157	2199599.05
7	KOTTAYAM	31	33854.86	0	0.00	0	0.00	31	33854.86
8	KOZHIKODE	96	256422.07	1	250.00	1	1.00	98	256673.07
9	MALAPPURAM	453	798819.16	10	16536.00	1	230.00	464	815585.16
10	PALAKKAD	677	3226695.06	25	91451.83	4	12741.00	706	3330887.89
11	PATHANAMTHITTA	224	2037754.43	0	0.00	0	0.00	224	2037754.43
12	THIRUVANANTHAPURAM	902	5408966.35	2	1320.00	1	750.00	905	5411036.35
13	THRISSUR	238	991751.00	0	0.00	1	22000.00	239	1013751.00
14	WAYANAD	235	1052765.79	6	11691.00	1	225.00	242	1064681.79
	Total	4000	18485922.32	66	142124.31	13	48207.21	4079	18676253.84

TABLE 5.16.3: NUMBER AND STORAGE CAPACITY OF OTHER STORAGES IN SURFACE FLOW SCHEMES**(Storage capacity in Cubic Meters)**

Sl. No.	District	In use		Temporarily not in use		Permanently not in use		Total	
		No.	Storage capacity	No.	Storage capacity	No.	Storage capacity	No. (3 + 5 +7)	Storage capacity (4+6 + 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	10	2236986.00	0	0.00	0	0.00	10	2236986.00
2	ERNAKULAM	8	38904.00	0	0.00	0	0.00	8	38904.00
3	IDUKKI	3	1089.00	0	0.00	0	0.00	3	1089.00
4	KANNUR	9	32131.90	2	12000.00	0	0.00	11	44131.90
5	KASARGOD	5	126246.00	0	0.00	0	0.00	5	126246.00
6	KOLLAM	3	1361.00	0	0.00	0	0.00	3	1361.00
7	KOTTAYAM	13	42937.00	0	0.00	0	0.00	13	42937.00
8	KOZHIKODE	1	500.00	0	0.00	0	0.00	1	500.00
9	MALAPPURAM	26	358041.00	0	0.00	0	0.00	26	358041.00
10	PALAKKAD	15	21859.00	1	520.00	0	0.00	16	22379.00
11	PATHANAMTHITTA	1	320.00	0	0.00	0	0.00	1	320.00
12	THIRUVANANTHAPURAM	6	63014.00	0	0.00	0	0.00	6	63014.00
13	THRISSUR	4	28900.00	0	0.00	0	0.00	4	28900.00
14	WAYANAD	3	840.00	0	0.00	0	0.00	3	840.00
	Total	107	2953128.90	3	12520.00	0	0.00	110	2965648.90

TABLE 5.16.4: NUMBER AND STORAGE CAPACITY OF RESERVOIR/ TANKS/ PONDS/ OTHER STORAGES IN SURFACE FLOW SCHEMES**(Storage capacity in Cubic Meters)**

Sl. No.	District	In use		Temporarily not in use		Permanently not in use		Total	
		No.	Storage capacity	No.	Storage capacity	No.	Storage capacity	No. (3 + 5 +7)	Storage capacity (4+ 6 + 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	166	2550348.04	5	4888.00	0	0.00	171	2555236.04
2	ERNAKULAM	256	933236.99	2	324.00	1	12200.00	259	945760.99
3	IDUKKI	229	8593084.55	2	750.00	0	0.00	231	8593834.55
4	KANNUR	218	568029.73	5	24120.00	0	0.00	223	592149.73
5	KASARGOD	164	675181.50	4	426.12	2	0.21	170	675607.83
6	KOLLAM	153	2198532.69	6	2367.36	1	60.00	160	2200960.05
7	KOTTAYAM	44	76791.86	0	0.00	0	0.00	44	76791.86
8	KOZHIKODE	97	256922.07	1	250.00	1	1.00	99	257173.07
9	MALAPPURAM	480	1159260.16	10	16536.00	1	230.00	491	1176026.16
10	PALAKKAD	692	3248554.06	26	91971.83	4	12741.00	722	3353266.89
11	PATHANAMTHITTA	225	2038074.43	0	0.00	0	0.00	225	2038074.43
12	THIRUVANANTHAPURAM	909	7971980.35	2	1320.00	1	750.00	912	7974050.35
13	THRISSUR	246	8402452.00	0	0.00	1	22000.00	247	8424452.00
14	WAYANAD	239	1061255.79	6	11691.00	1	225.00	246	1073171.79
Total		4118	39733704.22	69	154644.31	13	48207.21	4200	39936555.74

TABLE 5.17: DISTRIBUTION OF TANKS/RESERVOIR & OTHER STORAGE OF SURFACE FLOW SCHEMES BY CCA CLASSES**(In Number)**

Sl. No.	District	No. of Public Tanks/Reservoirs & Other Storages by CCA Classes							No. of Private Tanks/ Reservoirs & Other Storages by CCA Classes						
		CCA Classes							CCA Classes						
		0to20 ha	20 to 40ha	40 to 100ha	100 to 500ha	500 to 1000ha	1000 to 2000ha	Total (3 to 8)	0to20 ha	20 to 40ha	40 to 100ha	100 to 500ha	500 to 1000 ha	1000 to 2000ha	Total (10to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	50	8	9	5	0	0	72	96	0	3	0	0	0	99
2	ERNAKULAM	97	10	0	0	0	0	107	118	4	1	0	0	0	123
3	IDUKKI	41	9	8	3	0	0	61	121	3	2	0	0	0	126
4	KANNUR	59	6	0	0	0	0	65	157	1	0	0	0	0	158
5	KASARGOD	34	0	1	0	0	0	35	117	1	0	0	0	0	118
6	KOLLAM	34	2	1	0	0	0	37	117	3	1	0	0	0	121
7	KOTTAYAM	6	0	2	0	0	0	8	33	1	2	0	0	0	36
8	KOZHIKODE	24	0	0	0	0	0	24	74	0	0	0	0	0	74
9	MALAPPURAM	227	23	4	1	0	0	255	225	0	0	0	0	0	225
10	PALAKKAD	227	5	1	0	0	0	233	450	5	2	0	0	0	457
11	PATHANAMTHITTA	154	4	2	0	0	0	160	65	0	0	0	0	0	65
12	THIRUVANANTHAPURAM	433	26	10	0	0	0	469	422	7	5	0	0	0	434
13	THRISSUR	120	11	13	5	0	0	149	81	3	2	0	0	0	86
14	WAYANAD	117	10	0	0	0	0	127	82	3	0	0	0	0	85
	Total	1623	114	51	14	0	0	1802	2158	31	18	0	0	0	2207

TABLE 5.18: DISTRIBUTION OF IN USE TANKS/ RESERVOIRS AND OTHER STORAGE IN SURFACE FLOW SCHEME**(In Number)**

Sl. No.	District	No. of Tanks/Reservoirs & Other Storages with their IPC & IPU by CCA Class																				
		CCA Classes											CCA Classes									
		0 to 20 ha			20 to 40 ha			40 to 100 ha			100 to 500 ha			500 to 1000 ha			1000 to 2000 ha			Total		
		No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1	ALAPPUZHA	146	451.47	428.98	8	238.39	203.14	12	765.40	699.40	5	787.00	764.00	0	0.00	0.00	0	0.00	0.00	171	2242.26	2095.52
2	ERNAKULAM	215	763.46	711.16	14	455.16	454.16	1	62.00	62.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	230	1280.62	1227.32
3	IDUKKI	162	329.79	327.07	12	324.00	324.00	10	696.30	696.30	3	850.50	850.50	0	0.00	0.00	0	0.00	0.00	187	2200.59	2197.87
4	KANNUR	216	559.92	533.93	7	165.19	165.19	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	223	725.11	699.12
5	KASARGOD	151	268.77	267.03	1	20.23	20.23	1	80.00	80.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	153	369.00	367.26
6	KOLLAM	151	306.08	298.15	5	126.74	124.74	2	110.00	110.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	158	542.82	532.89
7	KOTTAYAM	39	55.80	55.56	1	24.01	20.74	4	243.96	243.96	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	44	323.77	320.26
8	KOZHIKODE	98	100.11	99.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	98	100.11	99.00
9	MALAPPURAM	452	1561.0	1446.1	23	615.81	517.34	4	255.81	182.95	1	168.00	168.00	0	0.00	0.00	0	0.00	0.00	480	2600.70	2314.42
10	PALAKKAD	677	1925.0	1903.3	10	252.50	252.50	3	270.00	250.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	690	2447.55	2405.83
11	PATHANAMTHITTA	219	468.78	392.83	4	199.00	181.00	2	124.00	105.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	225	791.78	678.83
12	THIRUVANANTHAPURAM	855	3574.0	3421.0	33	941.76	905.79	15	825.42	825.42	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	903	5341.22	5152.30
13	THRISSUR	201	675.27	655.27	14	346.15	346.15	15	867.85	867.85	5	1258.1	1258.1	0	0.00	0.00	0	0.00	0.00	235	3147.42	3127.42
14	WAYANAD	199	912.42	876.17	13	349.86	338.36	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	212	1262.28	1214.53
Total		3781	11952.	11415.	145	4058.80	3853.3	69	4300.74	4122.88	14	3063.6	3040.6	0	0.00	0.00	0	0.00	0.00	4009	23375.23	22432.57

SURFACE LIFT

TABLE 6.1: NUMBER OF SURFACE LIFT SCHEMES BY TYPE**(In Number)**

Sl. No.	District	Type of Surface Lift Schemes					
		On river	On stream	On drain/canal	On Tanks/ Ponds/ Reservoirs/check-dams	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	38	23	52	571	157	841
2	ERNAKULAM	202	141	70	1732	64	2209
3	IDUKKI	18	61	3	2173	29	2284
4	KANNUR	51	49	8	1930	20	2058
5	KASARGOD	97	59	11	2113	30	2310
6	KOLLAM	25	61	90	345	77	598
7	KOTTAYAM	56	297	96	1159	292	1900
8	KOZHIKODE	76	83	28	974	22	1183
9	MALAPPURAM	269	166	31	2364	186	3016
10	PALAKKAD	77	238	31	1158	130	1634
11	PATHANAMTHITTA	65	27	15	179	58	344
12	THIRUVANANTHAPURAM	36	63	99	318	37	553
13	THRISSUR	239	96	44	1533	80	1992
14	WAYANAD	59	43	5	796	27	930
	Total	1308	1407	583	17345	1209	21852

TABLE 6.2: DISTRIBUTION OF SURFACE LIFT SCHEMES ACCORDING TO OWNERSHIP**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes owned by								
		Public					Private			
		Govt. Owned	Coop Society	Panchayat Owned	Other	Total (3 to 6)	Group of Farmers	Individual Farmer	Total (8 to 9)	Grand Total (7+ 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	28	0	31	18	77	183	581	764	841
2	ERNAKULAM	65	5	158	115	343	103	1763	1866	2209
3	IDUKKI	109	9	73	39	230	63	1991	2054	2284
4	KANNUR	11	1	125	66	203	226	1629	1855	2058
5	KASARGOD	71	0	82	62	215	241	1854	2095	2310
6	KOLLAM	9	1	17	30	57	28	513	541	598
7	KOTTAYAM	21	4	46	32	103	115	1682	1797	1900
8	KOZHIKODE	15	1	50	37	103	63	1017	1080	1183
9	MALAPPURAM	99	11	264	215	589	272	2155	2427	3016
10	PALAKKAD	48	7	167	68	290	178	1166	1344	1634
11	PATHANAMTHITTA	43	6	28	49	126	22	196	218	344
12	THIRUVANANTHAPURAM	13	6	9	18	46	84	423	507	553
13	THRISSUR	78	18	110	36	242	134	1616	1750	1992
14	WAYANAD	72	5	57	21	155	38	737	775	930
	Total	682	74	1217	806	2779	1750	17323	19073	21852

TABLE 6.3.1: DISTRIBUTION OF SURFACE LIFTS SCHEMES ACCORDING TO SOCIAL STATUS OF OWNER**(In Number)**

Sl. No.	District	No. of Surface lift Schemes owned by						Owned by other than individual farmer (incl. Public & Group of farmers)	Total (7 + 8)
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1	ALAPPUZHA	20	3	153	405	581	260	841	
2	ERNAKULAM	34	2	299	1428	1763	446	2209	
3	IDUKKI	55	18	368	1550	1991	293	2284	
4	KANNUR	23	11	750	845	1629	429	2058	
5	KASARGOD	28	55	519	1252	1854	456	2310	
6	KOLLAM	8	2	249	254	513	85	598	
7	KOTTAYAM	26	1	207	1448	1682	218	1900	
8	KOZHIKODE	16	5	515	481	1017	166	1183	
9	MALAPPURAM	36	7	1625	487	2155	861	3016	
10	PALAKKAD	44	16	553	553	1166	468	1634	
11	PATHANAMTHITTA	4	0	8	184	196	148	344	
12	THIRUVANANTHAPURAM	16	3	116	288	423	130	553	
13	THRISSUR	16	7	843	750	1616	376	1992	
14	WAYANAD	20	40	89	588	737	193	930	
	Total	346	170	6294	10513	17323	4529	21852	

TABLE 6.3.2: DISTRIBUTION OF SURFACE LIFT SCHEMES ACCORDING TO SOCIAL STATUS OF FEMALE OWNER**(In Number)**

Sl. No.	District	No. of Surface lift Schemes Owned by				
		Scheduled Caste	Scheduled Tribe	OBC	Others	Total (3 to 6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALAPPUZHA	2	1	32	80	115
2	ERNAKULAM	2	1	31	142	176
3	IDUKKI	5	3	33	102	143
4	KANNUR	2	2	195	127	326
5	KASARGOD	2	14	69	188	273
6	KOLLAM	1	0	48	38	87
7	KOTTAYAM	4	0	29	170	203
8	KOZHIKODE	2	0	91	49	142
9	MALAPPURAM	8	0	154	77	239
10	PALAKKAD	10	6	168	112	296
11	PATHANAMTHITTA	3	0	2	21	26
12	THIRUVANANTHAPURAM	4	2	24	54	84
13	THRISSUR	2	0	163	142	307
14	WAYANAD	3	8	9	54	74
Total		50	37	1048	1356	2491

TABLE 6.4: DISTRIBUTION OF SURFACE LIFT SCHEMES ACCORDING TO THE INDIVIDUAL OWNER'S HOLDING SIZE**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes by size of class of owner					
		Marginal(0-1 ha)	Small (1-2 ha)	Semi-Medium (2- 4 ha)	Medium (4-10 ha)	Big (>=10 ha)	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	501	39	22	8	11	581
2	ERNAKULAM	1159	380	155	56	13	1763
3	IDUKKI	904	549	302	145	91	1991
4	KANNUR	1184	282	119	32	12	1629
5	KASARGOD	1254	364	158	64	14	1854
6	KOLLAM	396	77	29	7	4	513
7	KOTTAYAM	1134	386	111	40	11	1682
8	KOZHIKODE	751	190	59	13	4	1017
9	MALAPPURAM	1516	415	157	54	13	2155
10	PALAKKAD	698	219	164	69	16	1166
11	PATHANAMTHITTA	168	16	9	3	0	196
12	THIRUVANANTHAPURAM	320	65	30	5	3	423
13	THRISSUR	1426	138	30	17	5	1616
14	WAYANAD	212	244	179	84	18	737
	Total	11623	3364	1524	597	215	17323

TABLE 6.5: DISTRIBUTION OF SURFACE LIFT SCHEMES AND COST OF CONSTRUCTION**(In Rs. 000)**

Sl. No.	District	Number and Cost of Construction of Surface Lift Schemes commissioned during the period/year											
		Up to 2013-14		2014-15		2015-16		2016-17		2017-18		Total	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	ALAPPUZHA	474	23133	160	6721	86	3110	82	2302	39	989	841	36254
2	ERNAKULAM	2076	42887	67	1783	23	976	21	3234	22	1282	2209	50162
3	IDUKKI	1644	165108	200	16648	149	13307	94	7655	197	16398	2284	219115
4	KANNUR	1881	67747	66	2269	47	2057	30	2295	34	1273	2058	75642
5	KASARGOD	2104	54865	98	3533	68	3126	22	1066	18	1017	2310	63607
6	KOLLAM	353	21317	94	3898	69	9568	33	860	49	1085	598	36726
7	KOTTAYAM	1312	40670	185	6954	72	3241	90	4604	241	5637	1900	61105
8	KOZHIKODE	920	46889	79	2638	72	5013	57	5634	55	8203	1183	68377
9	MALAPPURAM	2721	166394	91	3650	58	2389	83	21737	63	4957	3016	199126
10	PALAKKAD	1210	29859	273	5816	103	2022	31	513	17	568	1634	38777
11	PATHANAMTHITTA	228	42166	36	2965	20	478	26	795	34	667	344	47071
12	THIRUVANANTHAPURAM	282	10024	53	2550	68	2908	71	1715	79	2451	553	19647
13	THRISSUR	1762	48017	89	3257	23	666	17	423	101	1449	1992	53812
14	WAYANAD	519	53460	141	9728	112	7943	90	6165	68	10253	930	87548
	Total	17486	812536	1632	72407	970	56801	747	58996	1017	56229	21852	1056969

TABLE 6.6.1: DISTRIBUTION OF SURFACE LIFT SCHEMES BY COST OF MAINTENANCE IN THE REFERENCE YEAR**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes according to the annual cost of maintenance					
		Up to Rs. 1000	Rs. 1000 to 10000	Rs. 10000 to 50000	Rs. 50000 to 100000	More than Rs. 100000	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	580	223	36	2	0	841
2	ERNAKULAM	1915	265	29	0	0	2209
3	IDUKKI	2208	59	17	0	0	2284
4	KANNUR	1983	68	7	0	0	2058
5	KASARGOD	1923	342	43	2	0	2310
6	KOLLAM	444	139	9	1	5	598
7	KOTTAYAM	1755	118	27	0	0	1900
8	KOZHIKODE	1053	113	11	4	2	1183
9	MALAPPURAM	2812	179	24	0	1	3016
10	PALAKKAD	1469	155	6	2	2	1634
11	PATHANAMTHITTA	295	34	8	2	5	344
12	THIRUVANANTHAPURAM	392	129	23	8	1	553
13	THRISSUR	1747	223	21	1	0	1992
14	WAYANAD	877	44	7	1	1	930
	Total	19453	2091	268	23	17	21852

Table.6.6.2: AVERAGE COST OF CONSTRUCTION, MACHINERY , ANNUAL MAINTENANCE AND AVERAGE AMOUNT OF SUBSIDY RECEIVED FOR SURFACE LIFT SCHEMES**(Amount in thousands)**

Sl. No.	District	Average cost of construction	Average cost of Machinery	Average cost of annual maintenance during 2017-18	Subsidy for Construction		Subsidy for Machinery	
					No. of Surfacerlift for which subsidy was received	Average amount of subsidy	No. of Surfacerlift for which subsidy was received	Average amount of subsidy for machinery
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	43	15	2	52	13	50	9
2	ERNAKULAM	23	11	1	29	17	75	4
3	IDUKKI	96	27	0	88	238	51	13
4	KANNUR	37	13	0	71	23	99	7
5	KASARGOD	28	18	1	68	14	35	8
6	KOLLAM	61	23	14	22	9	54	9
7	KOTTAYAM	32	11	1	102	13	92	7
8	KOZHIKODE	58	14	1	22	80	79	7
9	MALAPPURAM	66	13	0	74	48	127	4
10	PALAKKAD	24	10	2	6	6	72	4
11	PATHANAMTHITTA	137	38	18	30	27	90	14
12	THIRUVANANTHAPURAM	36	14	4	101	21	107	6
13	THRISSUR	27	10	1	15	14	12	8
14	WAYANAD	94	31	1	129	53	30	18
	Total	48	16	2	809	51	973	8

TABLE 6.7: DISTRIBUTION OF SURFACE LIFT SCHEMES UNDER INDIVIDUAL OWNERSHIP ACCORDING TO MAJOR SOURCE OF FINANCE**(In Number)**

Sl. No.	District	With Single Source of Finance						With Two Sources of Finance								Grand Total (8+16)
		Bank Loan	Govt. Fund	Own Saving	Money Lender	Others	Total (3 to 7)	Own Saving & Bank Loan	Own Saving & Govt. Fund	Own Saving & Money Lender	Bank Loan & Govt. Fund	Bank Loan & Money Lender	Govt. Fund & Money Lender	Others	Total (9 to 15)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0	2	201	4	3	210	38	18	6	0	1	0	308	371	581
2	ERNAKULAM	29	12	1271	4	136	1452	45	14	4	0	0	0	248	311	1763
3	IDUKKI	10	40	1365	1	21	1437	18	65	17	2	0	0	452	554	1991
4	KANNUR	42	12	1310	0	66	1430	106	34	10	12	0	0	37	199	1629
5	KASARGOD	9	6	1490	2	59	1566	129	40	30	1	3	0	85	288	1854
6	KOLLAM	16	4	392	1	30	443	14	30	5	2	0	0	19	70	513
7	KOTTAYAM	104	5	1139	1	47	1296	56	86	3	0	2	0	239	386	1682
8	KOZHIKODE	1	6	691	0	29	727	18	60	2	2	0	0	208	290	1017
9	MALAPPURAM	23	27	1654	19	209	1932	33	49	38	6	2	0	95	223	2155
10	PALAKKAD	8	7	635	0	120	770	69	8	13	1	0	0	305	396	1166
11	PATHANAMTHITTA	6	29	82	0	5	122	1	62	1	0	0	0	10	74	196
12	THIRUVANANTHAPURAM	38	16	194	12	38	298	39	33	16	9	15	1	12	125	423
13	THRISSUR	8	3	1081	0	55	1147	19	4	0	1	0	0	445	469	1616
14	WAYANAD	21	32	357	0	7	417	17	108	3	7	0	1	184	320	737
	Total	315	201	11862	44	825	1324	602	611	148	43	23	2	2647	4076	17323

TABLE 6.8: DISTRIBUTION OF SURFACE FLOW SCHEMES BY STATUS OF UTILISATION**(In Number)**

Sl. No.	District	Schemes in use	Schemes not in use			Grand Total (3+6)	Number of Schemes meant only for re-charge of ground water		
			Temporarily	Permanently	Total (4+5)		In use	Not in use (Temp + Pmt)	Total (8+9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	ALAPPUZHA	831	9	1	10	841	1	3	4
2	ERNAKULAM	2177	16	16	32	2209	38	16	54
3	IDUKKI	2277	5	2	7	2284	11	1	12
4	KANNUR	2045	4	9	13	2058	5	0	5
5	KASARGOD	2289	18	3	21	2310	19	7	26
6	KOLLAM	590	7	1	8	598	4	0	4
7	KOTTAYAM	1895	3	2	5	1900	2	0	2
8	KOZHIKODE	1180	3	0	3	1183	3	0	3
9	MALAPPURAM	2963	48	5	53	3016	4	3	7
10	PALAKKAD	1573	41	20	61	1634	21	2	23
11	PATHANAMTHITTA	340	2	2	4	344	2	0	2
12	THIRUVANANTHAPURAM	546	7	0	7	553	2	0	2
13	THRISSUR	1988	1	3	4	1992	19	1	20
14	WAYANAD	919	11	0	11	930	7	2	9
	Total	21613	175	64	239	21852	138	35	173

TABLE 6.9: DISTRIBUTION OF SURFACE LIFT SCHEMES TEMPORARILY NOT IN USE BY REASONS**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes Temporarily not in use due to								
		Non Availability of adequate Power/Fuel	Mechanical Break Down	Less discharge of Water	Non - Availability of Finance	Storage not filled up fully	Siltation of Channel/ Storage	Channel Break Down	Others	Total (3 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	0	0	2	1	0	0	6	9
2	ERNAKULAM	2	3	3	1	0	0	0	7	16
3	IDUKKI	0	0	2	1	1	0	0	1	5
4	KANNUR	0	0	0	0	0	1	0	3	4
5	KASARGOD	0	2	4	0	5	1	0	6	18
6	KOLLAM	0	0	0	0	0	0	0	7	7
7	KOTTAYAM	1	2	0	0	0	0	0	0	3
8	KOZHIKODE	0	1	0	1	0	0	0	1	3
9	MALAPPURAM	1	3	1	28	1	0	0	14	48
10	PALAKKAD	1	2	11	1	1	0	0	25	41
11	PATHANAMTHITTA	0	0	0	0	0	0	0	2	2
12	THIRUVANANTHAPURAM	0	1	2	0	1	0	0	3	7
13	THRISSUR	0	1	0	0	0	0	0	0	1
14	WAYANAD	1	3	1	0	1	1	0	4	11
	Total	6	18	24	34	11	3	0	79	175

TABLE 6.10: DISTRIBUTION OF SURFACE LIFT SCHEMES PERMANENTLY NOT IN USE BY REASONS**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes Permanently not in use due to								
		Salinity	Dried up	Destroyed beyond repair	Due to sea water intrusion	Industrial effluents	Due to Availability of Major/Medium Irrigation Project	Sinking	Other reasons	Total (3 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	0	0	1	0	0	0	0	0	1
2	ERNAKULAM	1	1	5	0	0	3	0	6	16
3	IDUKKI	0	0	0	0	0	0	0	2	2
4	KANNUR	0	1	0	0	0	0	0	8	9
5	KASARGOD	1	0	0	1	0	0	0	1	3
6	KOLLAM	0	0	0	0	0	1	0	0	1
7	KOTTAYAM	1	0	0	0	0	0	0	1	2
8	MALAPPURAM	0	0	4	1	0	0	0	0	5
9	PALAKKAD	0	2	0	1	0	0	0	17	20
10	PATHANAMTHITTA	0	1	1	0	0	0	0	0	2
11	THRISSUR	0	1	1	0	0	0	0	1	3
Total		3	6	12	3	0	4	0	36	64

TABLE 6.11: DISTRIBUTION OF IN USE SURFACE LIFT SCHEMES ACCORDING TO WATER DISTRIBUTION SYSTEM AND POTENTIAL UTILISED**(In Number/In Ha)**

Sl. No.	District	No. & PU of Surface Lift Schemes According to Water Distribution System															
		Open Water (Lined/ Pucca)		Open Water (Unlined/ Kutcha)		Underground pipe		Surface pipe		Drip		Sprinkler		Others		Total	
		No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU	No.	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	ALAPPUZHA	35	1126.51	90	1694.22	10	7.05	635	1363.80	2	0.81	4	4.95	55	22.21	831	4219.55
2	ERNAKULAM	134	2987.02	722	1980.76	111	1979.89	102	1883.80	13	17.19	30	31.72	147	987.15	2177	9867.53
3	IDUKKI	21	22.86	58	77.03	73	62.09	187	4447.44	29	42.48	62	220.73	162	352.08	2277	5224.71
4	KANNUR	24	80.65	151	193.25	98	213.33	129	1263.08	15	12.69	76	62.08	383	436.76	2045	2261.84
5	KASARGOD	36	563.70	235	176.18	33	67.98	976	1238.44	34	23.84	853	637.27	122	455.40	2289	3162.81
6	KOLLAM	38	440.37	138	110.18	20	16.33	181	126.73	19	24.39	5	9.28	189	326.92	590	1054.20
7	KOTTAYAM	38	956.37	217	1753.90	49	813.72	141	1540.31	17	12.37	36	74.40	122	74.03	1895	5225.10
8	KOZHIKODE	17	156.43	57	81.42	54	57.83	829	693.06	13	5.96	43	44.45	167	99.94	1180	1139.09
9	MALAPPURAM	100	4001.62	919	3421.58	71	356.25	160	3862.50	39	83.32	144	209.35	81	527.57	2963	12462.19
10	PALAKKAD	65	191.09	538	1221.65	63	209.45	824	1605.51	11	41.78	25	26.65	47	77.89	1573	3374.02
11	PATHANAMTHITTA	61	1623.26	48	475.82	10	4.12	148	143.18	1	0.40	0	0.00	72	86.43	340	2333.21
12	THIRUVANANTHAPURAM	82	210.93	206	531.30	29	30.06	115	112.95	3	1.44	5	7.67	106	60.68	546	955.03
13	THRISSUR	103	1215.61	595	3948.01	340	427.89	861	1439.85	12	55.40	54	57.09	23	113.99	1988	7257.84
14	WAYANAD	55	1949.61	107	586.32	16	163.45	476	1561.32	18	32.97	166	561.75	81	193.42	919	5048.84
	Total	809	15526.03	4081	16251.62	977	4409.44	122	21281.97	226	355.04	1503	1947.39	175	3814.47	2161	63585.96

TABLE 6.12: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES ACCORDING TO LIFTING DEVICES**(In Number)**

Sl. No.	District	Number of schemes by lifting Device					
		Submersible Pump	Centrifugal Pump	Turbine/Jet Pump	Manual/Animal	Others	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	281	509	1	47	2	840
2	ERNAKULAM	220	1686	44	128	115	2193
3	IDUKKI	542	1440	51	153	96	2282
4	KANNUR	290	1140	38	526	55	2049
5	KASARGOD	314	1812	17	124	40	2307
6	KOLLAM	89	143	39	311	15	597
7	KOTTAYAM	206	1549	29	67	47	1898
8	KOZHIKODE	174	824	27	156	2	1183
9	MALAPPURAM	314	2293	149	185	70	3011
10	PALAKKAD	178	1250	26	121	39	1614
11	PATHANAMTHITTA	45	191	21	78	7	342
12	THIRUVANANTHAPURAM	122	173	38	158	62	553
13	THRISSUR	84	1827	23	33	22	1989
14	WAYANAD	148	594	59	122	7	930
	Total	3007	15431	562	2209	579	21788

TABLE 6.13: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES ACCORDING TO SOURCE OF ENERGY**(In Number)**

Sl. No.	District	Number of schemes by source of energy						
		Electric Pump	Diesel Pump	Wind mills	Solar pumps	Manual/Animal	Others	Total (3 to 8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	684	105	0	1	47	3	840
2	ERNAKULAM	1915	120	1	1	128	28	2193
3	IDUKKI	1718	395	0	0	153	16	2282
4	KANNUR	1281	177	0	2	526	63	2049
5	KASARGOD	1840	274	4	4	124	61	2307
6	KOLLAM	198	84	0	0	311	4	597
7	KOTTAYAM	1637	153	0	1	67	40	1898
8	KOZHIKODE	857	141	0	0	156	29	1183
9	MALAPPURAM	2215	413	2	2	185	194	3011
10	PALAKKAD	1313	159	0	1	121	20	1614
11	PATHANAMTHITTA	219	29	0	0	78	16	342
12	THIRUVANANTHAPU	214	127	0	1	158	53	553
13	THRISSUR	1863	87	1	0	33	5	1989
14	WAYANAD	442	331	2	2	122	31	930
Total		16396	2595	10	15	2209	563	21788

TABLE 6.14: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES ACCORDING TO HORSE POWER OF LIFTING DEVICE**(In Number)**

Sl. No.	District	No. of Surface Lift Scheme by horse power of lifting devices								Total (9+10)
		0-2 hp	2-4 hp	4-6 hp	6-8 hp	8-10 hp	above 10 hp	Total (3 to 8)	Schemes without horsepower	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	ALAPPUZHA	626	114	44	0	4	5	793	47	840
2	ERNAKULAM	1264	387	333	18	24	39	2065	128	2193
3	IDUKKI	1465	106	269	134	150	5	2129	153	2282
4	KANNUR	1294	127	90	6	4	2	1523	526	2049
5	KASARGOD	1465	409	260	25	24	0	2183	124	2307
6	KOLLAM	252	4	21	0	8	1	286	311	597
7	KOTTAYAM	1569	90	135	10	26	1	1831	67	1898
8	KOZHIKODE	847	40	134	2	4	0	1027	156	1183
9	MALAPPURAM	2094	347	269	17	46	53	2826	185	3011
10	PALAKKAD	701	195	467	98	21	11	1493	121	1614
11	PATHANAMTHITTA	193	10	19	0	10	32	264	78	342
12	THIRUVANANTHAPURAM	344	33	14	2	2	0	395	158	553
13	THRISSUR	754	414	708	17	57	6	1956	33	1989
14	WAYANAD	389	37	227	34	97	24	808	122	930
	Total	13257	2313	2990	363	477	179	19579	2209	21788

TABLE 6.15: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES ACCORDING TO TOTAL HOURS OF PUMPING OPERATION**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (3 to 8)	<200 hrs	200-400 hrs	400-600 hrs	600-800 hrs	800-1000 hrs	>=1000 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	719	49	12	2	2	9	793	651	90	24	10	10	8	793
2	ERNAKULAM	1962	73	15	11	2	2	2065	1757	175	74	31	14	14	2065
3	IDUKKI	2122	5	1	0	0	1	2129	2099	20	9	1	0	0	2129
4	KANNUR	1514	8	0	0	0	1	1523	1480	38	2	2	0	1	1523
5	KASARGOD	2055	117	6	3	0	2	2183	2110	60	11	1	0	1	2183
6	KOLLAM	285	1	0	0	0	0	286	278	6	0	0	1	1	286
7	KOTTAYAM	1793	16	10	11	1	0	1831	1689	74	24	10	16	18	1831
8	KOZHIKODE	1007	16	3	0	1	0	1027	1002	18	6	0	1	0	1027
9	MALAPPURAM	2663	80	65	13	5	0	2826	2584	131	54	24	21	12	2826
10	PALAKKAD	1336	74	54	26	3	0	1493	1191	182	45	38	21	16	1493
11	PATHANAMTHITTA	233	13	4	11	3	0	264	189	30	22	15	7	1	264
12	THIRUVANANTHAPURAM	374	16	4	0	0	1	395	381	12	1	1	0	0	395
13	THRISSUR	1863	46	18	10	1	18	1956	1869	53	23	6	2	3	1956
14	WAYANAD	721	75	8	2	2	0	808	584	53	130	31	10	0	808
	Total	18647	589	200	89	20	34	19579	1786	942	425	170	103	75	1957

TABLE 6.16: DISTRIBUTION OF IN USE, TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES ACCORDING TO AVERAGE HOURS OF PUMPING PER DAY**(In Number)**

Sl. No.	District	During Kharif Season							During Rabi Season						
		0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (3 to 8)	0-4 hrs	4-8 hrs	8-12 hrs	12-16 hrs	16-20 hrs	20-24 hrs	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	722	48	18	2	0	3	793	689	76	19	4	1	4	793
2	ERNAKULAM	1947	90	22	3	1	2	2065	1785	221	41	9	6	3	2065
3	IDUKKI	2124	4	0	0	0	1	2129	2110	19	0	0	0	0	2129
4	KANNUR	1517	3	1	0	0	2	1523	1500	22	0	0	0	1	1523
5	KASARGOD	2062	116	3	0	0	2	2183	2125	52	6	0	0	0	2183
6	KOLLAM	267	17	1	1	0	0	286	267	17	1	1	0	0	286
7	KOTTAYAM	1796	18	17	0	0	0	1831	1703	88	24	4	2	10	1831
8	KOZHIKODE	1006	21	0	0	0	0	1027	993	31	3	0	0	0	1027
9	MALAPPURAM	2656	129	37	3	1	0	2826	2576	183	55	8	1	3	2826
10	PALAKKAD	1259	111	119	2	1	1	1493	1196	171	102	9	4	11	1493
11	PATHANAMTHITTA	231	20	12	0	0	1	264	200	38	24	1	0	1	264
12	THIRUVANANTHAPURAM	364	29	1	0	0	1	395	380	10	5	0	0	0	395
13	THRISSUR	1884	48	9	14	0	1	1956	1878	58	17	0	0	3	1956
14	WAYANAD	560	229	18	1	0	0	808	546	217	44	0	0	1	808
	Total	1839	883	258	26	3	14	19579	1794	1203	341	36	14	37	19579

TABLE 6.17: DISTRIBUTION OF SURFACE LIFT SCHEMES IN AND OUTSIDE THE COMMAND AREA OF MAJOR/MEDIUM PROJECTS**(In Number)**

Sl. No.	District	Outside command	No. of Surface Lift Schemes inside command area - by reasons					Total (3+8)
			Water not available up to the field from major/medium scheme	Water available but not adequate for irrigation	Water available but not useable for irrigation	Other reasons	Total (4 to 7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	ALAPPUZHA	804	21	13	0	3	37	841
2	ERNAKULAM	1840	138	127	52	52	369	2209
3	IDUKKI	2273	8	0	1	2	11	2284
4	KANNUR	1983	73	1	0	1	75	2058
5	KASARGOD	2192	3	111	0	4	118	2310
6	KOLLAM	585	2	10	0	1	13	598
7	KOTTAYAM	1826	64	8	1	1	74	1900
8	KOZHIKODE	1087	32	32	4	28	96	1183
9	MALAPPURAM	2978	1	3	0	34	38	3016
10	PALAKKAD	1301	16	309	0	8	333	1634
11	PATHANAMTHITTA	320	7	12	2	3	24	344
12	THIRUVANANTHAPURAM	512	18	17	0	6	41	553
13	THRISSUR	1825	86	25	0	56	167	1992
14	WAYANAD	915	2	3	0	10	15	930
	Total	20441	471	671	60	209	1411	21852

TABLE 6.18: DISTRIBUTION OF IN USE TANKS/ PONDS/ RESERVOIR OF SURFACE LIFT SCHEMES BY CCA CLASSES & THEIR /IPC & IPU**(In Number/In Ha)**

Sl. No.	District	No. of Tanks/Reservoirs & Other Storages with their IPC & IPU by CCA Class																				
		CCA Classes																				
		0 to 20 ha			20 to 40 ha			40 to 100 ha			100 to 500 ha			500 to 1000 ha			1000 to 2000 ha			Total		
		No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU	No.	IPC	IPU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1	ALAPPUZHA	552	469.15	464.03	9	243.70	238.70	6	396.00	381.00	2	326.00	306.00	0	0.00	0.00	0	0.00	0.00	569	1434.85	1389.73
2	ERNAKULAM	1647	1732.06	1676.9	17	518.20	518.20	17	1018.84	982.74	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	1681	3269.10	3177.86
3	IDUKKI	2137	3928.44	3911.1	21	555.95	555.95	3	163.16	163.16	2	445.15	445.15	0	0.00	0.00	0	0.00	0.00	2163	5092.70	5075.40
4	KANNUR	1909	1557.75	1452.7	16	458.27	429.63	1	55.00	55.00	1	149.00	149.00	0	0.00	0.00	0	0.00	0.00	1927	2220.02	2086.33
5	KASARGOD	2074	2112.85	2018.1	9	265.23	265.23	4	294.34	293.93	1	147.35	147.35	0	0.00	0.00	0	0.00	0.00	2088	2819.77	2724.70
6	KOLLAM	344	272.27	261.76	1	25.00	25.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	345	297.27	286.76
7	KOTTAYAM	1148	1034.13	1030.3	4	131.62	131.62	6	605.64	605.64	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	1158	1771.39	1767.59
8	KOZHIKODE	971	789.67	769.26	0	0.00	0.00	1	60.00	60.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	972	849.67	829.26
9	MALAPPURAM	2315	3375.59	3231.4	27	825.11	794.91	15	1036.35	991.45	1	153.79	61.18	1	737.00	737.00	0	0.00	0.00	2359	6127.84	5816.00
10	PALAKKAD	1140	1863.42	1801.1	7	269.22	264.03	5	359.10	358.10	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	1152	2491.74	2423.24
11	PATHANAMTHITTA	176	225.94	197.74	1	25.24	25.24	1	88.95	88.95	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	178	340.13	311.93
12	THIRUVANANTHAPURAM	317	427.18	397.47	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	317	427.18	397.47
13	THRISSUR	1472	1102.98	1092.2	34	980.59	980.59	12	702.59	702.59	0	0.00	0.00	1	987.00	987.00	0	0.00	0.00	1519	3773.16	3762.45
14	WAYANAD	771	2360.36	2230.4	7	200.13	200.13	7	670.37	670.37	2	376.00	376.00	1	650.00	600.00	0	0.00	0.00	788	4256.86	4076.92
	Total	16973	21251.7	20534.	153	4498.26	4429.2	78	5450.34	5352.93	9	1597.2	1484.6	3	2374.0	2324.00	0	0.00	0.00	17216	35171.68	34125.64

TABLE 6.19.1: CCA AND SEASON WISE POTENTIAL CREATED THROUGH SURFACE LIFT SCHEMES – ALL SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	4345.93	1195.82	2299.59	334.76	523.68	4353.85
2	ERNAKULAM	10453.10	1145.60	2120.29	4944.31	2387.42	10597.62
3	IDUKKI	5243.20	69.28	91.03	4993.67	93.78	5247.76
4	KANNUR	2371.15	296.81	457.33	1339.97	319.36	2413.47
5	KASARGOD	3185.08	372.46	355.45	2368.21	229.35	3325.47
6	KOLLAM	1006.11	239.17	261.64	370.90	198.41	1070.12
7	KOTTAYAM	5176.09	2441.36	933.11	1038.01	925.85	5338.33
8	KOZHIKODE	1117.45	106.10	143.73	806.25	105.11	1161.19
9	MALAPPURAM	13075.17	2753.87	3322.68	4451.91	3130.42	13658.88
10	PALAKKAD	3150.24	834.47	1279.00	1298.61	72.89	3484.97
11	PATHANAMTHITTA	2360.75	523.18	1147.37	395.18	413.33	2479.06
12	THIRUVANANTHAPURAM	862.47	225.12	206.32	412.37	171.89	1015.70
13	THRISSUR	7306.36	1015.87	2053.08	4091.05	146.68	7306.68
14	WAYANAD	4894.91	1941.25	1133.77	1593.32	644.64	5312.98
	Total	64548.01	13160.36	15804.39	28438.52	9362.81	66766.08

TABLE 6.19.2: CCA AND SEASON WISE POTENTIAL CREATED THROUGH IN USE SURFACE LIFT SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	4338.23	1195.82	2299.19	327.46	523.68	4346.15
2	ERNAKULAM	10404.33	1139.17	2112.06	4907.20	2384.59	10543.02
3	IDUKKI	5241.30	69.25	90.80	4992.70	93.11	5245.86
4	KANNUR	2366.08	296.80	455.71	1336.70	319.19	2408.40
5	KASARGOD	3118.92	370.84	353.83	2303.67	229.15	3257.49
6	KOLLAM	1001.46	238.69	261.49	369.10	196.19	1065.47
7	KOTTAYAM	5174.05	2441.36	933.11	1036.85	924.97	5336.29
8	KOZHIKODE	1116.84	106.10	143.73	805.69	105.06	1160.58
9	MALAPPURAM	12753.73	2722.31	3278.98	4223.64	3112.51	13337.44
10	PALAKKAD	3106.90	826.57	1272.75	1269.82	72.09	3441.23
11	PATHANAMTHITTA	2326.71	523.05	1137.24	371.27	413.33	2444.89
12	THIRUVANANTHAPURAM	847.00	220.32	202.09	404.68	167.04	994.13
13	THRISSUR	7274.82	1015.87	2023.08	4090.51	145.68	7275.14
14	WAYANAD	4835.44	1902.30	1124.78	1574.68	636.36	5238.12
Total		63905.81	13068.45	15688.84	28013.97	9322.95	66094.21

TABLE 6.19.3: CCA AND SEASON WISE POTENTIAL CREATED THROUGH TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	7.70	0.00	0.40	7.30	0.00	7.70
2	ERNAKULAM	47.10	6.03	7.63	36.04	2.23	51.93
3	IDUKKI	1.78	0.00	0.20	0.91	0.67	1.78
4	KANNUR	4.04	0.00	1.61	2.43	0.00	4.04
5	KASARGOD	65.57	1.62	1.62	63.95	0.20	67.39
6	KOLLAM	4.15	0.48	0.15	1.30	2.22	4.15
7	KOTTAYAM	1.21	0.00	0.00	1.13	0.08	1.21
8	KOZHIKODE	0.61	0.00	0.00	0.56	0.05	0.61
9	MALAPPURAM	309.19	31.47	43.64	217.37	16.71	309.19
10	PALAKKAD	34.33	6.10	4.55	23.28	0.80	34.73
11	PATHANAMTHITTA	30.00	0.00	10.00	20.00	0.00	30.00
12	THIRUVANANTHAPURAM	15.47	4.80	4.23	7.69	4.85	21.57
13	THRISSUR	0.27	0.00	0.00	0.27	0.00	0.27
14	WAYANAD	59.47	38.95	8.99	18.64	8.28	74.86
	Total	580.89	89.45	83.02	400.87	36.09	609.43

TABLE 6.19.4: CCA AND SEASON WISE POTENTIAL CREATED THROUGH PERMANENTLY NOT IN USE SURFACE LIFT SCHEMES**(In Hectares)**

Sl. No.	District	Culturable Command Area	Irrigation potential created				
			Kharif	Rabi	Perennial	Other	Total (4 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0.00	0.00	0.00	0.00	0.00	0.00
2	ERNAKULAM	1.67	0.40	0.60	1.07	0.60	2.67
3	IDUKKI	0.12	0.03	0.03	0.06	0.00	0.12
4	KANNUR	1.03	0.01	0.01	0.84	0.17	1.03
5	KASARGOD	0.59	0.00	0.00	0.59	0.00	0.59
6	KOLLAM	0.50	0.00	0.00	0.50	0.00	0.50
7	KOTTAYAM	0.83	0.00	0.00	0.03	0.80	0.83
8	MALAPPURAM	12.25	0.09	0.06	10.90	1.20	12.25
9	PALAKKAD	9.01	1.80	1.70	5.51	0.00	9.01
10	PATHANAMTHITTA	4.04	0.13	0.13	3.91	0.00	4.17
11	THRISSUR	31.27	0.00	30.00	0.27	1.00	31.27
	Total	61.31	2.46	32.53	23.68	3.77	62.44

TABLE 6.20.1: SEASON WISE POTENTIAL UTILISED THROUGH SURFACE LIFT SCHEMES- ALL**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	102.82	524.76	5.11	3.89	636.58	1076.16	1668.0	328.49	517.94	3590.67	1178.98	2192.84	333.60	521.83	4227.25
2	ERNAKULAM	111.78	139.59	1040.90	36.82	1329.09	865.34	1797.8	3762.66	2162.06	8587.95	977.12	1937.48	4803.56	2198.88	9917.04
3	IDUKKI	0.00	2.02	30.98	1.16	34.16	66.53	87.78	4945.70	92.32	5192.33	66.53	89.80	4976.68	93.48	5226.49
4	KANNUR	0.10	3.60	11.97	4.98	20.65	248.68	433.09	1296.64	266.82	2245.23	248.78	436.69	1308.61	271.80	2265.88
5	KASARGOD	1.21	6.15	59.00	1.11	67.47	348.37	328.53	2271.90	213.93	3162.73	349.58	334.68	2330.90	215.04	3230.20
6	KOLLAM	5.21	5.25	5.77	5.01	21.24	229.27	254.88	362.51	190.45	1037.11	234.48	260.13	368.28	195.46	1058.35
7	KOTTAYAM	4.10	19.77	19.65	9.41	52.93	2433.59	905.24	1015.26	819.29	5173.38	2437.69	925.01	1034.91	828.70	5226.31
8	KOZHIKODE	1.99	18.17	34.63	12.15	66.94	102.14	124.66	759.20	86.76	1072.76	104.13	142.83	793.83	98.91	1139.70
9	MALAPPURAM	15.75	20.99	191.97	16.72	245.43	2324.71	3023.0	4116.64	3059.02	12523.45	2340.46	3044.07	4308.61	3075.74	12768.88
10	PALAKKAD	596.25	596.73	263.60	4.20	1460.78	224.92	670.81	989.15	63.09	1947.97	821.17	1267.54	1252.75	67.29	3408.75
11	PATHANAMTHITTA	41.81	40.82	14.20	7.89	104.72	442.38	1102.9	356.30	356.86	2258.49	484.19	1143.77	370.50	364.75	2363.21
12	THIRUVANANTHAPURAM	7.76	8.48	22.89	6.51	45.64	209.70	194.63	386.08	136.15	926.56	217.46	203.11	408.97	142.66	972.20
13	THRISSUR	228.11	288.49	140.98	4.08	661.66	787.72	1727.7	3941.53	139.44	6596.45	1015.83	2016.25	4082.51	143.52	7258.11
14	WAYANAD	0.50	11.60	13.70	7.90	33.70	1849.88	1069.3	1563.96	591.36	5074.50	1850.38	1080.90	1577.66	599.26	5108.20
	Total	1117.39	1686.42	1855.35	121.83	4780.99	11209.3	13388.	26096.02	8695.49	59389.58	12326.78	15075.10	27951.37	8817.32	64170.57

TABLE 6.20.2: SEASON WISE POTENTIAL UTILISED THROUGH IN USE SURFACE LIFT SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to 11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	102.82	524.36	5.11	3.89	636.18	1076.1	1668.	321.19	517.94	3583.37	1178.98	2192.44	326.30	521.83	4219.55
2	ERNAKULAM	110.68	138.49	1039.60	36.00	1324.77	861.22	1792.	3727.92	2161.45	8542.76	971.90	1930.66	4767.52	2197.45	9867.53
3	IDUKKI	0.00	2.02	30.98	1.16	34.16	66.53	87.58	4944.79	91.65	5190.55	66.53	89.60	4975.77	92.81	5224.71
4	KANNUR	0.10	3.60	11.97	4.98	20.65	248.68	431.4	1294.21	266.82	2241.19	248.78	435.08	1306.18	271.80	2261.84
5	KASARGOD	1.21	6.15	59.00	1.11	67.47	346.75	326.9	2207.95	213.73	3095.34	347.96	333.06	2266.95	214.84	3162.81
6	KOLLAM	5.21	5.25	5.77	5.01	21.24	228.79	254.7	361.21	188.23	1032.96	234.00	259.98	366.98	193.24	1054.20
7	KOTTAYAM	4.10	19.77	19.65	9.41	52.93	2433.5	905.2	1014.13	819.21	5172.17	2437.69	925.01	1033.78	828.62	5225.10
8	KOZHIKODE	1.99	18.17	34.63	12.15	66.94	102.14	124.6	758.64	86.71	1072.15	104.13	142.83	793.27	98.86	1139.09
9	MALAPPURAM	15.40	20.64	186.77	16.02	238.83	2293.5	2980.	3905.72	3044.01	12223.36	2308.99	3000.68	4092.49	3060.03	12462.19
10	PALAKKAD	596.25	596.73	263.60	4.20	1460.78	218.82	666.2	965.87	62.29	1913.24	815.07	1262.99	1229.47	66.49	3374.02
11	PATHANAMTHITTA	41.81	40.82	14.20	7.89	104.72	442.38	1092.	336.30	356.86	2228.49	484.19	1133.77	350.50	364.75	2333.21
12	THIRUVANANTHAPURAM	7.01	8.08	22.49	5.76	43.34	205.95	190.9	380.49	134.30	911.69	212.96	199.03	402.98	140.06	955.03
13	THRISSUR	228.11	288.49	140.98	4.08	661.66	787.72	1727.	3941.26	139.44	6596.18	1015.83	2016.25	4082.24	143.52	7257.84
14	WAYANAD	0.50	11.60	13.70	7.90	33.70	1815.0	1065.	1545.32	589.53	5015.14	1815.50	1076.89	1559.02	597.43	5048.84
	Total	1115.19	1684.1	1848.45	119.56	4767.37	11127.	13314	25705.00	8672.17	58818.59	12242.51	14998.27	27553.45	8791.73	63585.96

TABLE 6.20.3: SEASON WISE POTENTIAL UTILISED THROUGH TEMPORARILY NOT IN USE SURFACE LIFT SCHEMES**(In Hectares)**

Sl. No.	District	Area Irrigated during 2017-2018														
		Inside Command of Major/ Medium Project					Outside Command					Total				
		Kharif	Rabi	Perennial	Others	Total (3 to 6)	Kharif	Rabi	Perennial	Others	Total (8 to11)	Kharif (3+8)	Rabi (4+9)	Perennial (5+10)	Others (6+11)	Total (7+12)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	ALAPPUZHA	0.00	0.40	0.00	0.00	0.40	0.00	0.00	7.30	0.00	7.30	0.00	0.40	7.30	0.00	7.70
2	ERNAKULAM	1.10	1.10	1.30	0.82	4.32	4.12	5.72	34.74	0.61	45.19	5.22	6.82	36.04	1.43	49.51
3	IDUKKI	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.91	0.67	1.78	0.00	0.20	0.91	0.67	1.78
4	KANNUR	0.00	0.00	0.00	0.00	0.00	0.00	1.61	2.43	0.00	4.04	0.00	1.61	2.43	0.00	4.04
5	KASARGOD	0.00	0.00	0.00	0.00	0.00	1.62	1.62	63.95	0.20	67.39	1.62	1.62	63.95	0.20	67.39
6	KOLLAM	0.00	0.00	0.00	0.00	0.00	0.48	0.15	1.30	2.22	4.15	0.48	0.15	1.30	2.22	4.15
7	KOTTAYAM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.08	1.21	0.00	0.00	1.13	0.08	1.21
8	KOZHIKODE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.05	0.61	0.00	0.00	0.56	0.05	0.61
9	MALAPPURAM	0.35	0.35	5.20	0.70	6.60	31.12	43.04	210.92	15.01	300.09	31.47	43.39	216.12	15.71	306.69
10	PALAKKAD	0.00	0.00	0.00	0.00	0.00	6.10	4.55	23.28	0.80	34.73	6.10	4.55	23.28	0.80	34.73
11	PATHANAMTHITTA	0.00	0.00	0.00	0.00	0.00	0.00	10.00	20.00	0.00	30.00	0.00	10.00	20.00	0.00	30.00
12	THIRUVANANTHAPURAM	0.75	0.40	0.40	0.75	2.30	3.75	3.68	5.59	1.85	14.87	4.50	4.08	5.99	2.60	17.17
13	THRISSUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.00	0.00	0.27	0.00	0.27
14	WAYANAD	0.00	0.00	0.00	0.00	0.00	34.88	4.01	18.64	1.83	59.36	34.88	4.01	18.64	1.83	59.36
Total		2.20	2.25	6.90	2.27	13.62	82.07	74.58	391.02	23.32	570.99	84.27	76.83	397.92	25.59	584.61

TABLE 6.21: DISTRIBUTION OF IN USE SURFACE LIFT SCHEMES ACCORDING TO CONSTRAINTS IN UTILISATION OF POTENTIAL**(In Number)**

Sl. No.	District	No. of Surface Lift Schemes having Constraints in utilisation of potential									Total (5to11)
		No. of Schemes in use	No. of Schemes without constraints	Inadequate power supply	Mechanical Break Down	Less Discharge of Water	Storage not filled up fully	Siltation of Canal/ Storage	Channel Break Down	Others	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	ALAPPUZHA	831	731	2	1	5	6	1	1	84	100
2	ERNAKULAM	2177	2089	13	4	18	4	32	1	16	88
3	IDUKKI	2277	2211	6	6	27	16	0	0	11	66
4	KANNUR	2045	2013	0	1	17	0	2	1	11	32
5	KASARGOD	2289	2273	5	1	2	0	1	1	6	16
6	KOLLAM	590	561	0	20	3	0	0	0	6	29
7	KOTTAYAM	1895	1884	3	1	2	0	1	0	4	11
8	KOZHIKODE	1180	1136	13	12	5	3	0	1	10	44
9	MALAPPURAM	2963	2924	14	2	0	0	0	0	23	39
10	PALAKKAD	1573	1544	2	3	9	2	9	0	4	29
11	PATHANAMTHITTA	340	313	0	0	6	15	0	0	6	27
12	THIRUVANANTHAPURAM	546	525	2	2	13	0	0	1	3	21
13	THRISSUR	1988	1982	1	0	3	1	0	0	1	6
14	WAYANAD	919	908	1	3	4	2	0	0	1	11
	Total	21613	21094	62	56	114	49	46	6	186	519

TABLE 6.22: DISTRIBUTION OF TANKS/RESERVOIR & OTHER STORAGE OF SURFACE LIFT SCHEMES BY STORAGE SIZE**(In Number)**

Sl. No.	District	No. of Tanks/ Reservoir & Other Storages by Designed Storage					
		Not Available or Zero cubic mts	More than 0 and upto 100 cubic mts	More than 100 and upto 1000 cubic mts	More than 1000 and upto 10000 cubic mts	More than 10000 cubic mts	Total (3 to 7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	ALAPPUZHA	0	94	319	151	7	571
2	ERNAKULAM	0	707	819	178	28	1732
3	IDUKKI	0	799	1112	222	40	2173
4	KANNUR	0	865	888	166	11	1930
5	KASARGOD	0	559	1219	282	53	2113
6	KOLLAM	0	206	92	44	3	345
7	KOTTAYAM	0	399	590	146	24	1159
8	KOZHIKODE	0	207	596	132	39	974
9	MALAPPURAM	0	470	1376	449	69	2364
10	PALAKKAD	0	226	580	218	134	1158
11	PATHANAMTHITTA	0	34	99	35	11	179
12	THIRUVANANTHAPURAM	0	100	99	103	16	318
13	THRISSUR	0	166	771	530	66	1533
14	WAYANAD	0	104	502	144	46	796
	Total	0	4936	9062	2800	547	17345

TABLE 6.23: DISTRIBUTION OF TANKS/ PONDS/ RESERVOIRS OF SURFACE LIFT SCHEMES BY CCA CLASSES**(In Number)**

Sl. No.	District	No. of Public Tanks/Reservoirs & Other Storages by CCA Classes							No. of Private Tanks/Reservoirs & Other Storages by CCA Classes						
		CCA Classes							CCA Classes						
		0 to 20ha	20 to 40 ha	40 to 100 ha	100 to 500 ha	500 to 1000 ha	1000 to 2000 ha	Total (3 to 8)	0 to 20ha	20 to 40 ha	40 to 100 ha	100 to 500 ha	500 to 1000 ha	1000 to 2000 ha	Total (10 to 15)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	ALAPPUZHA	36	3	3	2	0	0	44	516	6	3	0	0	0	525
2	ERNAKULAM	168	14	12	0	0	0	194	1479	3	5	0	0	0	1487
3	IDUKKI	203	10	2	2	0	0	217	1934	11	1	0	0	0	1946
4	KANNUR	174	10	1	1	0	0	186	1735	6	0	0	0	0	1741
5	KASARGOD	166	3	3	1	0	0	173	1908	6	1	0	0	0	1915
6	KOLLAM	30	1	0	0	0	0	31	314	0	0	0	0	0	314
7	KOTTAYAM	62	2	4	0	0	0	68	1086	2	2	0	0	0	1090
8	KOZHIKODE	88	0	1	0	0	0	89	883	0	0	0	0	0	883
9	MALAPPURAM	428	11	10	1	0	0	450	1887	16	5	0	1	0	1909
10	PALAKKAD	215	4	4	0	0	0	223	925	3	1	0	0	0	929
11	PATHANAMTHITTA	80	1	1	0	0	0	82	96	0	0	0	0	0	96
12	THIRUVANANTHAPURAM	24	0	0	0	0	0	24	293	0	0	0	0	0	293
13	THRISSUR	115	20	10	0	1	0	146	1357	14	2	0	0	0	1373
14	WAYANAD	108	4	5	1	1	0	119	663	3	2	1	0	0	669
	Total	1897	83	56	8	2	0	2046	15076	70	22	1	1	0	15170

