## WATER BODIES <br> बल शक्ति मंत्रालय <br> MINISTRY OF <br> JAL SHAKTI <br> Azadi K Amrit Mahotsav  FIRST CENSUS REPORT

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

## State - wise reports

## of

# First Census of Water bodies 

## VOLUME - 2



## GOVERNMENT OF INDIA

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

## Contents

| S.No | Name of State / UT | Page No. |
| :---: | :---: | :---: |
| 1 | Andhra Pradesh | 1 |
| 2 | Arunachal Pradesh | 7 |
| 3 | Assam | 13 |
| 4 | Bihar | 19 |
| 5 | Chhattisgarh | 25 |
| 6 | Goa | 31 |
| 7 | Gujarat | 36 |
| 8 | Haryana | 41 |
| 9 | Himachal Pradesh | 47 |
| 10 | Jharkhand | 53 |
| 11 | Karnataka | 59 |
| 12 | Kerala | 65 |
| 13 | Madhya Pradesh | 71 |
| 14 | Maharashtra | 77 |
| 15 | Manipur | 83 |
| 16 | Meghalaya | 88 |
| 17 | Mizoram | 93 |
| 18 | Nagaland | 98 |
| 19 | Odisha | 103 |
| 20 | Punjab | 109 |
| 21 | Rajasthan | 115 |
| 22 | Sikkim | 121 |
| 23 | Tamil Nadu | 126 |
| 24 | Telangana | 132 |
| 25 | Tripura | 138 |
| 26 | Uttar Pradesh | 144 |
| 27 | Uttarakhand | 150 |


| S.No | Name of State / UT | Page No. |
| :--- | :--- | :---: |
| 28 | West Bengal | 155 |
| 29 | Andaman \& Nicobar Islands | 160 |
| 30 | Chandigarh | 165 |
| 31 | Delhi | 170 |
| 32 | Jammu \& Kashmir | 175 |
| 33 | Puducherry | 181 |

## ANDHRA PRADESH

A State situated in the lap of nature with numerous waterfalls, clean air, rich biodiversity and beautiful view of surrounding hillocks. The bright green shrubbery on the banks and serenity of the river adds on to the beauty of this place.

The State has an area of $1,60,205 \mathrm{~km}^{2}$. It has 13 districts with a population of 49.67 million

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, total 1,90,777 water bodies are enumerated in the State of Andhra Pradesh, out of which majority, i.e. 99.7\% $(1,90,263)$ are in rural areas and the remaining $0.3 \%$ (514) are in urban areas. Majority of the water bodies are Tanks followed by Water Conservation Schemes/percolation tanks/check dams as depicted from chart given below.


Pond in Andhra Pradesh, Chittoor district Chandramakulapalli village


- Out of water bodies, $57.2 \%(1,09,074)$ are under private ownership whereas the remaining $42.8 \%$ $(81,703)$ are under public ownership. Out of all the private owned water bodies $90.3 \%(98518)$ are in the hands of individual farmers whereas out of the public owned water bodies, $84.3 \%(68,881)$ are with State Water Resource Department/ State Irrigation. By location, 27.4\% (52376) water bodies are located in the areas under 'Drought Prone Areas Programme', $5.4 \%(10,326)$ in tribal areas and the remaining $67.1 \%(1,28,075)$ are located in flood prone area, naxal affected and other areas. Distribution of water bodies by location is shown in the chart given below.

- Out of $1,90,777$ water bodies, $78.2 \%(1,49,279)$ water bodies are in use whereas rest $21.8 \%$ $(41,498)$ are not in use on account of being dried up, siltation, destroyed beyond repair, salinity and other reasons. Out of in use water bodies, majority of them are used for Pisciculture followed by Ground Water Recharge and Irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- $\quad$ There are 26,016 natural and 1,64,761 man-made water bodies in the State of Andhra Pradesh. Out of 26016 natural water bodies, $99.3 \%(25,830)$ water bodies are located in rural areas and the remaining $0.7 \%$ (186) are located in urban areas. Out of $1,64,761$ man-made water bodies, $99.8 \%(1,64,433)$ water bodies are located in rural areas and the remaining $0.2 \%$ (328) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


Kolleru lake in Eluru district Andhra Pradesh

- Out of 1,90,777 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 1,28,322 water bodies. During reference year 2017-18, out of these 1,28,322 water bodies, $49.3 \%(63,201)$ water bodies had fully filled up storage capacity, $22.7 \%(29,143)$ water bodies had storage capacity filled upto three fourth level, $10.5 \%(13,449)$ water bodies had storage capacity filled upto half level, $5.8 \%(7,491)$ water bodies had storage capacity filled upto one fourth level whereas $11.7 \%(15,038)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these $1,28,322$ water bodies, $61.8 \%$ $(79,320)$ water bodies are found to be filled up every year, $14.2 \%(18,198)$ are usually filled up, $22.3 \%(28,633)$ are rarely filled up and $1.7 \%(2,171)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- 46,374 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $56.8 \%(26,344)$ are tanks whereas the remaining $43.2 \%(20,030)$ are ponds, lakes, reservoirs etc. Out of 'in use' water bodies, $90.5 \%(1,35,048)$ are benefitting one ( 01 ) city/town, $8.3 \%(12,333)$ water bodies are fulfilling requirements of $2-5$ cities/towns and the remaining $1.3 \%$ $(1,898)$ water bodies are benefitting more than five $(05)$ cities/towns.
- State has reported encroachment in 3,920 water bodies, out of which $51.8 \%(2,032)$ are tanks and the remaining $48.2 \%(1,888)$ are ponds, lakes, reservoirs etc. Out of 3,920 water bodies, the encroachment area can be assessed in 2,492 water bodies. Among these 2,492 water bodies, $74.6 \%(1,858)$ are assessed to have less than $25 \%$ area under encroachment, $17.5 \%(435)$ having encroachment area ranging between $25 \%$ to $75 \%$ and remaining $8.0 \%$ (199) have more than $75 \%$ encroachment area.

- Out of 1,90,777 water bodies, the information on 'water spread area' was reported in 1,37,221 water bodies. Out of these $1,37,221$ water bodies, $30.2 \%(41,510)$ of the water bodies have water spread area less than 0.5 hectares, $19.0 \%(26,026)$ have water spread area between 0.5 to 1.0 hectares, whereas $1.3 \%(1,751)$ water bodies have water spread area more than 50 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below.

- In terms of storage capacity, $23.0 \%(43,977)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $25.6 \%(48,813)$ water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Andhra Pradesh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,90,777 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,90,263 | 99.73 |
|  | Total Number of Water Bodies in Urban Areas | no. | 514 | 0.27 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 14,132 | 7.41 |
|  | Tanks |  | 1,13,425 | 59.45 |
|  | Lakes |  | 62 | 0.03 |
|  | Reservoirs |  | 703 | 0.37 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 57,492 | 30.14 |
|  | Others |  | 4,963 | 2.60 |
| b | Water Bodies with Private Ownership | no. | 1,09,074 | 57.17 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 52,376 | 27.45 |
|  | Tribal |  | 10,326 | 5.41 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 5,770 | 3.02 |
|  | Naxal affected area |  | 110 | 0.06 |
|  | Others |  | 1,22,195 | 64.05 |
|  | Total |  | 1,90,777 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 37,257 | 24.96 |
|  | Industrial |  | 680 | 0.46 |
|  | Pisciculture |  | 69,510 | 46.56 |
|  | Domestic/ Drinking |  | 1,945 | 1.30 |
|  | Recreation |  | 35 | 0.02 |
|  | Religious |  | 106 | 0.07 |
|  | Ground Water recharge |  | 38,460 | 25.76 |
|  | Others |  | 1,286 | 0.86 |
|  | Total |  | 1,49,279 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 26,016 | 13.64 |
|  | Man Made |  | 16,4761 | 86.36 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 1,889 | 4.55 |
|  | Construction |  | 74 | 0.18 |
|  | Siltation |  | 7 | 0.02 |
|  | Destroyed beyond repair |  | 243 | 0.59 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 65 | 0.16 |
|  | Due to industrial effluents |  | 10 | 0.02 |
|  | Others |  | 39,210 | 94.49 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 79,320 | 61.81 |
|  | Usually filled up |  | 18,198 | 14.18 |
|  | Rarely filled up |  | 28,633 | 22.31 |
|  | Never filled up |  | 2,171 | 1.69 |
|  | Total |  | 1,28,322 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,35,048 | 90.47 |
|  | 2 to 5 |  | 12,333 | 8.26 |
|  | 6 to 10 |  | 562 | 0.38 |
|  | 11 to 20 |  | 723 | 0.48 |
|  | 21 to 50 |  | 452 | 0.30 |
|  | 50 to 500 |  | 161 | 0.11 |
|  | Total |  | 1,49,279 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 41,510 | 30.25 |
|  | 0.5 hectares to 1.0 hectares |  | 26,026 | 18.97 |
|  | 1 hectares to 5 hectares |  | 49,876 | 36.35 |
|  | 5 hectares to 10 hectares |  | 9,270 | 6.76 |
|  | 10 hectares to 50 hectares |  | 8,788 | 6.40 |
|  | More than 50 hectares |  | 1751 | 1.28 |
|  | Total |  | 1,37,221 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 87,879 | 46.06 |
|  | 100 to 1000 |  | 10,108 | 5.30 |
|  | 1000 to 10000 |  | 43,977 | 23.05 |
|  | More than 10000 |  | 48,813 | 25.59 |
|  | Total |  | 1,90,777 | 100.00 |
| 9 | Number of encroached water bodies | No. | 3,920 | 2.05 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## ARUNACHAL PRADESH

Arunachal is the largest state area wise in the north-eastern region and it has a long international border with Bhutan to the west, China to the north and north-east and Myanmar to the east.

The population of Arunachal is $13,82,611$ according to 2011 census and it has an area of 83,743 square kilometres. It stretches from snow-capped mountains in the north to the plains of Brahmaputra valley in the south.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 993 water bodies have been enumerated, out of which $89.9 \%$ (893) are in rural areas and the remaining $10.1 \%$ (100) are in urban areas. Out of all water bodies, $74.4 \%$ (739) are privately owned whereas the remaining 25.6\% (254) are under public ownership. By location, 988 out of 993 water bodies are in tribal


A pond in new riddi village in arunachal pradesh areas.

- Majority of the water bodies are ponds followed by tanks and lakes as depicted from chart given below.

- Out of 993 water bodies, $87.1 \%$ (865) water bodies are in use and the remaining $12.9 \%$ (128) water bodies are reported not in use on account of drying up, siltation and other reasons. Out of 865 'in use' water bodies, $78.5 \%$ (679) water bodies are used for pisciculture purpose in the State.

- There are 177 natural and 816 man-made water bodies in Arunachal Pradesh. Out of 177 natural water bodies, $98.3 \%$ (174) water bodies are located in rural areas whereas $1.7 \%$ (3) in urban areas. Out of 816 man-made water bodies, $88.1 \%$ (719) water bodies are located in rural areas whereas rest $11.9 \%$ (97) in urban areas. Most of the man-made water bodies have original cost of construction up to Rs. 5 lakh.


A pond in Kakoi Village in Arunachal Pradesh

- Out of 993 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for in 966 water bodies. During reference year 2017-18, out of these 966 water bodies, $55.1 \%$ (532) water bodies had fully filled up storage capacity, $29.5 \%$ (285) water bodies had storage capacity filled up to three fourth level, $8.7 \%$ (84) water bodies had storage capacity filled upto half level, $3.1 \%$ (30) water bodies had storage capacity filled upto one fourth level whereas $3.6 \%$ (35) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 966 water bodies, $38.1 \%$ (368) water bodies are found to be filled up every year,
52.7\% (509) are usually filled up, $7.2 \%$ (70) are rarely filled up and $2 \%$ (19) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagrams given below.

- Out of 993 water bodies, 25 (2.5\%) are covered in District Irrigation Plan/State Irrigation Plan. Among these 25 water bodies, 22 are tanks. Out of 'in use' water bodies, $88.1 \%$ (762) are benefitting one ( 01 ) city/town and $10.5 \%$ ( 91 ) water bodies are fulfilling requirements of 2-5 cities/ towns.
- Out of 993 water bodies in Arunachal Pradesh, $86.3 \%$ (857) of the water bodies have water spread area less than 0.5 hectares and $12.6 \%$ (125) water bodies have water spread area between 0.5 to 5 hectares. In terms of storage capacity, out of 993 water bodies, $45.5 \%$ (452) water bodies have storage capacity between 1,000 to 10,000 Cubic Meters. Distribution of storage capacity of water bodies is given in chart given below:

- Out of 993 water bodies, none of the water bodies are reported to be encroached in Arunachal Pradesh.
- Key parameters of First Census of Water Bodies for the State of Arunachal Pradesh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 993 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 893 | 89.93 |
|  | Total Number of Water Bodies in Urban Areas | no. | 100 | 10.07 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 737 | 74.22 |
|  | Tanks |  | 131 | 13.19 |
|  | Lakes |  | 78 | 7.85 |
|  | Reservoirs |  | 20 | 2.01 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 9 | 0.91 |
|  | Others |  | 18 | 1.81 |
| b | Water Bodies with Private Ownership | no. | 739 | 74.42 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 2 | 0.20 |
|  | Tribal |  | 988 | 99.50 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 2 | 0.20 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 1 | 0.10 |
|  | Total |  | 993 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 35 | 4.05 |
|  | Industrial |  | 4 | 0.46 |
|  | Pisciculture |  | 679 | 78.50 |
|  | Domestic/ Drinking |  | 133 | 15.38 |
|  | Recreation |  | 5 | 0.58 |
|  | Religious |  | 2 | 0.23 |
|  | Ground Water recharge |  | 7 | 0.81 |
|  | Others |  | 0 | 0.00 |
|  | Total |  | 865 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 177 | 17.82 |
|  | Man Made |  | 816 | 82.18 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 12 | 9.38 |
|  | Construction |  | 2 | 1.56 |
|  | Siltation |  | 26 | 20.31 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Destroyed beyond repair |  | 0 | 0.00 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 88 | 68.75 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 368 | 38.10 |
|  | Usually filled up |  | 509 | 52.69 |
|  | Rarely filled up |  | 70 | 7.25 |
|  | Never filled up |  | 19 | 1.97 |
|  | Total |  | 966 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 762 | 88.09 |
|  | 2 to 5 |  | 91 | 10.52 |
|  | 6 to 10 |  | 9 | 1.04 |
|  | 11 to 20 |  | 3 | 0.35 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 865 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 857 | 86.30 |
|  | 0.5 hectares to 1.0 hectares |  | 76 | 7.65 |
|  | 1 hectares to 5 hectares |  | 49 | 4.93 |
|  | 5 hectares to 10 hectares |  | 7 | 0.70 |
|  | 10 hectares to 50 hectares |  | 3 | 0.30 |
|  | More than 50 hectares |  | 1 | 0.10 |
|  | Total |  | 993 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 161 | 16.21 |
|  | 100 to 1000 |  | 310 | 31.22 |
|  | 1000 to 10000 |  | 452 | 45.52 |
|  | More than 10000 |  | 70 | 7.05 |
|  | Total |  | 993 | 100.00 |
| 9 | Number of encroached water bodies | No. | 0 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

The State is adorned with beautiful lush covers of greenery, a chain of hills and rivers, mainly the Brahmaputra and the Barak. State has been the living place of various races, tribes and ethnic groups. Bihu is the essence of Assam and is celebrated across the State with a tremendous zeal and enthusiasm.

Assam has 33 districts with a total geographical area of $78,438 \mathrm{~km}^{2}$ and a population of $3,12,05,576$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,72,492 water bodies have been enumerated in the State of


A Pond in Lakhimpur District Assam, out of which $98.6 \%(1,70,112)$ are in rural areas and the remaining $1.4 \%(2,380)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 95.3 \%(1,64,411)$ are privately owned whereas the remaining 4.7\% $(8,081)$ are under public ownership. This reflects the dominance of private entities in ownership of water bodies.
 Distribution of water bodies by ownership status is shown in the charts given below. By location, $97.4 \%(1,67,955)$ water
bodies are located in flood prone areas and the remaining $2.6 \%(4,537)$ are located in tribal areas, naxal affected areas and other areas.
- Out of all water bodies, $98.2 \%(1,69,352)$ water bodies are in use whereas rest $1.8 \%(3,140)$ are not in use on account of drying up, siltation, salinity, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in pisciculture followed by domestic/ drinking purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Assam, there are 3,989 natural and 1,68,503 man-made water bodies. Out of 3,989 water bodies, $97.7 \%(3,899)$ are located in rural areas whereas remaining $2.3 \%(90)$ are located in urban areas. Out of $1,68,503$ man-made water bodies, $98.6 \%(1,66,213)$ water bodies are located in rural areas and the remaining $1.4 \%(2,290)$ are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


A Pond in Assam, Kamrup Metro district Panikhaiti village

- Out of $1,72,492$ water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 1,69,041 water bodies. During reference year 2017-18, out of these 1,69,041
water bodies, $93.7 \%(1,58,389)$ water bodies had fully filled up storage capacity, $4.1 \%(7,035)$ water bodies had storage capacity filled upto three fourth level, $2.0 \%(3,341)$ water bodies had storage capacity filled upto half level, $0.1 \%$ (152) water bodies had storage capacity filled upto one fourth level whereas $0.1 \%$ (124) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of $1,69,041$ water bodies, $81.2 \%(1,37,340)$ water bodies are found to be filled up every year, $18.4 \%(31,135)$ are usually filled up, $0.3 \%(426)$ are rarely filled up and $0.1 \%$ (140) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, $4.0 \%(6,983)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these $97.1 \%(6,779)$ are ponds and the remaining $2.9 \%(204)$ are tanks, lakes, reservoirs etc. Out of 'in use' water bodies, $82.7 \%(1,40,016)$ are benefitting one (01) city/town, 16.9\% $(28,666)$ water bodies are fulfilling requirements of $2-5$ cities/ towns and the remaining $0.4 \%$ (670) water bodies are benefitting more than five (05) cities/towns. Out of all the enumerated water bodies, State has reported encroachment in 13 water bodies which includes 12 ponds.
- Out of 1,72,492 water bodies, the information on 'water spread area' was reported in 1,72,479 water bodies. Out of these 1,72,479 water bodies, $95.9 \%(1,65,440)$ of the water bodies have water spread area less than 0.5 hectares whereas $3.4 \%(5,930)$ water bodies have water spread area between 0.5 hectares to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below:

- In terms of storage capacity, $53.1 \%(73,208)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $2.2 \%(3,875)$ have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Assam are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,72,492 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,70,112 | 98.62 |
|  | Total Number of Water Bodies in Urban Areas | no. | 2,380 | 1.38 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 1,68,520 | 97.70 |
|  | Tanks |  | 225 | 0.13 |
|  | Lakes |  | 196 | 0.11 |
|  | Reservoirs |  | 100 | 0.06 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 14 | 0.01 |
|  | Others |  | 3,437 | 1.99 |
| b | Water Bodies with Private Ownership | no. | 1,64,411 |  |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 64 | 0.04 |
|  | Tribal |  | 1,517 | 0.88 |
|  | DDP |  | 950 | 0.55 |
|  | Flood Prone |  | 1,67,955 | 97.37 |
|  | Naxal affected area |  | 125 | 0.07 |
|  | Others |  | 1,881 | 1.09 |
|  | Total |  | 1,72,492 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 532 | 0.31 |
|  | Industrial |  | 1,279 | 0.76 |
|  | Pisciculture |  | 1,52,698 | 90.17 |
|  | Domestic/ Drinking |  | 13,459 | 7.95 |
|  | Recreation |  | 64 | 0.04 |
|  | Religious |  | 93 | 0.05 |
|  | Ground Water recharge |  | 5 | 0.00 |
|  | Others |  | 1,222 | 0.72 |
|  | Total |  | 1,69,352 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 3,989 | 2.31 |
|  | Man Made |  | 1,68,503 | 97.69 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 2,472 | 78.73 |
|  | Construction |  | 21 | 0.67 |
|  | Siltation |  | 5 | 0.16 |
|  | Destroyed beyond repair |  | 18 | 0.57 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 7 | 0.22 |
|  | Due to industrial effluents |  | 6 | 0.19 |
|  | Others |  | 611 | 19.46 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 1,37,340 | 81.25 |
|  | Usually filled up |  | 31,135 | 18.42 |
|  | Rarely filled up |  | 426 | 0.25 |
|  | Never filled up |  | 140 | 0.08 |
|  | Total |  | 1,69,041 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,40,016 | 82.68 |
|  | 2 to 5 |  | 28,666 | 16.93 |
|  | 6 to 10 |  | 129 | 0.08 |
|  | 11 to 20 |  | 205 | 0.12 |
|  | 21 to 50 |  | 329 | 0.19 |
|  | 50 to 500 |  | 5 | 0.00 |
|  | More than 500 |  | 2 | 0.00 |
|  | Total |  | 1,69,352 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 1,65,440 | 95.92 |
|  | 0.5 hectares to 1.0 hectares |  | 5,930 | 3.44 |
|  | 1 hectares to 5 hectares |  | 898 | 0.52 |
|  | 5 hectares to 10 hectares |  | 185 | 0.11 |
|  | 10 hectares to 50 hectares |  | 13 | 0.01 |
|  | More than 50 hectares |  | 13 | 0.01 |
|  | Total |  | 1,72,479 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 3,939 | 2.28 |
|  | 100 to 1000 |  | 91,470 | 53.03 |
|  | 1000 to 10000 |  | 73,208 | 42.44 |
|  | More than 10000 |  | 3,875 | 2.25 |
|  | Total |  | 1,72,492 | 100.00 |
| 9 | Number of encroached water bodies | no. | 13 |  |

[^0]
## BIHAR

Bihar is a place full of history and spiritual significance. Located in the eastern part of India, this State is known as the land of monasteries. The great spiritual way of Buddhism originated and thrived in ancient Bihar, as Buddha attained his enlightenment in Bodh gaya. Therefore the region is full of remains of the monasteries known as Stupa.
The State has an area of $94,163 \mathrm{~km}^{2}$. It has 38 districts with a population of $10,40,99,452$.

## Major findings of the census

- $\quad \operatorname{In} 1^{\text {st }}$ census of water bodies, 45,793 water bodies have been enumerated in the State of Bihar, out of


A pond in Madhubani District which $95.7 \%(43,831)$ are in rural areas and the remaining $4.3 \%(1,962)$ are in urban areas. Majority of the water bodies are ponds followed by tanks and lakes as depicted from chart given below.


- $\quad 60.8 \%(27,835)$ water bodies are under public ownership whereas the remaining $39.2 \%(17,958)$ are under private ownership. Out of all the public owned water bodies, $26.9 \%(7,502)$ are with cooperatives whereas out of the privately owned water bodies, $82.9 \%(14,881)$ are in the hands of individual farmers. Distribution of water bodies by ownership status is shown in the charts given below. By location, $44.4 \%(20,328)$ water bodies are located in naxal affected area, $22.3 \%(10,216)$ in the area under 'Drought Prone Areas Programme' and the remaining 33.3\% $(15,249)$ are located in tribal, flood prone area and other areas.

- Out of 45,793 water bodies, $50.2 \%(22,994)$ water bodies are in use whereas rest $49.8 \%(22,799)$ are not in use on account of drying up, siltation, destroyed beyond repair and other reasons. Among of 'in use' water bodies, majority of them are used for Irrigation followed by Pisciculture. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 26,192 natural and 19,601 man-made water bodies in the State of Bihar. Out of 26,192 natural water bodies, $95.0 \%(24,880)$ water bodies are located in rural areas and the remaining $5.0 \%(1,312)$ are located in urban areas. Out of 19,601 man-made water bodies, $96.7 \%(18,951)$ water bodies are located in rural areas and the remaining $3.3 \%$ (650) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs. 50,000.
- Out of 45,793 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for

A pond in Bhagalpur District
 44,067 water bodies. During reference year 2017-18, out of these 44,067 water bodies, $31.5 \%(13,867)$ water bodies had fully filled up storage capacity, $40.1 \%(17,663)$ water bodies had storage capacity filled upto three fourth level, $19.4 \%(8,547)$ water bodies had storage capacity filled upto half level, $6.3 \%(2,778)$ water bodies had storage
capacity filled upto one fourth level whereas $2.7 \%(1,212)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 44,067 water bodies, $29.6 \%(13,071)$ water bodies are found to be filled up every year, $43.6 \%(19,200)$ are usually filled up, $22.9 \%(10,082)$ are rarely filled up and $3.9 \%(1,714)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

## Percentage distribution of WBs according to filled up storage



Percentage distribution of WBs by status of filling


- 3,585 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these 3,585 water bodies, $86.5 \%(3,101)$ are ponds whereas the remaining $13.5 \%(484)$ are tanks, lakes, reservoirs etc. Out of 'in use' water bodies, $18.4 \%(4,222)$ are benefitting one ( 01 ) city/town, $74.3 \%$ $(17,097)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $7.3 \%$ $(1,675)$ water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 871 water bodies out of all the enumerated water bodies. Among the 609 water bodies whose encroachment area can be assessed, 518 are assessed to have less than $25 \%$ area under encroachment, 77 having encroachment area ranging between $25 \%$ to $75 \%$ and 14 water bodies have more than $75 \%$ are a under encroachment.

- Out of 45,793 water bodies, the information on 'water spread area' was reported in 45,713 water bodies. Out of these 45,713 water bodies, $52.9 \%(24,187)$ of the water bodies have water spread area less than 0.5 hectares, $19.6 \%(8,964)$ have water spread area between 0.5 to 1.0 hectares, whereas $0.4 \%$ (200) water bodies have water spread area more than 50 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below.

- In terms of storage capacity, $36.8 \%(16,842)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $26.5 \%(12,145)$ water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Bihar are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 45,793 | 100.00 |
|  | Total Number of Water Bodies in Rural Areas | no. | 43,831 | 95.72 |
|  | Total Number of Water Bodies in Urban Areas | no. | 1,962 | 4.28 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 35,027 | 76.49 |
|  | Tanks |  | 4,221 | 9.22 |
|  | Lakes |  | 2,693 | 5.88 |
|  | Reservoirs |  | 2,126 | 4.64 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 312 | 0.68 |
|  | Others |  | 1,414 | 3.09 |
| b | Water Bodies with Private Ownership | no. | 17,958 | 39.22 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 10,216 | 22.31 |
|  | Tribal |  | 4,796 | 10.47 |
|  | DDP |  | 2,899 | 6.33 |
|  | Flood Prone |  | 3,968 | 8.67 |
|  | Naxal affected area |  | 20,328 | 44.39 |
|  | Others |  | 3,586 | 7.83 |
|  | Total |  | 45,793 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 10,488 | 45.61 |
|  | Industrial |  | 506 | 2.20 |
|  | Pisciculture |  | 8,225 | 35.77 |
|  | Domestic/ Drinking |  | 163 | 0.71 |
|  | Recreation |  | 254 | 1.10 |
|  | Religious |  | 330 | 1.44 |
|  | Ground Water recharge |  | 339 | 1.47 |
|  | Others |  | 2,690 | 11.70 |
|  | Total |  | 22,995 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 26,192 | 57.20 |
|  | Man Made |  | 19,601 | 42.80 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 3,957 | 17.36 |
|  | Construction |  | 5,830 | 25.57 |
|  | Siltation |  | 3560 | 15.61 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Destroyed beyond repair |  | 1,742 | 7.64 |
|  | Salinity |  | 489 | 2.14 |
|  | Due to industrial effluents |  | 129 | 0.57 |
|  | Others |  | 7,093 | 31.11 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 13,071 | 29.66 |
|  | Usually filled up |  | 19,200 | 43.57 |
|  | Rarely filled up |  | 10,082 | 22.88 |
|  | Never filled up |  | 1,714 | 3.89 |
|  | Total |  | 44,067 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 4,222 | 18.36 |
|  | 2 to 5 |  | 17,097 | 74.35 |
|  | 6 to 10 |  | 1,027 | 4.47 |
|  | 11 to 20 |  | 233 | 1.01 |
|  | 21 to 50 |  | 204 | 0.89 |
|  | 50 to 500 |  | 211 | 0.92 |
|  | Total |  | 22,994 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 24,187 | 52.91 |
|  | 0.5 hectares to 1.0 hectares |  | 8,964 | 19.61 |
|  | 1 hectares to 5 hectares |  | 11,026 | 24.12 |
|  | 5 hectares to 10 hectares |  | 983 | 2.15 |
|  | 10 hectares to 50 hectares |  | 353 | 0.77 |
|  | More than 50 hectares |  | 200 | 0.44 |
|  | Total |  | 45,713 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. Mtrs |  |  |
|  | 0 to 100 |  | 11,196 | 24.45 |
|  | 100 to 1000 |  | 5,610 | 12.25 |
|  | 1000 to 10000 |  | 16,842 | 36.78 |
|  | More than 10000 |  | 12,145 | 26.52 |
|  | Total |  | 45,793 | 100.00 |
| 9 | Number of encroached water bodies | No. | 871 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## CHHATTISGARH

Chhattisgarh is known for its distinctive arts and crafts that mirror simplicity and traditions of the state and its people. The state has immense possibility for wildlife and eco-tourism because of its rich bio-diversity. Chhattisgarh is blessed with some of the most endangered and rare wildlife species.

The State has an area of $1,35,191 \mathrm{~km}^{2}$ and a population of $2,55,40,196$ as per population census of 2011.

## Major findings of the census

- $\quad \ln 1^{\text {st }}$ census of water bodies, 34,000 water bodies have been enumerated in the State of Chhattisgarh, out of which majority, i.e. 98.6\%


A pond in Bilaspur District $(33,519)$ are in rural areas and the remaining $1.4 \%$ (481) are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $86.7 \%(29,463)$ water bodies are under public ownership whereas the remaining $13.3 \%(4,537)$ are under private ownership. By location, $36.3 \%(12,355)$ water bodies are in tribal areas, $40.1 \%(13,647)$ in naxal affected areas, $4.9 \%(1,677)$ in areas under 'Drought Prone Areas Programme' and the remaining $18.7 \%(6,321)$ are located in flood prone areas and other areas. Distribution of water bodies by location is shown in the chart given below.

- Out of 34,000 water bodies, $85.2 \%(28,976)$ water bodies are in use whereas rest $14.8 \%(5,024)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, 12,042 (41.6\%) are used for Pisciculture. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 9,209 natural and 2,4791 man-made water bodies in the State of Chhattisgarh. Out of 9,209 natural water bodies, $97.2 \%(8,948)$ water bodies are located in rural areas and the remaining $2.8 \%$ (261) are located in urban areas. Out of 2,4791 man-made water bodies, $99.1 \%(24,571)$ water bodies are located in rural areas and the remaining $0.9 \%$ (220) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


A pond in Kondagaon District

- Out of 34,000 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 33,546 water bodies. During reference year 2017-18, out of these 33,546 water bodies, $20.6 \%(6,902)$ water bodies had fully filled up storage capacity, $42.3 \%(14,183)$ water bodies had storage capacity filled upto three fourth level, $26.9 \%(9,035)$ water bodies had storage capacity filled upto half level, $7.0 \%(2,346)$ had storage capacity filled upto one fourth level whereas $3.2 \%$ $(1,080)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity
during last 5 years, out of these 33,546 water bodies, $21.9 \%(7,338)$ are found to be filled up every year, $65.4 \%(21,939)$ water bodies are usually filled up, $10.2 \%(3,413)$ are rarely filled up and $2.5 \%$ (856) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the charts given below.

- 293 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $82.9 \%$ (243) are ponds whereas the remaining $17.1 \%$ (50) are lakes, tanks reservoirs etc. Out of 'in use' water bodies, $95.0 \%(27,526)$ are benefitting one (01) city/town, $3.8 \%(1,108)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $1.2 \%$ (342) water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 111 water bodies, out of which $92.8 \%$ (103) are ponds and the remaining $7.2 \%$ (8) are tanks, lakes, reservoirs etc. Out of all these 111 water bodies, the encroachment area can be assessed in 21 water bodies. Among these 21 water bodies, 19 are assessed to have less than $25 \%$ area under encroachment and 2 are having encroachment area ranging between $25 \%$ to $50 \%$.
- Out of 34,000 water bodies, the information on 'water spread area' was reported in 33,591 water bodies. Out of these 33591 water bodies, $34.3 \%(11,522)$ have water spread area less than 0.5 hectares, $27.9 \%(9,363)$ have water spread area ranging between 0.5 to 1.0 hectares, whereas $0.2 \%$ (83) water bodies have water spread area more than 50 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below.

- In terms of storage capacity, $38.1 \%(12,938)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $48.9 \%(16,627)$ water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in pie chart given below.

- Key parameters of First Census of Water Bodies for the State of Chhattisgarh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 34,000 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 33,519 | 98.59 |
|  | Total Number of Water Bodies in Urban Areas | no. | 481 | 1.41 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 32,893 | 96.74 |
|  | Tanks |  | 311 | 0.91 |
|  | Lakes |  | 73 | 0.21 |
|  | Reservoirs |  | 269 | 0.79 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 237 | 0.70 |
|  | Others |  | 217 | 0.64 |
| b | Water Bodies with Private Ownership | no. | 4,537 | 13.34 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 1,677 | 4.93 |
|  | Tribal |  | 12,355 | 36.34 |
|  | DDP |  | 591 | 1.74 |
|  | Flood Prone |  | 602 | 1.77 |
|  | Naxal affected area |  | 13,647 | 40.14 |
|  | Others |  | 5,128 | 15.08 |
|  | Total |  | 34,000 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 3,139 | 10.83 |
|  | Industrial |  | 627 | 2.16 |
|  | Pisciculture |  | 12,042 | 41.56 |
|  | Domestic/ Drinking |  | 8,389 | 28.95 |
|  | Recreation |  | 376 | 1.30 |
|  | Religious |  | 293 | 1.01 |
|  | Ground Water recharge |  | 946 | 3.26 |
|  | Others |  | 3,164 | 10.92 |
|  | Total |  | 28,976 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 9,209 | 27.09 |
|  | Man Made |  | 24,791 | 72.91 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 1,297 | 25.82 |
|  | Construction |  | 546 | 10.87 |
|  | Siltation |  | 203 | 4.04 |
|  | Destroyed beyond repair |  | 90 | 1.79 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 19 | 0.38 |
|  | Due to industrial effluents |  | 140 | 2.79 |
|  | Others |  | 2,729 | 54.32 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 7,338 | 21.87 |
|  | Usually filled up |  | 21,939 | 65.40 |
|  | Rarely filled up |  | 3,413 | 10.17 |
|  | Never filled up |  | 856 | 2.55 |
|  | Total |  | 33,546 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 27,526 | 95.00 |
|  | 2 to 5 |  | 1,108 | 3.82 |
|  | 6 to 10 |  | 51 | 0.18 |
|  | 11 to 20 |  | 79 | 0.27 |
|  | 21 to 50 |  | 129 | 0.45 |
|  | 50 to 500 |  | 75 | 0.26 |
|  | More than 500 |  | 8 | 0.03 |
|  | Total |  | 28,976 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 11,522 | 34.30 |
|  | 0.5 hectares to 1.0 hectares |  | 9,363 | 27.87 |
|  | 1 hectares to 5 hectares |  | 11,379 | 33.88 |
|  | 5 hectares to 10 hectares |  | 919 | 2.74 |
|  | 10 hectares to 50 hectares |  | 325 | 0.97 |
|  | More than 50 hectares |  | 83 | 0.25 |
|  | Total |  | 33,591 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 1,858 | 5.46 |
|  | 100 to 1000 |  | 2,577 | 7.58 |
|  | 1000 to 10000 |  | 12,938 | 38.05 |
|  | More than 10000 |  | 16,627 | 48.90 |
|  | Total |  | 34,000 | 100.00 |
| 9 | Number of encroached water bodies | No. | 111 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## GOA

'Land of Islands'- Goa is one of India's smallest states located on the west coast of India about 400 km south to Mumbai. It is bounded by the states of Maharashtra on the north and Karnataka on the east and south and by the Arabian Sea on the west.

Goa has a total Geographic area of $3,702 \mathrm{~km}^{2}$. According to the 2011 census, Goa had a population of $14,58,545$ with highest per capita income.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, total 1,463 water bodies are enumerated, out of which $96.1 \%$ $(1,406)$ are in rural areas and the remaining $3.9 \%$ (57) are in urban areas. Out of total water bodies,


Maimollem Tollem lake in Mormugao town of South Goa district $58.3 \%$ (853) are privately owned whereas the remaining 41.7\% (610) are under public ownership. By location, 84 water bodies are in tribal areas and 2 water bodies are in flood prone area.

- Majority of the water bodies are Ponds followed by Water Conservation Schemes/percolation tanks/check dams and Tanks as depicted from chart given below.

- Out of 1,463 water bodies, $75.4 \%(1,103)$ water bodies are in use; $24.6 \%$ (360) water bodies are reported not in use on account of being dried up, siltation, destroyed beyond repair and other reasons. Among all the 'in use' water bodies, $51.8 \%$ (571) are ponds, $25.1 \%$ (277) are water conservation schemes/ percolation tanks/check dams and the remaining $23.1 \%$ (255) are tanks, lakes, reservoirs etc. Out of total 'in use' water bodies, $63.5 \%$ (700) water bodies are used for Irrigation purpose in the State.

- There are 720 Natural and 743 man-made water bodies in Goa. Out of 720 Natural water bodies, $96.4 \%$ (694) water bodies are located in rural areas whereas $3.6 \%$ (26) are located in urban areas. Out of 743 man-made water bodies, $95.8 \%$ (712) water bodies are located in rural areas whereas $4.2 \%$ (31) are located in urban areas. Most of the man-made water bodies have original cost of construction up to Rs.50,000.
- Out of 1,463 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 1,127 water bodies. During reference year 2017-18, out of these 1,127 water bodies, capacity of $38.3 \%$ (432)


A pond in Verla village of North Goa district water bodies had fully filled up storage, $23.8 \%$ (268) water bodies had storage capacity filled upto three fourth level, $24.0 \%$ (270) water bodies had storage capacity filled upto half level, $11.5 \%$ (130) water bodies had storage capacity filled upto one fourth level whereas $2.4 \%$ (27) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 1127 water bodies, $62.4 \%$ (703) water bodies are found to be filled up every year, $28.2 \%$ (318) are usually filled up, $8.7 \%$ (98) are rarely filled up and $0.7 \%$ (8) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.



- Out of 1,463 water bodies, $128(8.7 \%)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these 128 water bodies, $75.8 \%$ (97) are basically water conservation schemes/ percolation dams/ check dams. Out of 'in use' water bodies, $88.6 \%$ (977) are benefitting one (01) city/town and $10.9 \%$ (120) water bodies are fulfilling requirements of 2-5 cities/ towns.
- Out of 1,463 water bodies, the information on 'water spread area' was reported in 1,460 water bodies. Out of these 1,460 water bodies, $84.5 \%(1,234)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of total 1,463 water bodies, $37.8 \%$ (553) water bodies have storage capacity between 100 to 1,000 Cubic Meters. Distribution of storage capacity of water bodies is given in charts given below:


Storage Capacity (in Cu. Metres)

- Out of 1,463 water bodies, eight (08) water bodies are reported to be encroached. These are five (05) ponds followed by two (02) water conservation schemes/ percolation dams/ check dams and one (01) Tank. Among the water bodies whose encroachment area can be assessed, three (03) are assessed to have less than $25 \%$ area under encroachment, one (01) having encroachment area ranging between $25 \%$ to $75 \%$ and one (01) has more than $75 \%$ encroachment area.
- Key parameters of First Census of Water Bodies for the State of Goa are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,463 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,406 | 96.10 |
|  | Total Number of Water Bodies in Urban Areas | no. | 57 | 3.90 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 864 | 59.06 |
|  | Tanks |  | 200 | 13.67 |
|  | Lakes |  | 46 | 3.14 |
|  | Reservoirs |  | 17 | 1.16 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 308 | 21.05 |
|  | Others |  | 28 | 1.91 |
| b | Water Bodies with Private Ownership | no. | 853 | 58.30 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 0 | 0.00 |
|  | Tribal |  | 84 | 5.74 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 2 | 0.14 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 1,377 | 94.12 |
|  | Total |  | 1,463 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 700 | 63.46 |
|  | Industrial |  | 7 | 0.63 |
|  | Pisciculture |  | 61 | 5.53 |
|  | Domestic/ Drinking |  | 77 | 6.98 |
|  | Recreation |  | 24 | 2.18 |
|  | Religious |  | 120 | 10.88 |
|  | Ground Water recharge |  | 37 | 3.35 |
|  | Others |  | 77 | 6.98 |
|  | Total |  | 1,103 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 720 | 49.21 |
|  | Man Made |  | 743 | 50.79 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 61 | 16.94 |
|  | Construction |  | 1 | 0.28 |
|  | Siltation |  | 25 | 6.94 |
|  | Destroyed beyond repair |  | 14 | 3.89 |
|  | Salinity |  | 18 | 5.00 |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 241 | 66.94 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 703 | 62.38 |
|  | Usually filled up |  | 318 | 28.22 |
|  | Rarely filled up |  | 98 | 8.70 |
|  | Never filled up |  | 8 | 0.71 |
|  | Total |  | 1,127 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 977 | 88.58 |
|  | 2 to 5 |  | 120 | 10.88 |
|  | 6 to 10 |  | 2 | 0.18 |
|  | 11 to 20 |  | 3 | 0.27 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 1 | 0.09 |
|  | Total |  | 1,103 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 1,234 | 84.52 |
|  | 0.5 hectares to 1.0 hectares |  | 134 | 9.18 |
|  | 1 hectares to 5 hectares |  | 73 | 5.00 |
|  | 5 hectares to 10 hectares |  | 5 | 0.34 |
|  | 10 hectares to 50 hectares |  | 5 | 0.34 |
|  | More than 50 hectares |  | 9 | 0.62 |
|  | Total |  | 1,460 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 698 | 47.71 |
|  | 100 to 1000 |  | 553 | 37.80 |
|  | 1000 to 10000 |  | 170 | 11.62 |
|  | More than 10000 |  | 42 | 2.87 |
|  | Total |  | 1,463 | 100.00 |
| 9 | Number of encroached water bodies | No. | 8 | 0.55 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## GUJARAT

Gujarat is located on the western coast of India. It has the longest coastline of $1,600 \mathrm{Km}$. Gujarat is bounded by the Arabian Sea to the west and south west and by Pakistan in the North, Rajasthan and Madhya Pradesh towards the north east and east, Maharashtra and the Union Territories of Daman, Diu and Nagar Haveli, towards the south. Gujarat has diverse climatic conditions with mild and pleasant winters and hot and dry summers and heavy monsoon.

Gujarat has a total Geographic area of $1,96,244 \mathrm{~km}^{2}$. According to the 2011 census, Gujarat had a population of 6,04,39,692.


A Tank in village-Naransari, District-Kachchh, Gujarat

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 54,069 water bodies have been enumerated, out of which $98.3 \%$ $(53,156)$ are in rural areas and the remaining $1.7 \%$ ( 913 ) are in urban areas. Out of all water bodies, $99.8 \%(53,979)$ are under public ownership whereas the remaining $0.2 \%(90)$ are privately owned. Out of the public owned water bodies, $60.7 \%(32,781)$ are owned by Panchayat. By location, 20\% $(11,174)$ water bodies are in tribal areas.
- Majority of the water bodies are water conservation schemes/percolation tanks/check dams followed by tanks as depicted from chart given below.

- $\quad 99.7 \%(53,903)$ water bodies are in use whereas $0.3 \%(166)$ water bodies are not in use on account of drying up, siltation, destroyed beyond repair and other reasons. Out of all water bodies, $50.1 \%$ $(26,999)$ water bodies are used for irrigation purpose in the State and $43.9 \%(23,669)$ water bodies are used for pisciculture in Gujarat. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 16,966 natural and 37,103 man-made water bodies in Gujarat. Out of 16,966 Natural water bodies, $95.3 \%(16,166)$ water bodies are located in rural areas whereas $4.7 \%(800)$ are located in urban areas. Out of 37,103 man-made water bodies, $99.7 \%(36,990)$ water bodies are located in rural areas whereas $0.3 \%$ (113) are located in urban areas. Most of the man-made water bodies have original cost of construction between Rs. 1 Lakh to Rs. 5 Lakh.


A Tank in Gujarat, Narmada district Amli village

- Out of 54,069 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 28,353 water bodies. During reference year 2017-18, out of these 28,353 water bodies, $0.2 \%(63)$ water bodies have fully filled up storage capacity, $11.0 \%(3,102)$ water bodies have storage capacity filled upto three fourth level and $88.8 \%(25,180)$ water bodies have storage capacity filled upto half level. Based on the criteria of filling up of storage capacity during last 5 years, out of 28,353 water bodies, $97.5 \%(27,643)$ water bodies are found to be filled up every year and $2.5 \%$ (709) are usually filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.


- Out of 54,069 water bodies only $17(0.03 \%)$ are reported to be covered in District Irrigation Plan/State Irrigation Plan. Out of 'in use' water bodies, $99.6 \%(53,707)$ are benefitting one (01) city/town and $0.3 \%$ (182) water bodies are fulfilling requirements of 2- 5 cities/ towns and remaining 14 water bodies are benefitting more than five (05) cities/ towns.
- Out of 54,069 water bodies, the information on 'water spread area' was reported in 54,057 water bodies. Out of these 54,057 water bodies, $68.3 \%(36,923)$ of the water bodies have water spread area between 1 hectare to 5 hectares. In terms of storage capacity, out of 54,069 water bodies, $47.6 \%(25,716)$ water bodies have storage capacity between 0 to 100 Cubic Meters. Distribution of storage capacity of water bodies is given in chart given below:

- Out of 54,069 water bodies, 22 water bodies are reported to be encroached. Out of these 22 encroached water bodies, 20 are tanks.
- Key parameters of First Census of Water Bodies for the State of Gujarat are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 54,069 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 53,156 | 98.31 |
|  | Total Number of Water Bodies in Urban Areas | no. | 913 | 1.69 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 4,711 | 8.71 |
|  | Tanks |  | 22,963 | 42.47 |
|  | Lakes |  | 12 | 0.02 |
|  | Reservoirs |  | 667 | 1.23 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 25,667 | 47.47 |
|  | Others |  | 49 | 0.09 |
| b | Water Bodies with Private Ownership | no. | 90 | 0.17 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 285 | 0.53 |
|  | Tribal |  | 11,174 | 20.67 |
|  | DDP |  | 2,323 | 4.30 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 40,287 | 74.51 |
|  | Total |  | 54,069 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 26,999 | 50.09 |
|  | Industrial |  | 0 | 0.00 |
|  | Pisciculture |  | 23,669 | 43.91 |
|  | Domestic/ Drinking |  | 149 | 0.28 |
|  | Recreation |  | 152 | 0.28 |
|  | Religious |  | 20 | 0.04 |
|  | Ground Water recharge |  | 2,889 | 5.36 |
|  | Others |  | 25 | 0.05 |
|  | Total |  | 53,903 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 16,966 | 31.38 |
|  | Man Made |  | 37,103 | 68.62 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 3 | 1.81 |
|  | Construction |  | 5 | 3.01 |
|  | Siltation |  | 9 | 5.42 |
|  | Destroyed beyond repair |  | 0 | 0.00 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 149 | 89.76 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 27,643 | 97.50 |
|  | Usually filled up |  | 709 | 2.50 |
|  | Rarely filled up |  | 1 | 0.00 |
|  | Never filled up |  | 0 | 0.00 |
|  | Total |  | 28,353 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 53,707 | 99.64 |
|  | 2 to 5 |  | 182 | 0.34 |
|  | 6 to 10 |  | 5 | 0.01 |
|  | 11 to 20 |  | 5 | 0.01 |
|  | 21 to 50 |  | 4 | 0.01 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 53,903 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | на. |  |  |
|  | Less than 0.5 hectares |  | 361 | 0.67 |
|  | 0.5 hectares to 1.0 hectares |  | 15,713 | 29.07 |
|  | 1 hectares to 5 hectares |  | 36,923 | 68.30 |
|  | 5 hectares to 10 hectares |  | 817 | 1.51 |
|  | 10 hectares to 50 hectares |  | 186 | 0.34 |
|  | More than 50 hectares |  | 57 | 0.11 |
|  | Total |  | 54,057 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 25,716 | 47.56 |
|  | 100 to 1000 |  | 34 | 0.06 |
|  | 1000 to 10000 |  | 8,122 | 15.02 |
|  | More than 10000 |  | 20,197 | 37.35 |
|  | Total |  | 54,069 | 100.00 |
| 9 | Number of encroached water bodies | No. | 22 | 0.04 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## HARYANA

The name Haryana means the abode of God. It is a blend of two Sanskrit words 'Hari' which means God and 'ayana' meaning home. The State is a vivid kaleidoscope of diverse landscapes, showcasing magnificent archaeology and celebrating art and culture.

The State has an area of $44,212 \mathrm{~km}^{2}$. It has 22 districts with a population of 2,53,51,462.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 14,898 water bodies have been enumerated in the State of Haryana and all the water bodies are in rural areas. $96.5 \%$ $(14,376)$ of the water bodies are ponds as


A pond in Hissar District depicted from chart given below.


- $\quad 97.6 \%(14,543)$ are under public ownership whereas the remaining $2.4 \%(355)$ are under private ownership. Most of the public owned water bodies are Panchayat owned whereas most of the privately owned water bodies are owned by individual farmers. Percentage distribution of water bodies according to ownership is shown in the pie charts given below.

- By location, 4.3\% (638) are located in naxal affected areas, 1.3\% (200) in area under "Drought Prone Areas Programme" and the remaining 94.4\% (14,060) in tribal, flood prone and other areas.
- Out of 14,898 water bodies, $59.0 \%(8,794)$ water bodies are in use whereas rest $41.0 \%(6,104)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. $10.3 \%$ (909) of 'in use' water bodies are used for Ground Water Recharge in Haryana. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 12,304 natural and 2,594 man-made water bodies in the State of Haryana. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


A pond in Haryana, Hissar district Gandas village

- Out of 14,898 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 14,876 water bodies. During reference year 2017-18, out of these 14,876 water bodies, $36.8 \%(5,482)$ water bodies had fully filled up storage capacity, $24.6 \%(3,658)$ water bodies had storage capacity filled upto three fourth level, $17.3 \%(2,572)$ water bodies had storage capacity filled upto half level, $5.8 \%$ (861) water bodies had storage capacity filled upto one fourth level whereas $15.5 \%(2,303)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these 14,876 water bodies, $28.5 \%(4,240)$ water bodies
are found to be filled up every year, $28.7 \%(4,265)$ are usually filled up, $24.4 \%(3,630)$ are rarely filled up and $18.4 \%(2,741)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, 814 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $93.5 \%$ (761) are ponds whereas the remaining $6.5 \%$ (53) are tank, lakes, reservoirs etc. Out of 'in use' water bodies, $79.6 \%(6,998)$ are benefitting one ( 01 ) city/town, $19.9 \%(1,753)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.5 \%$ (43) water bodies are benefitting more than five (05) cities/towns.
- $\quad$ State has reported encroachment in 50 water bodies, all of which are ponds. Out of all these 50 water bodies, the encroachment area can be assessed in 47 water bodies. Among these 47 water bodies, $19.1 \%$ (9) are assessed to have less than $25 \%$ area under encroachment, $53.2 \%$ (25) having encroachment area ranging between $25 \%$ to $75 \%$ and remaining $27.7 \%$ (13) has more than $75 \%$ encroachment area.
- Out of 14,898 water bodies, the information on 'water spread area' was reported in 14,881 water bodies. Out of these 14,881 water bodies, $67.8 \%(10,094)$ of the water bodies have water spread area less than 0.5 hectares and $27.8 \%(4,133)$ have water spread area between 0.5 to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below.

- In terms of storage capacity, $56.1 \%(8,357)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $7.5 \%(1,117)$ water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below.

| \% distribution of WBs by storage capacity (in Cu. mtrs) |  |
| :---: | :---: |

- Key parameters of First Census of Water Bodies for the State of Haryana are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 14,898 | 100.00 |
|  | Total Number of Water Bodies in Rural Areas | no. | 14,898 | 100.00 |
|  | Total Number of Water Bodies in Urban Areas | no. | 0 |  |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 14,376 | 96.50 |
|  | Tanks |  | 350 | 2.35 |
|  | Lakes |  | 18 | 0.12 |
|  | Reservoirs |  | 132 | 0.89 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 6 | 0.04 |
|  | Others |  | 16 | 0.11 |
| b | Water Bodies with Private Ownership | no. | 355 | 2.38 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 200 | 1.34 |
|  | Tribal |  | 75 | 0.50 |
|  | DDP |  | 10 | 0.07 |
|  | Flood Prone |  | 92 | 0.62 |
|  | Naxal affected area |  | 638 | 4.28 |
|  | Others |  | 13,883 | 93.19 |
|  | Total |  | 14,898 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 1 | 0.01 |
|  | Industrial |  | 31 | 0.35 |
|  | Pisciculture |  | 495 | 5.63 |
|  | Domestic/ Drinking |  | 465 | 5.29 |
|  | Recreation |  | 40 | 0.45 |
|  | Religious |  | 113 | 1.28 |
|  | Ground Water recharge |  | 909 | 10.34 |
|  | Others |  | 6,740 | 76.64 |
|  | Total |  | 8,794 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 12,304 | 82.59 |
|  | Man Made |  | 2,594 | 17.41 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 180 | 2.95 |
|  | Construction |  | 17 | 0.28 |
|  | Siltation |  | 44 | 0.72 |
|  | Destroyed beyond repair |  | 38 | 0.62 |
|  | Salinity |  | 36 | 0.59 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Due to industrial effluents |  | 20 | 0.33 |
|  | Others |  | 5,769 | 94.51 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 4,240 | 28.50 |
|  | Usually filled up |  | 4,265 | 28.67 |
|  | Rarely filled up |  | 3,630 | 24.40 |
|  | Never filled up |  | 2,741 | 18.43 |
|  | Total |  | 14,876 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 6,998 | 79.58 |
|  | 2 to 5 |  | 1,753 | 19.93 |
|  | 6 to 10 |  | 20 | 0.23 |
|  | 11 to 20 |  | 9 | 0.10 |
|  | 21 to 50 |  | 5 | 0.06 |
|  | 50 to 500 |  | 9 | 0.10 |
|  | Total |  | 8,794 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 10,094 | 67.83 |
|  | 0.5 hectares to 1.0 hectares |  | 4,133 | 27.77 |
|  | 1 hectares to 5 hectares |  | 624 | 4.19 |
|  | 5 hectares to 10 hectares |  | 30 | 0.20 |
|  | 10 hectares to 50 hectares |  | 0 | 0.00 |
|  | More than 50 hectares |  | 0 | 0.00 |
|  | Total |  | 14,881 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu . Mtrs) | Cu . Mtrs |  |  |
|  | 0 to 100 |  | 2,712 | 18.21 |
|  | 100 to 1000 |  | 2,712 | 18.20 |
|  | 1000 to 10000 |  | 8,357 | 56.09 |
|  | More than 10000 |  | 1,117 | 7.50 |
|  | Total |  | 14,898 | 100.00 |
| 9 | Number of encroached water bodies | No. | 50 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## Himachal Pradesh

The State is popularly known as "Devabhoomi", the abode of the Gods. The splendid heights of the Himalayan ranges, with its great scenic beauty and aura of spiritual calm seem the natural home of the Gods. Two thousands or more temples all over the State, reiterate this fact.

The State has an area of $55,673 \mathrm{~km}^{2}$. It has 12 districts with a population of 68,64,602.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 88,017 water bodies have been enumerated in the State of Himachal Pradesh, out


A lake in Lahaul-spiti District of which majority, i.e. $99.3 \%(87,364)$ are in rural areas and the remaining $0.7 \%$ (653) in urban areas. Majority of the water bodies are tanks followed by other water bodies as depicted from chart given below.


- $\quad 55.6 \%(48,927)$ are under public ownership whereas the remaining $44.4 \%(39,090)$ are under private ownership. By location, $2.7 \%(2,339)$ water bodies are located in tribal areas whereas the remaining $97.3 \%(85,678)$ are located in the areas under 'Drought Prone Areas Programme', flood prone area, naxal affected and other areas. Distribution of water bodies by location is shown in the charts given below.

- Out of 88,017 water bodies, $86.2 \%(75,871)$ water bodies are in use whereas rest $13.8 \%(12,146)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, majority of them are used for domestic/ drinking purpose followed by irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 6,764 natural and 81,253 man-made water bodies in the State of Himachal Pradesh. Out of 6,764 natural water bodies, $98.5 \%(6,665)$ water bodies are located in rural areas and the remaining $1.5 \%$ (99) are located in urban areas. Out of 81,253 man-made water bodies, $99.3 \%(80,699)$ water bodies are located in rural areas and the remaining $0.7 \%$ (554) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 88,017 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A tank in Chamba District 60,185 water bodies. During reference year 2017-18, out of these 60,185 water bodies, $41.0 \%(24,656)$ water bodies had fully filled up storage capacity, $31.4 \%(18,875)$ water bodies had storage capacity filled upto three fourth level, $10.2 \%(6,135)$ water bodies had storage capacity filled upto half level, $4.6 \%(2,783)$ water bodies had storage capacity filled upto one fourth level whereas $12.8 \%(7,736)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these 60,185 water bodies, $21.7 \%(13,072)$ water bodies are found to be filled up every year, $53.0 \%(31,884)$ are usually filled up, $15.5 \%(9,353)$ are rarely filled up and $9.8 \%(5,876)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, 2,731 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $92.3 \%(2,521)$ are tanks whereas the remaining $7.7 \%(210)$ are ponds, lakes, reservoirs etc. Out of 'in use' water bodies, $93.2 \%(70,695)$ are benefitting one (01) city/town, $6.4 \%(4,844)$ water bodies are fulfilling requirements of 2- 5 cities/ towns and the remaining $0.4 \%$ (332) water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 42 water bodies, out of which 24 are tanks, 2 are ponds and the remaining 16 are others.
- Out of 88,017 water bodies, the information on 'water spread area' was reported in 87,352 water bodies. Out of these 87,352 water bodies, $96.9 \%(84,664)$ of the water bodies have water spread area less than 0.5 hectares, $1.7 \%(1,464)$ have water spread area between 0.5 to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below.

- In terms of storage capacity, $95.1 \%(83,677)$ water bodies have storage capacity upto 100 Cubic Meters whereas $0.2 \%$ (197) water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Himachal Pradesh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total |
| :---: | :--- | :--- | :--- | ---: |
| $\mathbf{1}$ | Total Number of Water Bodies | no. | 88,017 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 87,364 | 99.26 |
|  | Total Number of Water Bodies in Urban Areas | no. | 653 | 0.74 |
| $\mathbf{a}$ | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 3,247 | 3.69 |
|  | Tanks |  | 56,583 | 64.29 |
|  | Lakes |  | 106 | 0.12 |
|  | Reservoirs |  | 249 | 0.28 |
|  | Water Conservation Schemes/ Percolation tanks/ <br>  Check dams |  | 893 | 1.01 |
|  | Others |  | 26,939 | 30.61 |
| $\mathbf{b}$ | Water Bodies with Private Ownership | no. | 39,090 | 44.41 |
|  | Water Bodies by area |  |  |  |
|  | DPAP |  | 625 | 0,339 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 120 | 0.99 |
|  | Due to industrial effluents |  | 18 | 0.15 |
|  | Others |  | 2,703 | 22.25 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 13,072 | 21.72 |
|  | Usually filled up |  | 31,884 | 52.98 |
|  | Rarely filled up |  | 9,353 | 15.54 |
|  | Never filled up |  | 5,876 | 9.76 |
|  | Total |  | 60,185 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 70,695 | 93.18 |
|  | 2 to 5 |  | 4,844 | 6.38 |
|  | 6 to 10 |  | 194 | 0.26 |
|  | 11 to 20 |  | 103 | 0.14 |
|  | 21 to 50 |  | 25 | 0.03 |
|  | 50 to 500 |  | 8 | 0.01 |
|  | Total |  | 75,869 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | На. |  |  |
|  | Less than 0.5 hectares |  | 84,664 | 96.92 |
|  | 0.5 hectares to 1.0 hectares |  | 1,464 | 1.68 |
|  | 1 hectares to 5 hectares |  | 1,148 | 1.31 |
|  | 5 hectares to 10 hectares |  | 57 | 0.07 |
|  | 10 hectares to 50 hectares |  | 13 | 0.01 |
|  | More than 50 hectares |  | 6 | 0.01 |
|  | Total |  | 87,352 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 83,677 | 95.07 |
|  | 100 to 1000 |  | 3,340 | 3.8 |
|  | 1000 to 10000 |  | 803 | 0.91 |
|  | More than 10000 |  | 197 | 0.22 |
|  | Total |  | 88,017 | 100.00 |
| 9 | Number of encroached water bodies | No. | 42 | 0.05 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## JHARKHAND

Jharkhand ("The land of forest") is a state in eastern India, created on 15 November 2000, from what was previously the southern half of Bihar. The state shares its border with the states of Bihar to the north, Uttar Pradesh to the northwest, Chhattisgarh to the west, Odisha to the south and West Bengal to the east. It has an area of 79,710 square km . Hindi is the official language of the state. The state is known for its waterfalls, hills and holy places. Total population of Jharkhand as per 2011 census is 3,29,66,238.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,07,598 water


A Reservoire in village-Alinagar, District-Palamu, Jharkhand bodies have been enumerated, out of which $98.7 \%(1,06,176)$ are in rural areas and the remaining $1.3 \%(1,422)$ are in urban areas. $62 \%(66,659)$ are public owned whereas the remaining $38 \%(40,939)$ are under private ownership. By location, 53,574 water bodies are in tribal areas and 623 water bodies are in flood prone area.

- Majority of the water bodies are ponds followed by water conservation schemes/percolation tanks/check dams and tanks as depicted from chart given below.

- Out of $1,07,598$ water bodies, $87.9 \%(94,534)$ water bodies are in use; $12.1 \%(13,064)$ water bodies are reported not in use on account of drying up, siltation, destroyed beyond repair and other reasons. Among all the 'in use' water bodies, $82.2 \%(77,685)$ are ponds, $10.1 \%(9,533)$ are water conservation schemes/ percolation tanks/check dams and the remaining $7.7 \%(7,316)$ are tanks,
lakes, reservoirs etc. Out of 'in use' water bodies (i.e. 94,534), $72.2 \%(68,286)$ water bodies are used for irrigation purpose in the State.

- There are 19,720 natural and 87,878 man-made water bodies in Jharkhand. Out of 19,720 natural water bodies, $99 \%(19,522)$ water bodies are located in rural areas whereas $1 \%(198)$ are located in urban areas. Out of 87,878 man-made water bodies, $98.6 \%(86,654)$ water bodies are located in rural areas whereas $1.4 \%(1,224)$ are located in urban areas. Most of the man-made water bodies have original cost of construction between Rs. 1 Lakh to Rs. 5 Lakh.


A Pond in village-Jamalpur, District-Sahebganj, Jharkhand

- Out of $1,07,598$ water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 95,478 water bodies. During reference year 2017-18, out of these 95,478 water bodies, $10 \%(9,546)$ water bodies had fully filled up storage capacity, $44 \%(42,057)$ water bodies had storage capacity filled upto three fourth level, $36 \%(34,352)$ water bodies had storage capacity filled upto half level, $7.6 \%(7,253)$ water bodies had storage capacity filled upto one fourth level
whereas $2.4 \%(2,270)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 95,478 water bodies, $55.5 \%(52,997)$ water bodies are usually filled up, $28.4 \%(27,126)$ rarely filled up, $13.1 \%(12,494)$ found to be filled up every year, $3 \%$ $(2,861)$ are never filled up.
- Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below. Out of total storage capacity (i.e. 3,07,03,70,460 cubic meters) of 'in use' water bodies, maximum storage capacity ( $99.3 \%$, i.e. $3,05,00,06,787$ cubic meters) is attributed to tanks and ponds.


- $\quad 11.2 \%(12,008)$ are basically water conservation schemes/ percolation dams/ check dams. Out of 'in use' water bodies, $89.8 \%(84,898)$ are benefitting one $(01)$ city/town and $9.5 \%(8,994)$ water bodies are fulfilling requirements of 2-5 cities/ towns.
- Out of 1,07,598 water bodies, the information on 'water spread area' was reported in 1,07,327 water bodies. Out of these $1,07,327$ water bodies, $68.3 \%(73,286)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of total 1,07,598 water bodies, $57.7 \%(62,068)$ water bodies have storage capacity between 1,000 to 10,000 cubic meters and majority of these water bodies are in rural areas. Distribution of storage capacity of water bodies is given in charts given below:

- Out of $1,07,598$ water bodies, 560 water bodies are reported to be encroached. These are 472 ponds by 37 water conservation schemes/ percolation dams/ check dams, 30 tanks, 15 reservoirs, 5 lakes and 1 others. Among the water bodies whose encroachment area can be assessed, twenty two (22) are assessed to have less than $25 \%$ area under encroachment, seven (7) having encroachment area ranging between $25 \%$ to $75 \%$ and one (01) has more than $75 \%$ encroachment area.
- Key parameters of First Census of Water Bodies for the State of Jharkhand are given in the Annexure.

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,07,598 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,06,176 | 98.68 |
|  | Total Number of Water B odies in Urban Areas | no. | 1,422 | 1.32 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 87,080 | 80.93 |
|  | Tanks |  | 4,500 | 4.18 |
|  | Lakes |  | 135 | 0.13 |
|  | Reservoirs |  | 3,763 | 3.50 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 12,008 | 11.16 |
|  | Others |  | 112 | 0.10 |
| b | Water Bodies with Private Ownership | no. | 40,939 | 38.05 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 9,249 | 8.60 |
|  | Tribal |  | 53,574 | 49.79 |
|  | DDP |  | 2,040 | 1.90 |
|  | Flood Prone |  | 623 | 0.58 |
|  | Naxal affected area |  | 7,277 | 6.76 |
|  | Others |  | 34,835 | 32.38 |
|  | Total |  | 1,07,598 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 68,286 | 72.23 |
|  | Industrial |  | 1,077 | 1.14 |
|  | Pisciculture |  | 12,721 | 13.46 |
|  | Domestic/ Drinking |  | 4,000 | 4.23 |
|  | Recreation |  | 395 | 0.42 |
|  | Religious |  | 391 | 0.41 |
|  | Ground Water recharge |  | 5,036 | 5.33 |
|  | Others |  | 2,630 | 2.78 |
|  | Total |  | 94,536 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 19,720 | 18.33 |
|  | Man Made |  | 87,878 | 81.67 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 4,075 | 31.19 |
|  | Construction |  | 1,689 | 12.93 |
|  | Siltation |  | 1,731 | 13.25 |
|  | Destroyed beyond repair |  | 894 | 6.84 |
|  | Salinity |  | 147 | 1.13 |
|  | Due to industrial effluents |  | 114 | 0.87 |
|  | Others |  | 4,416 | 33.80 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 12,494 | 13.09 |
|  | Usually filled up |  | 52,997 | 55.51 |
|  | Rarely filled up |  | 27,126 | 28.41 |
|  | Never filled up |  | 2,861 | 3.00 |
|  | Total |  | 95,478 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 84,898 | 89.81 |
|  | 2 to 5 |  | 8,994 | 9.51 |
|  | 6 to 10 |  | 217 | 0.23 |
|  | 11 to 20 |  | 136 | 0.14 |
|  | 21 to 50 |  | 76 | 0.08 |
|  | 50 to 500 |  | 213 | 0.23 |
|  | Total |  | 94,534 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 73,286 | 68.28 |
|  | 0.5 hectares to 1.0 hectares |  | 20,997 | 19.56 |
|  | 1 hectares to 5 hectares |  | 11,153 | 10.39 |
|  | 5 hectares to 10 hectares |  | 1,282 | 1.19 |
|  | 10 hectares to 50 hectares |  | 415 | 0.39 |
|  | More than 50 hectares |  | 194 | 0.18 |
|  | Total |  | 1,07,327 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. Mtrs |  |  |
|  | 0 to 100 |  | 14,805 | 13.76 |
|  | 100 to 1000 |  | 18,767 | 17.44 |
|  | 1000 to 10000 |  | 62,068 | 57.69 |
|  | More than 10000 |  | 11,958 | 11.11 |
|  | Total |  | 1,07,598 | 100.00 |
| 9 | Number of encroached water bodies | No. | 560 | 0.52 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## KARNATAKA

Karnataka State is blessed with nature in abundance. It has Western Ghats with rich forest resources; plain valleys with rich and varied crop pattern; and narrow Coastal line with many harbours. It has the remains of numerous prehistoric settlements, innumerable inscriptions and monuments of rich historical and cultural heritage.

Karnataka has 30 districts with a total geographical area of $1,92,000 \mathrm{~km}^{2}$ and a population of 6,10,95,000.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 27,013 water bodies have been enumerated in the State of Karnataka, out of which $97.1 \%(26,224)$ are in rural areas and
 the remaining $2.9 \%$ (789) are in urban areas. Majority of the water bodies are tanks as depicted from chart given below.

- $\quad 93.8 \%(25,327)$ are public owned whereas the remaining $6.2 \%(1,686)$ are under private ownership. This reflects the dominance of public authorities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the charts given below. By location, $11.5 \%(3,110)$ water bodies are located in tribal areas, $9.4 \%(2,542)$ are located in areas under Drought Prone Area Programme (DPAP) and the remaining $79.1 \%(21,361)$ are located in naxal affected areas, DDP, flood prone and other areas.

- Out of all water bodies, $21.7 \%(5,874)$ water bodies are 'in use' whereas remaining $78.3 \%(21,139)$ are not in use on account of drying up, siltation, salinity, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Karnataka, there are 26,293 natural and 720 man-made water bodies. Out of 26,293 water bodies, $97 \%(25,504)$ are located in rural areas whereas remaining $3 \%$ (789) are located in urban areas. All manmade water bodies are located in rural areas. Most of the man-made water bodies have original cost of construction upto1 lakh.
- Out of 27,013 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 25,627 water bodies. During reference year 2017-18, out of these 25,627 water bodies, $14.1 \%(3,616)$ water


A tank in Mysore District bodies had fully filled up storage capacity, $28.4 \%(7,271)$ water bodies had storage capacity filled upto three fourth level, $45 \%(11,535)$ water bodies had
storage capacity filled upto half level, $6.9 \%(1,762)$ water bodies had storage capacity filled upto one fourth level whereas 5.6 \% $(1,443)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 25,627 water bodies, $15.4 \%(3,935)$ water bodies are found to be filled up every year, $65.3 \%(16,746)$ are usually filled up, $15 \%(3,841)$ are rarely filled up and $4.3 \%(1,105)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, $4.2 \%(1,133)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these $61.8 \%$ (700) are tanks and the remaining $38.2 \%$ (433) are ponds, lakes, reservoirs etc. Out of 'in use' water bodies, $23.7 \%(1,390)$ are benefitting one $(01)$ city/town, $70.1 \%(4,120)$ water bodies are fulfilling requirements of $2-5$ cities/ towns and the remaining $6.2 \%$ (364) water bodies are benefitting more than five (05) cities/towns. State has reported encroachment in 948 water bodies out of all the enumerated water bodies. $74.7 \%$ (708) encroached water bodies are tanks followed by $19.0 \%$ (180) ponds. Remaining $6.3 \%$ ( 60 ) encroached water bodies are lakes, reservoirs, water conservation schemes/ percolation tanks/ check dams and other bodies.
- Out of 27,013 water bodies, the information on 'water spread area' was reported in 26,817 water bodies. Out of these 26,817 water bodies, $42.8 \%(11,477)$ of the water bodies have water spread area less than 0.5 hectares whereas, $40.4 \%(10,845)$ water bodies have water spread area between 0.5 hectares to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in pie chart given below:

- In terms of storage capacity, $90.3 \%(24,403)$ water bodies have storage capacity between 0 to 100 cubic meters whereas $3.8 \%(1,027)$ have storage capacity more than 10000 cubic meters. Distribution of water bodies by 'storage capacity' is shown in pie chart given below:
\% distribution of WBs by storage capacity (in Cu. mtrs)

- Key parameters of First Census of Water Bodies for the State of Karnataka are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 27,013 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 26,224 | 97.08 |
|  | Total Number of Water Bodies in Urban Areas | no. | 789 | 2.92 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 6,431 | 23.81 |
|  | Tanks |  | 17,015 | 62.99 |
|  | Lakes |  | 1,892 | 7.00 |
|  | Reservoirs |  | 289 | 1.07 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 195 | 0.72 |
|  | Others |  | 1,191 | 4.41 |
| b | Water Bodies with Private Ownership | no. | 1,686 | 6.25 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 2,542 | 9.42 |
|  | Tribal |  | 3,110 | 11.52 |
|  | DDP |  | 669 | 2.48 |
|  | Flood Prone |  | 172 | 0.64 |
|  | Naxal affected area |  | 333 | 1.23 |
|  | Others |  | 20,187 | 74.71 |
|  | Total |  | 27,013 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 3,495 | 59.50 |
|  | Industrial |  | 70 | 1.19 |
|  | Pisciculture |  | 476 | 8.10 |
|  | Domestic/ Drinking |  | 320 | 5.45 |
|  | Recreation |  | 4 | 0.07 |
|  | Religious |  | 21 | 0.36 |
|  | Ground Water recharge |  | 548 | 9.33 |
|  | Others |  | 940 | 16.00 |
|  | Total |  | 5,874 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 26,293 | 97.33 |
|  | Man Made |  | 720 | 2.67 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 3,204 | 15.16 |
|  | Construction |  | 2,357 | 11.15 |
|  | Siltation |  | 1,373 | 6.50 |
|  | Destroyed beyond repair |  | 211 | 1.00 |
|  | Salinity |  | 55 | 0.26 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Due to industrial effluents |  | 96 | 0.45 |
|  | Others |  | 13,843 | 65.49 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 3,935 | 15.35 |
|  | Usually filled up |  | 16,746 | 65.35 |
|  | Rarely filled up |  | 3,841 | 14.99 |
|  | Never filled up |  | 1,105 | 4.31 |
|  | Total |  | 25,627 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,390 | 23.66 |
|  | 2 to 5 |  | 4,120 | 70.14 |
|  | 6 to 10 |  | 197 | 3.35 |
|  | 11 to 20 |  | 92 | 1.57 |
|  | 21 to 50 |  | 56 | 0.95 |
|  | 50 to 500 |  | 19 | 0.32 |
|  | more than 500 |  | 0 | 0.00 |
|  | Total |  | 5,874 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 11,477 | 42.80 |
|  | 0.5 hectares to 1.0 hectares |  | 10,845 | 40.44 |
|  | 1 hectares to 5 hectares |  | 1,397 | 5.21 |
|  | 5 hectares to 10 hectares |  | 2,536 | 9.46 |
|  | 10 hectares to 50 hectares |  | 394 | 1.47 |
|  | More than 50 hectares |  | 168 | 0.63 |
|  | Total |  | 26,817 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 24,403 | 90.33 |
|  | 100 to 1000 |  | 900 | 3.33 |
|  | 1000 to 10000 |  | 683 | 2.53 |
|  | More than 10000 |  | 1,027 | 3.80 |
|  | Total |  | 27,013 | 100.00 |
| 9 | Number of encroached water bodies | no. | 948 | 3.51 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## KERALA

A State endowed with a wide variety of flora and fauna, wildlife, beaches, mountains and backwaters. State brings a magical tryst with nature through its various hills and hill stations on the windward side of the majestic Western Ghats. Kerala is home to a number of spectacular beaches, luscious waterfalls and many wildlife sanctuaries housing exotic and rare species of flora and fauna.

The State has an area of $38,863 \mathrm{~km}^{2}$. It has 14 districts with a population of $3,34,06,061$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 55,734 water bodies


A pond in Palakkad District have been enumerated in the State of Kerala, out of which majority, i.e. $89.2 \%(49,725)$ are in rural areas and the remaining $10.8 \%(6,009)$ are in urban areas. Out of all water bodies, $70.7 \%(39,389)$ are under private ownership whereas the remaining $29.3 \%(16,345)$ are under public ownership. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 83.5 \%(46,550)$ water bodies are in use whereas rest $16.5 \%(9,184)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, majority of them are used for irrigation followed by domestic/ drinking purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 22,811 natural and 32,923 man-made water bodies in the State of Kerala. Out of 22,811 natural water bodies, $89.0 \%(20,306)$ water bodies are located in rural areas and the remaining $11.0 \%(2,505)$ are located in urban areas. Out of 32,923 man-made water bodies, $89.4 \%(29,419)$ water bodies are located in rural areas and the remaining $10.6 \%(3,504)$ are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 55,734 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A Pond in Thiruvananthapuram District 51,922 water bodies. During reference year 2017-18, out of these 51,922 water bodies, $56.7 \%(29,424)$ water bodies had fully filled up storage capacity, $33.2 \%(17,233)$ water bodies had storage capacity filled upto three fourth level, $7.3 \%(3,781)$ water bodies had storage capacity filled upto half level, $2.0 \%(1,045)$ water bodies had storage capacity filled upto one fourth level whereas $0.8 \%$ (439) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these 51,922 water bodies, 53.2\% $(27,612)$ water bodies are found to be filled up every year, $33.4 \%(17,373)$ are usually filled up, $10.5 \%(5431)$ are rarely filled up and $2.9 \%(1,506)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

## Percentage distribution of WBs by according to filled up storage



Percentage distribution of WBs by status of filling


- Out of all water bodies, 1,397 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $88.6 \%(1,238)$ are ponds whereas the remaining $11.4 \%(159)$ are tanks, lakes, reservoirs etc. Out of 'in use' water bodies, $93.4 \%(43,452)$ are benefitting one (01) city/town, $6.3 \%(2,952)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.3 \%$ (146) water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 111 water bodies, out of which $87.4 \%$ (97) are ponds and the remaining $12.6 \%$ (14) are tanks, reservoirs etc. Out of all these 111 water bodies, the encroachment area can be assessed in 47 water bodies. Among these 47 water bodies, 29 are assessed to have less than $25 \%$ area under encroachment, 11 having encroachment area ranging between $25 \%$ to $75 \%$ and remaining 7 have more than $75 \%$ area encroached.

- Out of 55,734 water bodies, the information on 'water spread area' was reported in 55,725 water bodies. Out of these 55,725 water bodies, $97.0 \%(54,054)$ of the water bodies have water spread area less than 0.5 hectares, $1.9 \%(1,077)$ have water spread area between 0.5 to 1.0 hectares, whereas $0.1 \%$ (51) water bodies have water spread area more than 50 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below.

- In terms of storage capacity, $17.1 \%(9,524)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $1.8 \%(1,010)$ water bodies have storage capacity more than 10,000
cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Kerala are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 55,734 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 49,725 | 89.22 |
|  | Total Number of Water Bodies in Urban Areas | no. | 6,009 | 10.78 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 51,007 | 91.52 |
|  | Tanks |  | 848 | 1.52 |
|  | Lakes |  | 4 | 0.01 |
|  | Reservoirs |  | 63 | 0.11 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 3,349 | 6.01 |
|  | Others |  | 463 | 0.83 |
| b | Water Bodies with Private Ownership | no. | 39,389 | 70.67 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 356 | 0.64 |
|  | Tribal |  | 1,470 | 2.64 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 1,098 | 1.97 |
|  | Naxal affected area |  | 414 | 0.74 |
|  | Others |  | 52,396 | 94.01 |
|  | Total |  | 55,734 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 20,038 | 43.05 |
|  | Industrial |  | 260 | 0.56 |
|  | Pisciculture |  | 2,663 | 5.72 |
|  | Domestic/ Drinking |  | 10,192 | 21.89 |
|  | Recreation |  | 1,295 | 2.78 |
|  | Religious |  | 3,591 | 7.71 |
|  | Ground Water recharge |  | 6,199 | 13.32 |
|  | Others |  | 2,312 | 4.97 |
|  | Total |  | 46,550 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 22,811 | 40.93 |
|  | Man Made |  | 32,923 | 59.07 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 642 | 6.99 |
|  | Construction |  | 183 | 1.99 |
|  | Siltation |  | 2,126 | 23.15 |


|  | Destroyed beyond repair |  | 1,326 | 14.44 |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 287 | 3.13 |
|  | Due to industrial effluents |  | 43 | 0.47 |
|  | Others |  | 4,577 | 49.84 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 27,612 | 53.18 |
|  | Usually filled up |  | 17,373 | 33.46 |
|  | Rarely filled up |  | 5,431 | 10.46 |
|  | Never filled up |  | 1,506 | 2.90 |
|  | Total |  | 51,922 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 43,452 | 93.34 |
|  | 2 to 5 |  | 2,952 | 6.34 |
|  | 6 to 10 |  | 29 | 0.06 |
|  | 11 to 20 |  | 71 | 0.15 |
|  | 21 to 50 |  | 26 | 0.06 |
|  | 50 to 500 |  | 17 | 0.04 |
|  | More than 500 |  | 3 | 0.01 |
|  | Total |  | 46,550 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 54,054 | 97.00 |
|  | 0.5 hectares to 1.0 hectares |  | 1,077 | 1.93 |
|  | 1 hectares to 5 hectares |  | 466 | 0.84 |
|  | 5 hectares to 10 hectares |  | 45 | 0.08 |
|  | 10 hectares to 50 hectares |  | 32 | 0.06 |
|  | More than 50 hectares |  | 51 | 0.09 |
|  | Total |  | 55,723 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. Mtrs |  |  |
|  | 0 to 100 |  | 18,774 | 33.69 |
|  | 100 to 1000 |  | 26,426 | 47.41 |
|  | 1000 to 10000 |  | 9,524 | 17.09 |
|  | More than 10000 |  | 1,010 | 1.81 |
|  | Total |  | 55,734 | 100.00 |
| 9 | Number of encroached water bodies | No. | 111 | 0.20 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

Madhya Pradesh is resplendent with the hill ranges of the Vindhyas and the Satpuras. Its natural settings beautified by hills, forests, rivers, rich heritages, exciting wild life and cultural diversity make it a land of many splendours. The landscape is made lucid by its rivers which carry their own legends and history with them. The land of Madhya Pradesh is steeped in distinctive traits of art and culture.

Madhya Pradesh has 52 districts with a total geographical area of $3,08,000 \mathrm{~km}^{2}$ and a population of 7.27 crore.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 82,643 water bodies have been enumerated in the State of Madhya


Amrit Sagar Talab in Ratlam District Pradesh, out of which $98 \%(81,012)$ are in rural areas and the remaining $2 \%(1,631)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- Out of all water bodies, $85.7 \%(70,847)$ are under public ownership whereas the remaining $14.3 \%$ $(11,796)$ are privately owned. This reflects the dominance of public authorities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the following charts.

- $\quad 45.1 \%(37,257)$ water bodies are 'in use' whereas remaining $54.9 \%(45,386)$ are "not in use" on account of being dried up, destroyed beyond repair, siltation, salinity and other reasons. Among water bodies in use, a major proportion of water bodies are used in Irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Madhya Pradesh, there are 20.7\% $(17,093)$ natural water bodies and $79.3 \%(65,550)$ manmade water bodies. Out of 17,093 natural water bodies, $97.1 \%(16,600)$ water bodies are located in rural areas and the remaining $2.9 \%$ (493) are located in urban areas. Similarly, out of 65,550 man-made water bodies, $98.3 \%$ $(64,412)$ water bodies are located in rural areas and the remaining $1.7 \%(1,138)$ are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


Yashwant Sagar in Indore District

- Out of 82,643 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 79,994 water bodies. During reference year 2017-18, out of these 79,994 water bodies, $22 \%(17,607)$ water bodies had fully filled up storage capacity, $26.4 \%(21,109)$ water bodies had storage capacity filled upto three fourth level, $18.9 \%(15,151)$ water bodies had storage capacity filled upto half level, $12.2 \%(9,744)$ water bodies had storage capacity filled upto one fourth level whereas $20.5 \%(16,383)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 79,994 water bodies, $30.7 \%(24,545)$ water bodies are found to be filled up every year, $28.7 \%(22,949)$ are usually filled up, $18.1 \%(14,455)$ are rarely filled up and $22.5 \%(18,045)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- $5.2 \%$ (4266) water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these 98.5\% (4202) are ponds and the remaining $1.5 \%$ (64) are tanks, lakes, reservoirs and water conservation schemes/percolation tanks/check dams. Out of 'in use' water bodies, $33.5 \%(12,495)$ are benefitting one city/town, $65.1 \%(24,236)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $1.4 \%$ (526) water bodies are benefitting more than five (05) cities/towns.
- $\quad$ State has reported encroachment in $2.1 \%$ (1779) water bodies out of all the enumerated water bodies. $99 \%(1,762)$ of the encroached water bodies are ponds and the remaining $1 \%(17)$ are tanks, lakes, reservoirs etc. Out of all the encroached water bodies, the area under encroachment can be assessed in $66 \%$ water bodies. The percentage distribution of water bodies according to extent of encroachment is shown in the chart given below.

- Out of 82,643 water bodies, the information on 'water spread area' was reported in 69,126 water bodies. Out of these 69,126 water bodies, $46.8 \%(32,375)$ of the water bodies have water spread area less than 0.5 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below:

- In terms of storage capacity, $48.9 \%(40,400)$ water bodies have storage capacity upto 100 cubic meters whereas $8.1 \%(6,681)$ of the water bodies have storage capacity more than 10000 cubic meters in Madhya Pradesh. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Madhya Pradesh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 82,643 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 81,012 | 98.03 |
|  | Total Number of Water Bodies in Urban Areas | no. | 1,631 | 1.97 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 79,818 | 96.58 |
|  | Tanks |  | 71 | 0.09 |
|  | Lakes |  | 30 | 0.04 |
|  | Reservoirs |  | 75 | 0.09 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 338 | 0.41 |
|  | Others |  | 2,311 | 2.80 |
| b | Water Bodies with Private Ownership | no. | 11,796 | 14.27 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 77 | 0.09 |
|  | Tribal |  | 22,395 | 27.10 |
|  | DDP |  | 6 | 0.01 |
|  | Flood Prone |  | 19 | 0.02 |
|  | Naxal affected area |  | 1,915 | 2.32 |
|  | Others |  | 58,231 | 70.46 |
|  | Total |  | 82,643 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 18,901 | 50.73 |
|  | Industrial |  | 305 | 0.82 |
|  | Pisciculture |  | 1,231 | 3.30 |
|  | Domestic/ Drinking |  | 4,272 | 11.47 |
|  | Recreation |  | 133 | 0.36 |
|  | Religious |  | 468 | 1.26 |
|  | Ground Water recharge |  | 3,807 | 10.22 |
|  | Others |  | 8,140 | 21.85 |
|  | Total |  | 37,257 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 17,093 | 20.68 |
|  | Man Made |  | 65,550 | 79.32 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 8,036 | 17.71 |
|  | Construction |  | 1,366 | 3.01 |
|  | Siltation |  | 594 | 1.31 |
|  | Destroyed beyond repair |  | 917 | 2.02 |
|  | Salinity |  | 114 | 0.25 |


|  | Due to industrial effluents |  | 168 | 0.37 |
| :---: | :---: | :---: | :---: | :---: |
|  | Others |  | 34,191 | 75.33 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 24,545 | 30.68 |
|  | Usually filled up |  | 22,949 | 28.69 |
|  | Rarely filled up |  | 14,455 | 18.07 |
|  | Never filled up |  | 18,045 | 22.56 |
|  | Total |  | 79,994 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 12,495 | 33.54 |
|  | 2 to 5 |  | 24,236 | 65.05 |
|  | 6 to 10 |  | 334 | 0.90 |
|  | 11 to 20 |  | 128 | 0.34 |
|  | 21 to 50 |  | 29 | 0.08 |
|  | 50 to 500 |  | 35 | 0.09 |
|  | more than 500 |  | 0 | 0.00 |
|  | Total |  | 37,257 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 32,375 | 46.83 |
|  | 0.5 hectares to 1.0 hectares |  | 15,388 | 22.26 |
|  | 1 hectares to 5 hectares |  | 17,551 | 25.39 |
|  | 5 hectares to 10 hectares |  | 2,642 | 3.82 |
|  | 10 hectares to 50 hectares |  | 823 | 1.19 |
|  | More than 50 hectares |  | 347 | 0.50 |
|  | Total |  | 69,126 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 40,400 | 48.89 |
|  | 100 to 1000 |  | 16,910 | 20.46 |
|  | 1000 to 10000 |  | 18,652 | 22.57 |
|  | More than 10000 |  | 6,681 | 8.08 |
|  | Total |  | 82,643 | 100.00 |

[^1]
## MAHARASHTRA

Maharashtra occupies the western and central part of the country and has a long coastline stretching nearly 720 kilometers along the Arabian Sea. The Sahyadri mountain ranges provide a physical backbone to the State on the west, while the Satpuda hills along the north and Bharnragad- Chiroli-Gaikhuri ranges on the east serve as its natural borders.

Maharashtra is the second largest State in India both in terms of population and geographical area. Total population of Maharashtra as per 2011 census is $11,23,74,333$ and the State has a total geographical area of $3,07,713 \mathrm{~km}^{2}$.


A water conservation scheme/percolation tank/check dams in Nirugudi village of Satara district

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 97,062 water bodies have been enumerated in the State of Maharashtra, out of which $99.3 \%(96,343)$ are in rural areas and the remaining $0.7 \%(719)$ are in urban areas. Majority of the water bodies are water conservation schemes as depicted from chart given below.

- $\quad 99.7 \%(96,767)$ water bodies are public owned whereas the remaining $0.3 \%(295)$ are under private ownership. This reflects the dominance of public entities in ownership of water bodies. Distribution of water bodies by type of ownership is shown in the charts given below.

- Out of all water bodies, $98.9 \%(96,033)$ water bodies are "in use" whereas rest $1.1 \%(1,029)$ are "not in use" on account of drying up, siltation, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in ground water recharge followed by domestic/ drinking and irrigation purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Maharashtra, there are 574 natural and 96,488 man-made water bodies. Out of 574 water bodies, 98.4\% (565) are located in rural areas whereas remaining $1.6 \%$ (9) are located in urban areas. Out of 96,488 manmade water bodies, $99.3 \%(95,778)$ water bodies are located in rural areas and the remaining $0.7 \%$ (710) are located in urban areas. Most of the man-made water bodies have original cost of construction between Rs. 5 to Rs. 10 Lakhs.


A water conservation scheme/percolation tank/check dams in Bandukpalli village of Gadchiroli district

- Out of 97,062 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 5,403 water bodies. During reference year 2017-18, out of these 5,403 water bodies, $33.2 \%(1,796)$ water bodies had fully filled up storage capacity, $65.3 \%(3,525)$ had storage capacity filled upto three fourth level, $0.9 \%$ (50) water bodies had storage capacity filled upto half level, $0.1 \%$ (7) water bodies had storage capacity filled upto one fourth level whereas $0.5 \%$ (25) water bodies had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 5,403 water bodies, $63.2 \%(3,414)$ water bodies are found to be filled up every year, $35.8 \%(1,935)$ are usually filled up, $0.7 \%$ (38) are rarely filled up and $0.3 \%(16)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagrams given below.

- Out of all water bodies, $60.7 \%(58,887)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these $90.8 \%(53,449)$ are water conservation schemes/percolation tanks/check dams and the remaining $9.2 \%(5,438)$ are tanks, lakes, reservoirs etc. Out of 'in use' water bodies, $82.5 \%$ $(79,238)$ are benefitting one $(01)$ city/town, $17.1 \%(16,406)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.4 \%$ (389) are benefitting more than five (05) cities/towns. State has reported encroachment in 251 water bodies, out of which 233 are water conservation schemes/percolation tanks/check dams.
- Out of 97,062 water bodies, the information on 'water spread area' was reported in 96,947 water bodies. Out of these 96,947 water bodies, Majority of the water bodies i.e. $70.5 \%(68,360)$ have water spread area between 0.5 hectares to 5.0 hectares followed by 35.2 \% $(34,134)$ water bodies have water spread area between 1 hectare to 5 hectares. Distribution of water bodies by 'water spread area' is shown in pie chart given below:

- In terms of storage capacity, $94.8 \%(92,026)$ water bodies have storage capacity between 0-100 cubic meters whereas $4 \%(3,885)$ have storage capacity between 100 to 1,000 cubic meters. Distribution of water bodies by 'storage capacity' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Maharashtra are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Num ber of Water Bodies | no. | 97,062 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 96,343 | 99.26 |
|  | Total Number of Water Bodies in Urban Areas | no. | 719 | 0.74 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 898 | 0.93 |
|  | Tanks |  | 3,797 | 3.91 |
|  | Lakes |  | 350 | 0.36 |
|  | Reservoirs |  | 358 | 0.37 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 90,023 | 92.75 |
|  | Others |  | 1,636 | 1.69 |
| b | Water Bodies with Private Ownership | no. | 295 | 0.30 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 4,728 | 4.87 |
|  | Tribal |  | 7,110 | 7.33 |
|  | DDP |  | 7 | 0.01 |
|  | Flood Prone |  | 12 | 0.01 |
|  | Naxal affected area |  | 285 | 0.29 |
|  | Others |  | 84,920 | 87.49 |
|  | Total |  | 97,062 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 7,976 | 8.31 |
|  | Industrial |  | 37 | 0.04 |
|  | Pisciculture |  | 29 | 0.03 |
|  | Domestic/ Drinking |  | 12,473 | 12.99 |
|  | Recreation |  | 78 | 0.08 |
|  | Religious |  | 59 | 0.06 |
|  | Ground Water recharge |  | 74,097 | 77.16 |
|  | Others |  | 1,284 | 1.34 |
|  | Total |  | 96,033 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 574 | 0.59 |
|  | Man Made |  | 96,488 | 99.41 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 194 | 18.82 |
|  | Construction |  | 70 | 6.79 |
|  | Siltation |  | 157 | 15.23 |
|  | Destroyed beyond repair |  | 149 | 14.45 |
|  | Salinity |  | 2 | 0.19 |
|  | Due to industrial effluents |  | 26 | 2.52 |
|  | Others |  | 433 | 42.00 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 3,414 | 63.19 |
|  | Usually filled up |  | 1,935 | 35.81 |
|  | Rarely filled up |  | 38 | 0.70 |
|  | Never filled up |  | 16 | 0.30 |
|  | Total |  | 5,403 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 79,238 | 82.51 |
|  | 2 to 5 |  | 16,406 | 17.08 |
|  | 6 to 10 |  | 216 | 0.22 |
|  | 11 to 20 |  | 150 | 0.16 |
|  | 21 to 50 |  | 15 | 0.02 |
|  | 50 to 500 |  | 8 | 0.01 |
|  | Total |  | 96,033 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 16,396 | 16.91 |
|  | 0.5 hectares to 1.0 hectares |  | 34,226 | 35.30 |
|  | 1 hectares to 5 hectares |  | 34,134 | 35.21 |
|  | 5 hectares to 10 hectares |  | 10,329 | 10.65 |
|  | 10 hectares to 50 hectares |  | 1,455 | 1.50 |
|  | More than 50 hectares |  | 407 | 0.42 |
|  | Total |  | 96,947 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 92,026 | 94.82 |
|  | 100 to 1000 |  | 3,885 | 4.00 |
|  | 1000 to 10000 |  | 281 | 0.29 |
|  | More than 10000 |  | 870 | 0.90 |
|  | Total |  | 97,062 | 100.00 |
| 9 | Number of encroached water bodies | No. | 251 | 0.26 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.
'Note: The first census of Water bodies was conducted by State nodal Department in Maharashtra excluding Mumbai and Mumbai Suburban districts'

## MANIPUR

Manipur is affluent in natural as well as cultural beauty. This land of natural caves offers a unique experience to explore the hidden corners of nature. The state is rewarded with multiple rivers, waterfalls and the sparkling beauty of its water bodies.

The State has an area of $22,327 \mathrm{~km}^{2}$. It has 9 districts with a population of $27,21,756$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,658 water bodies have been enumerated in the State of Manipur, out of which $82.6 \%(1,369)$ are in rural areas and the remaining $17.4 \%$ (289) are in urban areas.


A pond in Thoubal District Majority of the water bodies are ponds followed by reservoirs and lakes as depicted from chart given below.


- $\quad 61.9 \%(1,026)$ are privately owned whereas the remaining $38.1 \%$ ( 632 ) are under public ownership. This reflects the dominance of private entities in ownership of water bodies. Out of all the privately owned water bodies, a major chunk of $74.0 \%$ (759) is in the hands of group of individual farmers. Distribution of water bodies by ownership status is shown in the charts given below. By location, $23.8 \%(395)$ water bodies are located in tribal areas and the remaining $76.2 \%(1,263)$ are in the area under 'Drought Prone Areas Programme', flood prone area, naxal affected and other areas.

- Out of 1,658 water bodies, $96.6 \%(1,601)$ water bodies are "in use" whereas rest $3.4 \%(57)$ are "not in use" on account of drying up, siltation and other reasons. Out of 'in use' water bodies, majority of them are used for domestic/drinking purpose followed by pisciculture and irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Manipur, there are 222 natural and 1,436 man-made water bodies. Out of 222 natural water bodies, $89.2 \%$ (198) water bodies are located in rural areas and the remaining 10.8\% (24) are located in urban areas. Out of 1,436 man-made water bodies, $81.5 \%(1,171)$ water bodies are located in rural areas and the remaining $18.5 \%$ (265) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50, 000.


A pond in Moirang block of Bishnupur District

- Out of 1,658 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 1,656 water bodies. During reference year 2017-18, out of these 1,656 water bodies, $17.7 \%$ (294) water bodies had fully filled up storage capacity, $60.7 \%(1,005)$ water bodies had storage capacity filled upto three fourth level, $18.4 \%$ (304) water bodies had storage capacity filled upto half level, $2.2 \%$ (36) water bodies had storage capacity filled upto one fourth level whereas $1.0 \%$ (17) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 1,656 water bodies, $39.0 \%$ (646) water bodies are found to be filled up
every year, $46.6 \%$ (772) are usually filled up, 13.1\% (217) are rarely filled up and 1.3\% (21) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, only two (02) water bodies are covered in District Irrigation Plan/State Irrigation Plan. Both these water bodies are ponds. State has reported encroachment in six (06) water bodies out of all the enumerated water bodies. Out of 'in use' water bodies, $91.4 \%(1,464)$ are benefitting one (01) city/town, $8.2 \%$ (131) water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.4 \%$ (6) water bodies are benefitting more than five (05) cities/towns.
- Out of all water bodies, $90.6 \%(1,502)$ of the water bodies have water spread area less than 0.5 hectares whereas $0.2 \%$ (3) water bodies have water spread area more than 50 hectares. In terms of storage capacity, $58.6 \%$ ( 971 ) water bodies have storage capacity between 1,000 to 10,000 cubic meters whereas $10.1 \%$ (168) water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'water spread area' and 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Manipur are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,658 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,369 | 82.57 |
|  | Total Number of Water Bodies in Urban Areas | no. | 289 | 17.43 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 1,556 | 93.85 |
|  | Tanks |  | 17 | 1.03 |
|  | Lakes |  | 19 | 1.15 |
|  | Reservoirs |  | 64 | 3.86 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 1 | 0.06 |
|  | Others |  | 1 | 0.06 |
| b | Water Bodies with Private Ownership | no. | 1,026 | 61.88 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 19 | 1.15 |
|  | Tribal |  | 395 | 23.82 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 87 | 5.25 |
|  | Naxal affected area |  | 4 | 0.24 |
|  | Others |  | 1,153 | 69.54 |
|  | Total |  | 1,658 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 74 | 4.62 |
|  | Industrial |  | 0 | 0.00 |
|  | Pisciculture |  | 365 | 22.80 |
|  | Domestic/ Drinking |  | 1,120 | 69.96 |
|  | Recreation |  | 19 | 1.19 |
|  | Religious |  | 11 | 0.69 |
|  | Ground Water recharge |  | 0 | 0.00 |
|  | Others |  | 12 | 0.75 |
|  | Total |  | 1,601 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 222 | 13.39 |
|  | Man Made |  | 1,436 | 86.61 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 13 | 22.81 |
|  | Construction |  | 14 | 24.56 |
|  | Siltation |  | 3 | 5.26 |
|  | Destroyed beyond repair |  | 2 | 3.51 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 2 | 3.51 |
|  | Others |  | 23 | 40.35 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 646 | 39.01 |
|  | Usually filled up |  | 772 | 46.62 |
|  | Rarely filled up |  | 217 | 13.10 |
|  | Never filled up |  | 21 | 1.27 |
|  | Total |  | 1,656 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,464 | 91.44 |
|  | 2 to 5 |  | 131 | 8.18 |
|  | 6 to 10 |  | 4 | 0.25 |
|  | 11 to 20 |  | 1 | 0.06 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 1 | 0.06 |
|  | Total |  | 1,601 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 1,502 | 90.59 |
|  | 0.5 hectares to 1.0 hectares |  | 115 | 6.94 |
|  | 1 hectares to 5 hectares |  | 29 | 1.75 |
|  | 5 hectares to 10 hectares |  | 7 | 0.42 |
|  | 10 hectares to 50 hectares |  | 2 | 0.12 |
|  | More than 50 hectares |  | 3 | 0.18 |
|  | Total |  | 1,658 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 34 | 2.05 |
|  | 100 to 1000 |  | 485 | 29.25 |
|  | 1000 to 10000 |  | 971 | 58.56 |
|  | More than 10000 |  | 168 | 10.13 |
|  | Total |  | 1,658 | 100.00 |
| 9 | Number of encroached water bodies | No. | 6 | 0.36 |

[^2]
## MEGHALAYA

The State of Meghalaya is situated on the north east of India. It is bounded on the north by Goalpara, Kamrup and Nowgong districts, on the east by Karbi Anglong and North Cachar Hills districts, all of Assam, and on the south and west by Bangladesh. The Area of the Meghalaya is $22,429 \mathrm{Km}^{2}$ and total population is $29,66,889$ (As per 2011 Census).

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 13,332 water bodies have been enumerated, out of which $96 \%$ $(12,798)$ are in rural areas and the remaining $4 \%$ (534) are in urban areas. Out of total waterbodies,
 $64.5 \%(8,600)$ are privately owned whereas the remaining $35.5 \%(4,732)$ are under public ownership. By location, 13,147 water bodies are in tribal areas and 6 water bodies are in flood prone area.
- Majority of the water bodies are ponds followed by water conservation schemes/percolation tanks/check dams and others as depicted from chart given below.

- $\quad 94.7 \%(12,620)$ water bodies are "in use"; $5.3 \%(712)$ water bodies are reported to be "not in use" on account of drying up, siltation, destroyed beyond repair and other reasons. Among all the 'in use' water bodies, $80 \%(10,098)$ are ponds, $16.6 \%(2,095)$ are water conservation schemes/ percolation tanks/check dams and the remaining 3.4\% (427) are tanks, lakes, reservoirs etc. Out of 'in use' Water Bodies (i.e. 12,620 ), $72.4 \%(9,142)$ water bodies are used for pisciculture purpose in the State.

- There are 212 natural and 13,120 man-made water bodies in Meghalaya. Out of 212 Natural water bodies, $97.6 \%$ (207) water bodies are located in rural areas whereas $2.4 \%$ (5) are located in urban areas. Out of 13,120 man-made water bodies, $96 \%(12,591)$ water bodies are located in rural areas whereas $4 \%$ (529) are located in urban areas. Most of the man-made water bodies have original cost of construction between Rs. 50000 to 1 Lakhs.


A Pond in Meghalaya, Ri Bhoi district Belahari village

- Out of 13,332 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 10,840 water bodies. During reference year 2017-18, out of these 10,840 water bodies, $49.9 \%(5,412)$ water bodies had fully filled up storage capacity, $38.7 \%(4,195)$ had storage capacity filled upto three fourth level, $8.3 \%$ (896) water bodies had storage capacity filled upto half level, $1.1 \%$ (121) water bodies had storage capacity filled upto one fourth level whereas $2 \%$ (216) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 10,840 water bodies, $51.7 \%(5,609)$ water bodies are filled up every year, $40 \%$ $(4,332)$ water bodies are usually filled up, $5.2 \%(566)$ rarely filled up and $3.1 \%(333)$ found to be never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below. Out of total storage capacity (i.e. 5,95,42,575 cubic meters) of 'in use' water bodies, maximum storage capacity ( $68.7 \%$, i.e. $4,09,37,834$ cubic meters) is attributed to Reservoirs.


- $\quad 17.4 \%(2,316)$ are basically water conservation schemes/ percolation dams/ check dams. Out of 'in use' water bodies, $70.5 \%(8,894)$ are benefitting one $(01)$ city/town and $26.7 \%(3,374)$ water bodies are fulfilling requirements of 2-5 cities/towns.
- Out of 13,332 water bodies, the information on 'water spread area' was reported in 13,318 water bodies. Out of these 13,318 water bodies, $91.9 \%(12,238)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of total 13,332 water bodies, $39.2 \%$ $(5,220)$ water bodies have storage capacity between 100 to 1,000 Cubic Meters and majority of these water bodies are in rural areas. Distribution of storage capacity of water bodies is given in charts given below:

- Out of 13,332 water bodies, $\operatorname{Six}$ (6) water bodies are reported to be encroached. These are three (3) ponds followed by two (2) water conservation schemes/ percolation dams/ check dams and one (1) Tank.
- Key parameters of First Census of Water Bodies for the State of Meghalaya are given in the Annexure.

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 13,332 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 12,798 | 95.99 |
|  | Total Number of Water Bodies in Urban Areas | no. | 534 | 4.01 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 10,564 | 79.24 |
|  | Tanks |  | 100 | 0.75 |
|  | Lakes |  | 75 | 0.56 |
|  | Reservoirs |  | 101 | 0.76 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 2,316 | 17.37 |
|  | Others |  | 176 | 1.32 |
| b | Water Bodies with Private Ownership | no. | 8,600 | 0.00 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 66 | 0.50 |
|  | Tribal |  | 13,147 | 98.61 |
|  | DDP |  | 15 | 0.11 |
|  | Flood Prone |  | 6 | 0.05 |
|  | Naxal affected area |  | 4 | 0.03 |
|  | Others |  | 94 | 0.71 |
|  | Total |  | 13,332 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 2,395 | 18.98 |
|  | Industrial |  | 35 | 0.28 |
|  | Pisciculture |  | 9,142 | 72.44 |
|  | Domestic/ Drinking |  | 795 | 6.30 |
|  | Recreation |  | 33 | 0.26 |
|  | Religious |  | 10 | 0.08 |
|  | Ground Water recharge |  | 105 | 0.83 |
|  | Others |  | 105 | 0.83 |
|  | Total |  | 12,620 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 212 | 1.59 |
|  | Man Made |  | 13,120 | 98.41 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 134 | 18.82 |
|  | Construction |  | 8 | 1.12 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Siltation |  | 66 | 9.27 |
|  | Destroyed beyond repair |  | 122 | 17.13 |
|  | Salinity |  | 3 | 0.42 |
|  | Due to industrial effluents |  | 1 | 0.14 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 5,609 | 51.7 |
|  | Usually filled up |  | 4,332 | 40.0 |
|  | Rarely filled up |  | 566 | 5.2 |
|  | Never filled up |  | 333 | 3.1 |
|  | Total |  | 10,840 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 8,894 | 70.48 |
|  | 2 to 5 |  | 3,374 | 26.74 |
|  | 6 to 10 |  | 313 | 2.48 |
|  | 11 to 20 |  | 31 | 0.25 |
|  | 21 to 50 |  | 3 | 0.02 |
|  | 50 to 500 |  | 5 | 0.04 |
|  | Total |  | 12,620 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 12,238 | 91.89 |
|  | 0.5 hectares to 1.0 hectares |  | 432 | 3.24 |
|  | 1 hectares to 5 hectares |  | 521 | 3.91 |
|  | 5 hectares to 10 hectares |  | 93 | 0.70 |
|  | 10 hectares to 50 hectares |  | 25 | 0.19 |
|  | More than 50 hectares |  | 9 | 0.07 |
|  | Total |  | 13,318 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 4,942 | 37.07 |
|  | 100 to 1000 |  | 5,220 | 39.15 |
|  | 1000 to 10000 |  | 3,009 | 22.57 |
|  | More than 10000 |  | 161 | 1.21 |
|  | Total |  | 13,332 | 100.00 |
| 9 | Number of encroached water bodies | No. | 6 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## MIZORAM

"Land of the hill people"-'Mizoram' is one of the states of Northeast India. Mizoram is a land of rolling hills, valleys, rivers and lakes. It is the $2^{\text {nd }}$ least populous state in the country.

Mizoram has a total Geographic area of $21,087 \mathrm{~km}^{2}$. According to the 2011 census, Mizoram had a population of 10,91,014.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 2,185 water bodies have been enumerated, out of which $65.7 \%(1,436)$ are in rural areas and the remaining $34.3 \%$ (749) are in urban areas. $79.4 \%(1,734)$ are privately owned whereas the


A lake in Champhai town in Champhai District, Mizoram remaining $20.6 \%$ (451) are under public ownership. Out of the private owned water bodies, $86.9 \%(1,506)$ are in the hands of individual farmers. By location, 2,171 water bodies are in tribal areas.

- Majority of the water bodies are ponds followed by tanks as depicted from chart given below.

- Out of 2,185 water bodies, $94.4 \%(2,063)$ water bodies are 'in use' whereas $5.6 \%$ (122) water bodies are 'not in use' on account of drying up, siltation, destroyed beyond repair and other reasons. Out of 'in use' water bodies, $66 \%(1,361)$ water bodies are used for pisciculture purpose in the State. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 19 natural and 2,166 man-made water bodies in Mizoram. Out of 19 natural water bodies, 16 water bodies are located in rural areas whereas 3 are located in urban areas. Out of 2,166 man-made water bodies, $65.6 \%(1,420)$ water bodies are located in rural areas whereas $34.4 \%$ (746) are located in urban areas. Most of the man-made water bodies have original cost of construction below 5 Lakh.


A pond in Saiphai village of Kolasib district,Mizoram

- Out of 2,185 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 2,171 water bodies. During reference year 2017-18, out of these 2,171 water bodies, $32.9 \%$ (714) water bodies had fully filled up storage capacity, $58.6 \%(1,273)$ water bodies had storage capacity filled upto three fourth level, $6.4 \%$ (139) water bodies had storage capacity filled upto half level, $0.8 \%$ (17) water bodies had storage capacity filled upto one fourth level whereas $1.3 \%$ (28) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 2,171 water bodies, $62.2 \%(1,350)$ water bodies are found to be filled up every year, $33 \%$ (717) are usually filled up, $3.3 \%$ (71) are rarely filled up and $1.5 \%$ (33) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.


- Out of 2,185 water bodies, $40(1.8 \%)$ are covered in District Irrigation Plan/State Irrigation Plan. Out of the 2,063 'in use' water bodies, $54.9 \%(1,132)$ are benefitting one (01) city/town and $45 \%$ (929) water bodies are fulfilling requirements of 2-5 cities/towns and remaining 2 water bodies are benefitting to 11-20 cities/ towns
- The information on 'water spread area' was reported in 2,183 water bodies. Out of these 2183 water bodies, $64.5 \%(1,409)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of 2185 water bodies, $34.7 \%$ (759) water bodies have storage capacity between 1,000 to 10,000 Cubic Meters. Distribution of storage capacity of water bodies is given in charts given below:

- Out of 2,185 water bodies, seven (07) water bodies are reported to be encroached. These are three (03) ponds and four (04) tanks.
- Key parameters of First Census of Water Bodies for the State of Mizoram are given in the Annexure.

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 2,185 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,436 | 65.72 |
|  | Total Number of Water Bodies in Urban Areas | no. | 749 | 34.28 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 1,305 | 59.73 |
|  | Tanks |  | 819 | 37.48 |
|  | Lakes |  | 30 | 1.37 |
|  | Reservoirs |  | 17 | 0.78 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 9 | 0.41 |
|  | Others |  | 5 | 0.23 |
| b | Water Bodies with Private Ownership | no. | 1,734 | 79.36 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 12 | 0.55 |
|  | Tribal |  | 2,171 | 99.36 |
|  | DDP |  | 2 | 0.09 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 0 | 0.00 |
|  | Total |  | 2,185 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 254 | 12.31 |
|  | Industrial |  | 23 | 1.11 |
|  | Pisciculture |  | 1,361 | 65.97 |
|  | Domestic/ Drinking |  | 385 | 18.66 |
|  | Recreation |  | 15 | 0.73 |
|  | Religious |  | 1 | 0.05 |
|  | Ground Water recharge |  | 2 | 0.10 |
|  | Others |  | 22 | 1.07 |
|  | Total |  | 2,063 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 19 | 0.87 |
|  | Man Made |  | 2,166 | 99.13 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 23 | 18.85 |
|  | Construction |  | 51 | 41.80 |
|  | Siltation |  | 9 | 7.38 |
|  | Destroyed beyond repair |  | 7 | 5.74 |
|  | Salinity |  | 0 | 0.00 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 32 | 26.23 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 1,350 | 62.18 |
|  | Usually filled up |  | 717 | 33.03 |
|  | Rarely filled up |  | 71 | 3.27 |
|  | Never filled up |  | 33 | 1.52 |
|  | Total |  | 2,171 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,132 | 54.87 |
|  | 2 to 5 |  | 929 | 45.03 |
|  | 6 to 10 |  | 0 | 0.00 |
|  | 11 to 20 |  | 2 | 0.10 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 2,063 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 1,409 | 64.54 |
|  | 0.5 hectares to 1.0 hectares |  | 655 | 30.00 |
|  | 1 hectares to 5 hectares |  | 116 | 5.31 |
|  | 5 hectares to 10 hectares |  | 1 | 0.05 |
|  | 10 hectares to 50 hectares |  | 1 | 0.05 |
|  | More than 50 hectares |  | 1 | 0.05 |
|  | Total |  | 2,183 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. Mtrs |  |  |
|  | 0 to 100 |  | 619 | 28.33 |
|  | 100 to 1000 |  | 527 | 24.12 |
|  | 1000 to 10000 |  | 759 | 34.74 |
|  | More than 10000 |  | 280 | 12.81 |
|  | Total |  | 2,185 | 100.00 |
| 9 | Number of encroached water bodies | No. | 7 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## NAGALAND

Nagaland is engulfed in mystery, inhabited by vibrant people zealously guarding their culture - dancers, warriors, head-hunters; mountains, valleys, forests. The topography of the State is nearly all hilly, many rivers cut through this mountainous terrain, like sharp swords slicing through rocks.

The State has an area of $16,579 \mathrm{~km}^{2}$. It has 11 districts with a population of 1.9 million.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,432 water bodies have been enumerated in the State of Nagaland, out of which $89.87 \%(1,287)$ are in rural areas and


A pond in Dimapur District the remaining $10.13 \%$ (145) are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 94.13 \%(1,348)$ are privately owned whereas the remaining $5.87 \%$ ( 84 ) are under public ownership. This reflects the dominance of private entities in ownership of water bodies. Out of all the privately owned water bodies, a major chunk of $75.74 \%(1,021)$ is in the hands of individual farmers. Distribution of water bodies by ownership status is shown in the charts given below. By location, out of 1,432 water bodies, 1,425 are located in tribal areas whereas remaining 7 are under 'Drought Prone Areas Programme' and other areas.

- Out of all water bodies, $96.37 \%(1,380)$ water bodies are "in use" whereas rest $3.63 \%(52)$ are "not in use" on account of drying up, siltation and other reasons. Majority of 'in use' water bodies are used for pisciculture followed by irrigation and domestic/ drinking purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Nagaland, there are 688 natural and 744 man-made water bodies. Out of 688 natural water bodies, $90.55 \%$ (623) water bodies are located in rural areas and the remaining $9.45 \%$ (65) are located in urban areas. Out of 744 man-made water bodies, $89.25 \%$ (664) water bodies are located in rural areas and the remaining $10.75 \%$ ( 80 ) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 1,432 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A pond in Kiphire District 1,382 water bodies. During reference year 2017-18, out of these 1,382 water bodies, $14.62 \%$ (202) water bodies had fully filled up storage capacity, $58.61 \%$ (810) water bodies had storage capacity filled upto three fourth level, $22.36 \%$ (309) water bodies had storage capacity filled upto half level, $3.33 \%$ (46) water bodies had storage capacity filled upto
one fourth level whereas $1.08 \%$ (15) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 1,382 water bodies, $26.56 \%$ (367) water bodies are found to be filled up every year, $43.05 \%$ (595) are usually filled up, 25.62\% (354) are rarely filled up and $4.77 \%$ (66) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, only eleven (11) water bodies are covered in District Irrigation Plan/State Irrigation Plan out of which eight (08) are ponds and three (03) are lakes. State has reported encroachment in only one (01) water body out of all the enumerated water bodies. Out of 'in use' water bodies, $99.5 \%(1,373)$ are benefitting one (01) city/town whereas the remaining $0.5 \%$ (7) water bodies are benefitting atleast two (02) cities/towns.
- $69.34 \%$ (993) of the water bodies have water spread area less than 0.5 hectares whereas $18.92 \%$ (271) water bodies have water spread area between 0.5 hectares to 1.0 hectares. In terms of storage capacity, $42.60 \%$ (610) water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $16.97 \%$ (243) water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'water spread area' and 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the State of Nagaland are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,432 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,287 | 89.87 |
|  | Total Number of Water Bodies in Urban Areas | no. | 145 | 10.13 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 1,298 | 90.64 |
|  | Tanks |  | 72 | 5.03 |
|  | Lakes |  | 12 | 0.84 |
|  | Reservoirs |  | 0 | 0.00 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 50 | 3.49 |
|  | Others |  | 0 | 0.00 |
| b | Water Bodies with Private Ownership | no. | 1,348 | 94.13 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 5 | 0.35 |
|  | Tribal |  | 1,425 | 99.51 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 2 | 0.14 |
|  | Total |  | 1,432 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 109 | 7.90 |
|  | Industrial |  | 22 | 1.59 |
|  | Pisciculture |  | 1,166 | 84.49 |
|  | Domestic/ Drinking |  | 59 | 4.28 |
|  | Recreation |  | 8 | 0.58 |
|  | Religious |  | 3 | 0.22 |
|  | Ground Water recharge |  | 6 | 0.43 |
|  | Others |  | 8 | 0.58 |
|  | Total |  | 1,380 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 688 | 48.04 |
|  | Man Made |  | 744 | 51.96 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 11 | 21.15 |
|  | Construction |  | 1 | 1.92 |
|  | Siltation |  | 18 | 34.62 |
|  | Destroyed beyond repair |  | 3 | 5.77 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 19 | 36.54 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 367 | 26.56 |
|  | Usually filled up |  | 595 | 43.05 |
|  | Rarely filled up |  | 354 | 25.62 |
|  | Never filled up |  | 66 | 4.78 |
|  | Total |  | 1,382 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,373 | 99.49 |
|  | 2 to 5 |  | 5 | 0.36 |
|  | 6 to 10 |  | 1 | 0.07 |
|  | 11 to 20 |  | 1 | 0.07 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 1,380 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 993 | 69.34 |
|  | 0.5 hectares to 1.0 hectares |  | 271 | 18.92 |
|  | 1 hectares to 5 hectares |  | 166 | 11.59 |
|  | 5 hectares to 10 hectares |  | 1 | 0.07 |
|  | 10 hectares to 50 hectares |  | 1 | 0.07 |
|  | More than 50 hectares |  | 0 | 0.00 |
|  | Total |  | 1,432 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 141 | 9.85 |
|  | 100 to 1000 |  | 438 | 30.59 |
|  | 1000 to 10000 |  | 610 | 42.60 |
|  | More than 10000 |  | 243 | 16.97 |
|  | Total |  | 1,432 | 100.00 |
| 9 | Number of encroached water bodies | No. | 1 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## ODISHA

Odisha is a State with majestic mountains, serene beaches, spectacular wildlife, unique arts \& crafts, breathtaking waterfalls, interesting culture and some gorgeous landscapes. The State is bounded by the bay in the east, West Bengal in the north-east, Bihar in the north, Madhya Pradesh in the west and Andhra Pradesh in the south.

Odisha has 30 districts with a total geographical area of $1,55,707 \mathrm{~km}^{2}$ and a population of $4,19,74,218$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,81,837 water bodies have been enumerated in the State of


A Tank in Sundargarh District Odisha, out of which $97.9 \%(1,78,054)$ are in rural areas and the remaining $2.1 \%(3,783)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 50.9 \%(92,575)$ water bodies are privately owned whereas the remaining $49.1 \%(89,262)$ are under public ownership. Distribution of water bodies by ownership status is shown in the charts given below. By location, $31.3 \%(56,900)$ water bodies are located in tribal areas and the remaining $68.7 \%$ $(1,24,937)$ are located in area under Drought Prone Area Program, flood prone areas, naxal affected areas and other areas.

- $89.2 \%(1,62,207)$ water bodies are in use whereas rest $10.8 \%(19,630)$ are not in use on account of drying up, siltation, salinity, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in pisciculture followed by irrigation. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Odisha, there are 7,109 natural and $1,74,728$ man-made water bodies. Out of 7,109 natural water bodies, $97.3 \%(6,915)$ are located in rural areas whereas remaining $2.7 \%$ (194) are located in urban areas. Out of $1,74,728$ man-made water bodies, $97.9 \%$ $(1,71,139)$ water bodies are located in rural areas and the remaining $2.1 \%(3,589)$ are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 1,81,837 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected


A Tank in Malkangiri District
for 1,76,881 water bodies. During reference year 2017-18, out of these 1,76,881 water bodies, $46.0 \%(81,350)$ water bodies had fully filled up storage capacity, $42.0 \%(74,362)$ water bodies had storage capacity filled upto three fourth level, $8.7 \%(15,400)$ water bodies had storage capacity filled upto half level, $1.7 \%(3,081)$ water bodies had storage capacity filled upto one fourth level whereas $1.6 \%(2,688)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of $1,76,881$ water bodies, $48.1 \%(85,008)$ water bodies are found to be filled up every year, $43.8 \%(77,547)$ are usually filled up, $6.5 \%(11,497)$ are rarely filled up and $1.6 \%(2,829)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- $3.0 \%(5,445)$ of the water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these $44.9 \%(2,444)$ are tanks, $39.1 \%(2,129)$ are ponds and the remaining $16.0 \%(872)$ are lakes, reservoirs, water conservation schemes/percolation tanks/check dams etc. Out of 'in use' water bodies, $80.7 \%(1,30,930)$ are benefitting one $(01)$ city/town, $18.0 \%(29,129)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $1.3 \%(2,148)$ water bodies are benefitting more than five (05) cities/towns. State has reported encroachment in 1,048 out of all the enumerated water bodies, out of which 570 are ponds.
- Out of $1,81,837$ water bodies, the information on 'water spread area' was reported in $1,80,532$ water bodies. Out of these 1,80,532 water bodies, $77.6 \%(1,40,014)$ of the water bodies have water spread area less than 0.5 hectares whereas, $11.6 \%(20,801)$ water bodies have water spread area between 0.5 hectares to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below:

- In terms of storage capacity, $51.5 \%(93,706)$ water bodies have storage capacity between 1,000 to 10,000 cubic meters whereas $23.8 \%(43,268)$ have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below:

- Key parameters of First Census of Water Bodies for the State of Odisha are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,81,837 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,78,054 | 97.92 |
|  | Total Number of Water Bodies in Urban Areas | no. | 3,783 | 2.08 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 94,025 | 51.71 |
|  | Tanks |  | 80,671 | 44.36 |
|  | Lakes |  | 579 | 0.32 |
|  | Reservoirs |  | 1,606 | 0.88 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 4,474 | 2.46 |
|  | Others |  | 482 | 0.27 |
| b | Water Bodies with Private Ownership | no. | 92,575 | 50.91 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 22,735 | 12.50 |
|  | Tribal |  | 56,900 | 31.29 |
|  | DDP |  | 1,160 | 0.64 |
|  | Flood Prone |  | 24,495 | 13.47 |
|  | Naxal affected area |  | 1,518 | 0.83 |
|  | Others |  | 75,029 | 41.26 |
|  | Total |  | 1,81,837 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 25,289 | 15.59 |
|  | Industrial |  | 3,609 | 2.22 |
|  | Pisciculture |  | 1,10,647 | 68.21 |
|  | Domestic/ Drinking |  | 11,899 | 7.34 |
|  | Recreation |  | 3,452 | 2.13 |
|  | Religious |  | 683 | 0.42 |
|  | Ground Water recharge |  | 1,018 | 0.63 |
|  | Others |  | 5,610 | 3.46 |
|  | Total |  | 1,62,207 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 7,109 | 3.91 |
|  | Man Made |  | 1,74,728 | 96.09 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 5,600 | 28.53 |
|  | Construction |  | 1,941 | 9.89 |
|  | Siltation |  | 3,564 | 18.16 |
|  | Destroyed beyond repair |  | 1,154 | 5.88 |
|  | Salinity |  | 320 | 1.63 |
|  | Due to industrial effluents |  | 122 | 0.62 |
|  | Others |  | 6,929 | 35.30 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 85,008 | 48.06 |
|  | Usually filled up |  | 77,547 | 43.84 |
|  | Rarely filled up |  | 11,497 | 6.50 |
|  | Never filled up |  | 2,829 | 1.60 |
|  | Total |  | 1,76,881 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,30,930 | 80.72 |
|  | 2 to 5 |  | 29,129 | 17.96 |
|  | 6 to 10 |  | 563 | 0.35 |
|  | 11 to 20 |  | 497 | 0.31 |
|  | 21 to 50 |  | 489 | 0.30 |
|  | 50 to 500 |  | 589 | 0.36 |
|  | More than 500 |  | 10 | 0.01 |
|  | Total |  | 1,62,207 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 1,40,014 | 77.56 |
|  | 0.5 hectares to 1.0 hectares |  | 20,801 | 11.52 |
|  | 1 hectares to 5 hectares |  | 16,997 | 9.41 |
|  | 5 hectares to 10 hectares |  | 2,056 | 1.14 |
|  | 10 hectares to 50 hectares |  | 428 | 0.24 |
|  | More than 50 hectares |  | 236 | 0.13 |
|  | Total |  | 1,80,532 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu . Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 8,868 | 4.88 |
|  | 100 to 1000 |  | 35,995 | 19.80 |
|  | 1000 to 10000 |  | 93,706 | 51.53 |
|  | More than 10000 |  | 43,268 | 23.79 |
|  | Total |  | 1,81,837 | 100.00 |
| 9 | Number of encroached water bodies | No. | 1,048 | 0.58 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## PUNJAB

A State better known as 'Land of five rivers', Sutlej, Ravi, Beas, Chenab and Jhelum. Punjab, located in northern India is primarily agriculture-based due to the presence of abundant water sources and fertile soils. As per 2011 Census of India, State has a population of 2,77,04,236 and an area of $50,362 \mathrm{~km}^{2}$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, total 16,012 water bodies are enumerated, out of which $98.9 \%$ $(15,831)$ are in rural areas and the remaining $1.1 \%$ (181) are in urban areas. Out of total water bodies, $97.6 \%(15,633)$ are under public ownership


A Pond in Punjab Fazilka district Midda village whereas the remaining $2.4 \%$ (379) are under private ownership.

- Majority of the water bodies are Ponds followed by Tanks and Lakes as depicted from chart given below.

- Out of total 16,012 water bodies, $48.0 \%(7,680)$ water bodies are in use and a major chunk of $52.0 \%$ $(8,332)$ water bodies are reported not in use on account of being dried up, siltation, destroyed beyond repair and other reasons. Among all the in use water bodies, majority of the water bodies, i.e. $95.8 \%(7,358)$ are ponds and the remaining $4.2 \%$ (322) are tanks, lakes, reservoirs, water conservation schemes/ percolation tanks/ check dams etc. Out of total in use water bodies, $65.2 \%$ $(5,008)$ water bodies are used for ground water recharge in the State.

- There are 14,318 natural and 1,694 man-made water bodies in Punjab. Out of 14,318 natural water bodies, $98.9 \%(14,154)$ water bodies are located in rural areas whereas $1.1 \%(164)$ are located in urban areas. Out of 1,694 man-made water bodies, $99 \%(1,677)$ water bodies are located in rural areas whereas $1 \%(17)$ are located in urban areas. Most of the man-made water bodies have original cost of construction Up to Rs. 50,000.


A pond in Punjab, Fazilka district Arniwali village

- Out of total 16,012 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 15,835 water bodies. During reference year 2017-18, out of these 15,835 water bodies, capacity of $19.3 \%(3,049)$ water bodies had fully filled up storage, $43.9 \%(6,953)$ water bodies had storage capacity filled upto three fourth level, $23.2 \%(3,681)$ water bodies had storage capacity filled upto half level, $8.8 \%(1,391)$ water bodies had storage capacity filled upto one fourth level whereas $4.8 \%$ (761) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 15,835 water bodies, $37.6 \%(5,956)$ water bodies are found to be filled up every year, $46.5 \%(7,368)$ are usually filled up, $13.1 \%(2,065)$ are rarely filled up and $2.8 \%$ (446) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage capacity is given in the diagram given below.

- Out of 16,012 water bodies, $150(0.9 \%)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these 150 water bodies, $74.7 \%$ (112) are ponds and the remaining $25.3 \%$ (38) are tanks, lakes, reservoirs, water conservation schemes/ percolation dams/ check dams etc. Out of 'in use' water bodies, $83.1 \%(6,383)$ are benefitting one $(01)$ city/town, $15.5 \%(1,192)$ water bodies are fulfilling requirements of $2-5$ cities/ towns whereas the remaining $1.4 \%$ (105) are benefitting more than 5 cities/towns.
- Out of total 16,012 water bodies, the information on 'water spread area' was reported in 15,997 water bodies. Out of these 15,997 water bodies, $61.3 \%(9,814)$ of the water bodies have water spread area less than 0.5 hectares and $25.5 \%(4,081)$ have water spread area between 0.5 hectares to 1.0 hectares. Percentage distribution of water bodies according to 'water spread area' is shown in the chart given below.

- In terms of storage capacity, out of total water bodies, $55.0 \%(8,813)$ water bodies have storage capacity between 1000 to 10000 Cubic Meters whereas $25.3 \%(4,047)$ water bodies have storage capacity more than 10000 Cubic Meters. Distribution of storage capacity of water bodies is depicted in chart given below:

- Out of 16,012 water bodies, $9.9 \%(1,578)$ water bodies are reported to be encroached out of which encroachment area can be assessed for 1,486 water bodies. Among these 1,486 water bodies, 1,082 are assessed to have less than $25 \%$ area under encroachment, 381 having encroachment area ranging between $25 \%$ to $75 \%$ and 23 have more than $75 \%$ encroachment area.
- Key parameters of First Census of Water Bodies for the State of Punjab are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 16,012 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 15,831 | 98.87 |
|  | Total Number of Water Bodies in Urban Areas | no. | 181 | 1.13 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 15,064 | 94.08 |
|  | Tanks |  | 589 | 3.68 |
|  | Lakes |  | 151 | 0.94 |
|  | Reservoirs |  | 31 | 0.19 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 36 | 0.22 |
|  | Others |  | 141 | 0.88 |
| b | Water Bodies with Private Ownership | no. | 379 | 2.37 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 1,979 | 12.36 |
|  | Tribal |  | 398 | 2.49 |
|  | DDP |  | 271 | 1.69 |
|  | Flood Prone |  | 30 | 0.19 |
|  | Naxal affected area |  | 64 | 0.40 |
|  | Others |  | 13,270 | 82.88 |
|  | Total |  | 16,012 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 216 | 2.81 |
|  | Industrial |  | 191 | 2.49 |
|  | Pisciculture |  | 129 | 1.68 |
|  | Domestic/ Drinking |  | 559 | 7.28 |
|  | Recreation |  | 97 | 1.26 |
|  | Religious |  | 48 | 0.63 |
|  | Ground Water recharge |  | 5,008 | 65.21 |
|  | Others |  | 1,432 | 18.65 |
|  | Total |  | 7,680 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 14,318 | 89.42 |
|  | Man Made |  | 1,694 | 10.58 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 471 | 5.65 |
|  | Construction |  | 307 | 3.68 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Siltation |  | 330 | 3.96 |
|  | Destroyed beyond repair |  | 95 | 1.14 |
|  | Salinity |  | 129 | 1.55 |
|  | Due to industrial effluents |  | 94 | 1.13 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 5,956 | 37.61 |
|  | Usually filled up |  | 7,368 | 46.53 |
|  | Rarely filled up |  | 2,065 | 13.04 |
|  | Never filled up |  | 446 | 2.82 |
|  | Total |  | 15,835 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 6,383 | 83.11 |
|  | 2 to 5 |  | 1,192 | 15.52 |
|  | 6 to 10 |  | 39 | 0.51 |
|  | 11 to 20 |  | 24 | 0.31 |
|  | 21 to 50 |  | 31 | 0.40 |
|  | 50 to 500 |  | 10 | 0.13 |
|  | More than 500 |  | 1 | 0.01 |
|  | Total |  | 7,680 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 9,814 | 61.35 |
|  | 0.5 hectares to 1.0 hectares |  | 4,081 | 25.51 |
|  | 1 hectares to 5 hectares |  | 1,940 | 12.13 |
|  | 5 hectares to 10 hectares |  | 146 | 0.91 |
|  | 10 hectares to 50 hectares |  | 8 | 0.05 |
|  | More than 50 hectares |  | 8 | 0.05 |
|  | Total |  | 15,997 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. Mtrs |  |  |
|  | 0 to 100 |  | 1,592 | 9.95 |
|  | 100 to 1000 |  | 1,560 | 9.74 |
|  | 1000 to 10000 |  | 8,813 | 55.04 |
|  | More than 10000 |  | 4,047 | 25.27 |
|  | Total |  | 16,012 | 100.00 |
| 9 | Number of encroached water bodies | No. | 1,578 | 9.86 |

[^3]
## RAJASTHAN

Rajasthan, 'Land of Kings' or 'Land of Kingdom' is India's largest state by area. The State located on northwest part of country and is a home of cultural diversity. Its features include the ruins of Indus Valley Civilization, Temples, Forts and Fortresses in almost every city.

Rajasthan has 33 districts with a total geographical area of $3,42,239$ square $\mathrm{km}^{2}$ and a population of $6,85,48,437$.

## Major findings of the census

- $\quad$ In $1^{\text {st }}$ census of water bodies, 16,939 water bodies have been enumerated in the State of Rajasthan, out of which $98.9 \%(16,750)$ are in rural areas and the


A tank in Chittorgarh district remaining $1.1 \%$ (189) in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 53.3 \%(9,033)$ are privately owned whereas the remaining $46.7 \%(7,906)$ are under public ownership. Distribution of water bodies by ownership status is shown in the charts given below. By location, $10.3 \%(1,745)$ water bodies are located in tribal areas, $6.1 \%$ (1037) in Drought Prone Area Program(DPAP) areas and remaining $83.6 \%(14,157)$ are located in Desert Development Plan (DDP), flood prone, naxal affected areas and other areas.

- Out of all water bodies, $79.2 \%(13,416)$ water bodies are in use whereas rest $20.8 \%(3,523)$ are not in use on account of drying up, siltation, salinity, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in Irrigation followed by domestic/ drinking purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Rajasthan, there are 4,799 natural and 12,140 man-made water bodies. Out of 4,799 natural water bodies, $98.5 \%(4,727)$ water bodies are located in rural areas and the remaining $1.5 \%$ (72) are located in urban areas. Out of 12,140 man-made water bodies, $99 \%(12,023)$ water bodies are located in rural areas and the remaining $1 \%$ (117) in urban areas. Most of the manmade water bodies have original cost of construction upto Rs. 1 lakh.
- Out of 16,939 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A lake in Bhilwara District 13,883 water bodies. During reference year 2017-18, out of these 13,883 water bodies, $22 \%(3,067)$ water bodies had fully filled up storage capacity, $21.8 \%(3,022)$ water bodies had storage capacity filled upto three fourth level, $19.7 \%(2,736)$ water bodies had storage capacity filled upto half level, $20.2 \%(2,798)$ water bodies had storage capacity filled upto one fourth level whereas $16.3 \%(2,260)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 13,883 water bodies, $7.8 \%(1,077)$ water bodies are found to be filled up every year, $62.4 \%(8,664)$ are usually filled up, $24.2 \%(3,361)$ are rarely filled up and $5.6 \%$ (781) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, $3.7 \%$ (629) are covered in District Irrigation Plan/State Irrigation Plan. Among these $41.3 \%$ (260) are tanks and the remaining $58.7 \%$ (369) are ponds, lakes, reservoirs etc. Out of 'in use' water bodies, $89.9 \%(12,057)$ are benefitting one (01) city/town, $9.6 \%(1,282)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.5 \%$ (77) water bodies are benefitting more than five (05) cities/towns. State has reported encroachment in $0.3 \%$ (47) water bodies out of all the enumerated water bodies. The number of encroached water bodies by type is shown in the chart given below.

- Out of 16,939 water bodies, $46.6 \%(7,893)$ of the water bodies have water spread area less than 0.5 hectares whereas, $16.9 \%(2,861)$ water bodies have water spread area between 0.5 hectares to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below:

- In terms of storage capacity, $43.1 \%(7,294)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $33.0 \%(5,590)$ have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Rajasthan are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 16,939 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 16,750 | 98.88 |
|  | Total Number of Water Bodies in Urban Areas | no. | 189 | 1.12 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 8,046 | 47.50 |
|  | Tanks |  | 5,639 | 33.29 |
|  | Lakes |  | 66 | 0.39 |
|  | Reservoirs |  | 132 | 0.78 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 1,481 | 8.74 |
|  | Others |  | 1,575 | 9.30 |
| b | Water Bodies with Private Ownership | no. | 9,033 | 53.33 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 1,037 | 6.12 |
|  | Tribal |  | 1,745 | 10.30 |
|  | DDP |  | 236 | 1.39 |
|  | Flood Prone |  | 52 | 0.31 |
|  | Naxal affected area |  | 46 | 0.27 |
|  | Others |  | 13,823 | 81.60 |
|  | Total |  | 16,939 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 5,766 | 42.98 |
|  | Industrial |  | 322 | 2.40 |
|  | Pisciculture |  | 187 | 1.39 |
|  | Domestic/ Drinking |  | 2,511 | 18.72 |
|  | Recreation |  | 244 | 1.82 |
|  | Religious |  | 137 | 1.02 |
|  | Ground Water recharge |  | 2,406 | 17.93 |
|  | Others |  | 1,843 | 13.74 |
|  | Total |  | 13,416 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 4,799 | 28.33 |
|  | Man Made |  | 12,140 | 71.67 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 16,88 | 47.91 |
|  | Construction |  | 235 | 6.67 |
|  | Siltation |  | 268 | 7.61 |
|  | Destroyed beyond repair |  | 104 | 2.95 |
|  | Salinity |  | 25 | 0.71 |
|  | Due to industrial effluents |  | 5 | 0.14 |
|  | Others |  | 1,198 | 34.01 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 1,077 | 7.76 |
|  | Usually filled up |  | 8,664 | 62.41 |
|  | Rarely filled up |  | 3,361 | 24.21 |
|  | Never filled up |  | 781 | 5.63 |
|  | Total |  | 13,883 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 12,057 | 89.87 |
|  | 2 to 5 |  | 1,282 | 9.56 |
|  | 6 to 10 |  | 53 | 0.40 |
|  | 11 to 20 |  | 13 | 0.10 |
|  | 21 to 50 |  | 10 | 0.07 |
|  | 50 to 500 |  | 1 | 0.01 |
|  | Total |  | 13,416 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 7,893 | 46.60 |
|  | 0.5 hectares to 1.0 hectares |  | 2,861 | 16.89 |
|  | 1 hectares to 5 hectares |  | 3,938 | 23.25 |
|  | 5 hectares to 10 hectares |  | 1,018 | 6.01 |
|  | 10 hectares to 50 hectares |  | 873 | 5.15 |
|  | More than 50 hectares |  | 356 | 2.10 |
|  | Total |  | 16,939 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 3,419 | 20.18 |
|  | 100 to 1000 |  | 636 | 3.75 |
|  | 1000 to 10000 |  | 7,294 | 43.06 |
|  | More than 10000 |  | 5,590 | 33.00 |
|  | Total |  | 16,939 | 100.00 |
| 9 | Number of encroached water bodies | No. | 47 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## SIKKIM

Sikkim is a host to Kangchenjunga, the highest peak in India and third highest on Earth. State offers Lush and thick forests, exotic flora, beautiful hills, picturesque villages, hot springs and waterfalls etc.

Sikkim has 04 districts with a total geographical area of 7,096 $\mathrm{km}^{2}$. As per the census of 2011 , Sikkim has a population of 6,10,577.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 134 water bodies have been enumerated in the State of Sikkim, out of which $91.0 \%$ (122) are in rural areas and the remaining 9.0\%


Gurudongmar lake in Lachen village of Sikkim (12) are in urban areas. Majority of the water bodies are ponds followed by lakes and tanks as depicted from chart given below.


- $\quad 43.3 \%$ (58) water bodies are privately owned whereas the remaining $56.7 \%$ ( 76 ) are under public ownership. This reflects the dominance of public authorities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the charts given below. By location, $27.6 \%$ (37) water bodies are located in tribal areas and the remaining $72.4 \%$ (97) are in flood prone and other areas.

- Out of 134 water bodies, $90.3 \%$ (121) water bodies are in use whereas rest $9.7 \%$ (13) are not in use on account of drying up, siltation and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in pisciculture followed by domestic/ drinking purpose, recreation, religious etc. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Sikkim, there are 44 natural and 90 man-made water bodies. All the natural water bodies are located in rural areas whereas out of 90 man-made water bodies, $86.7 \%$ (78) water bodies are located in rural areas and the remaining $13.3 \%$ (12) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.


Rangit Hydropower project in Nordang village of Sikkim

- Out of 134 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 129 water bodies. During reference year 2017-18, out of these 129 water bodies, $37.2 \%$ (48) water bodies had fully filled up storage capacity, $41.9 \%$ (54) water bodies had storage
capacity filled upto three fourth level, $10.0 \%$ (13) water bodies had storage capacity filled upto half level, $4.7 \%$ (6) water bodies had storage capacity filled upto one fourth level whereas $6.2 \%$ (8) had $\mathrm{nil} /$ negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 129 water bodies, $73.6 \%$ (95) water bodies are found to be filled up every year, $15.5 \%$ (20) are usually filled up, $6.2 \%$ (8) are rarely filled up and $4.7 \%$ (6) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, $6.0 \%$ (08) are covered in District Irrigation Plan/State Irrigation Plan. Among these eight (08) water bodies, seven (07) are ponds and one (01) is lake. Out of 'in use' water bodies, $28.1 \%$ (34) are benefitting one (01) city/town, $62.0 \%$ ( 75 ) water bodies are fulfilling requirements of $2-5$ cities/ towns and the remaining $9.9 \%$ (12) water bodies are benefitting more than five (05) cities/towns. State has not reported any encroachment in the enumerated water bodies.
- $\quad 90.3 \%(121)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, $47.0 \%$ (63) water bodies have storage capacity between 100 to 1000 Cubic Meters. Distribution of water bodies by 'water spread area' and 'storage capacity of water bodies' is shown in charts given below:


- Key parameters of First Census of Water Bodies for the State of Sikkim are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 134 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 122 | 91.04 |
|  | Total Number of Water Bodies in Urban Areas | no. | 12 | 8.96 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 65 | 48.51 |
|  | Tanks |  | 24 | 17.91 |
|  | Lakes |  | 37 | 27.61 |
|  | Reservoirs |  | 3 | 2.24 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 3 | 2.24 |
|  | Others |  | 2 | 1.49 |
| b | Water Bodies with Private Ownership | no. | 58 | 43.28 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 0 | 0.00 |
|  | Tribal |  | 37 | 27.61 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 1 | 0.75 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 96 | 71.64 |
|  | Total |  | 134 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 3 | 2.48 |
|  | Industrial |  | 2 | 1.65 |
|  | Pisciculture |  | 61 | 50.41 |
|  | Domestic/ Drinking |  | 20 | 16.53 |
|  | Recreation |  | 16 | 13.22 |
|  | Religious |  | 15 | 12.40 |
|  | Ground Water recharge |  | 0 | 0.00 |
|  | Others |  | 4 | 3.31 |
|  | Total |  | 121 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 44 | 32.84 |
|  | Man Made |  | 90 | 67.16 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 8 | 61.54 |
|  | Construction |  | 2 | 15.38 |
|  | Siltation |  | 1 | 7.69 |
|  | Destroyed beyond repair |  | 0 | 0.00 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 0 | 0.00 |
|  | Others |  | 2 | 15.38 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 95 | 73.64 |
|  | Usually filled up |  | 20 | 15.50 |
|  | Rarely filled up |  | 8 | 6.20 |
|  | Never filled up |  | 6 | 4.65 |
|  | Total |  | 129 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 34 | 28.10 |
|  | 2 to 5 |  | 75 | 61.98 |
|  | 6 to 10 |  | 7 | 5.79 |
|  | 11 to 20 |  | 4 | 3.31 |
|  | 21 to 50 |  | 1 | 0.83 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 121 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 121 | 90.30 |
|  | 0.5 hectares to 1.0 hectares |  | 4 | 2.99 |
|  | 1 hectares to 5 hectares |  | 5 | 3.73 |
|  | 5 hectares to 10 hectares |  | 2 | 1.49 |
|  | 10 hectares to 50 hectares |  | 2 | 1.49 |
|  | More than 50 hectares |  | 0 | 0.00 |
|  | Total |  | 134 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 42 | 31.34 |
|  | 100 to 1000 |  | 63 | 47.01 |
|  | 1000 to 10000 |  | 19 | 14.18 |
|  | More than 10000 |  | 10 | 7.46 |
|  | Total |  | 134 | 100.00 |
| 9 | Number of encroached water bodies | No. | 0 |  |

[^4]
## Tamil Nadu

Tamil Nadu is one of the southern States in India bounded on north by Andhra Pradesh and Karnataka, on the west by Kerala, on the east by the Bay of Bengal, and on the south by the Indian Ocean. The State is famous for its wonderful temples and monuments.

Tamil Nadu has a total Geographic area of $1,30,058 \mathrm{~km}^{2}$. According to the 2011 census, Tamil Nadu had a population of $7,21,47,030$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,06,957 water bodies have been enumerated, out of which $92.9 \%(99,414)$ are in rural areas and the remaining $7.1 \%(7,543)$ are in urban areas.


Lake in Kodiyalam Village of Krishnagiri District of Tamil Nadu Majority of the water bodies are tanks followed by ponds as depicted from chart given below.


- $\quad 91.8 \%(98,139)$ are public owned whereas the remaining $8.2 \%(8,818)$ are under private ownership. By location, $34.3 \%(36,683)$ water bodies are located in the areas under 'Drought Prone Areas Programme', 8.9\% $(9,547)$ in tribal areas and the remaining 56.8\% $(60,727)$ are located in flood prone area, naxal affected and other areas. Distribution of water bodies by location is shown in the charts given below.

- Out of $1,06,957$ water bodies, $53.1 \%(56,760)$ water bodies are in use whereas $46.9 \%(50,197)$ water bodies are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, $35.8 \%(20,324)$ water bodies are used for irrigation purpose in the State. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 77,244 natural and 29,713 man-made water bodies in Tamil Nadu. Out of 77,244 natural water bodies, $91.9 \%(70,974)$ water bodies are located in rural areas whereas $8.1 \%(6,270)$ are located in urban areas. Out of 29,713 man-made water bodies, $95.7 \%(28,440)$ water bodies are located in rural areas whereas $4.3 \%$ $(1,273)$ are located in urban areas. Most of the manmade water bodies have original cost of construction Up to Rs.50,000.
- Out of $1,06,957$ water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 95,898 water bodies. During reference year 2017-18,


A Lake in Vetriyur village of Ariyalur district ofTamil Nadu out of these 95,898 water bodies, $15.5 \%(14,857)$ water bodies had fully filled up storage capacity, $19.3 \%(18,517)$ water bodies had storage capacity filled upto three fourth level, $20.1 \%(19,235)$ water bodies had storage capacity filled upto half level, $20.4 \%(19,600)$ water bodies had storage capacity filled upto one fourth level whereas $24.7 \%(23,689)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 95,898 water bodies, $27.5 \%(26,343)$ water bodies are found to be filled up every year, $16.1 \%(15,487)$ are usually filled up, $39.4 \%(37,783)$ are rarely filled up and $17 \%(16,285)$ are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.



- Out of 10,6957 water bodies, 13,651 (12.8\%) are covered in District Irrigation Plan/State Irrigation Plan. Among these 13,651 water bodies, $43.2 \%(5,896)$ are tanks. Out of 'in use' water bodies, $57.5 \%(32,671)$ are benefitting one (01) city/town, $39.1 \%(22,168)$ water bodies are fulfilling requirements of $2-5$ cities/ towns and the remaining $3.4 \%(1,921)$ water bodies are benefitting more than five (05) cities/towns.
- Out of 1,06,957 water bodies, the information on 'water spread area' was reported in 1,06,292 water bodies. Out of these $1,06,292$ water bodies, $70.3 \%(74,673)$ of the water bodies have water spread area less than 0.5 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below.

- In terms of storage capacity, out of $1,06,957$ water bodies, $54.4 \%(58,155)$ water bodies have storage capacity between 0 to 100 cubic meters and majority of these water bodies are in rural areas. Distribution of storage capacity of water bodies is given in the pie chart given below:
\% distribution of WBs by storage capacity (in Cu. mtrs)

- Out of 1,06,957 water bodies in Tamil Nadu, 8,366 water bodies are reported to be encroached. These are 2,805 ponds, 3,565 tanks, 1,458 lakes, 5 reservoirs, 69 water conservation schemes/ percolation dams/ check dams and 464 others. Out of all these 8,366 water bodies, the encroachment area can be assessed in 4,933 water bodies. Among the water bodies whose encroachment area can be assessed, 2,596 are assessed to have less than $25 \%$ area under encroachment, 1,328 having encroachment area ranging between $25 \%$ to $75 \%$ and 1,009 have more than 75\% encroachment area.
- Key parameters of First Census of Water Bodies for the State of Tamil Nadu are given in the Annexure.

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,06,957 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 99,414 | 92.95 |
|  | Total Number of Water Bodies in Urban Areas | no. | 7,543 | 7.05 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 38,321 | 35.83 |
|  | Tanks |  | 43,837 | 40.99 |
|  | Lakes |  | 13,629 | 12.74 |
|  | Reservoirs |  | 111 | 0.10 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 2,782 | 2.60 |
|  | Others |  | 8,277 | 7.74 |
| b | Water Bodies with Private Ownership | no. | 8,818 |  |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 36,683 | 34.30 |
|  | Tribal |  | 9,547 | 8.93 |
|  | DDP |  | 3,236 | 3.03 |
|  | Flood Prone |  | 3,724 | 3.48 |
|  | Naxal affected area |  | 758 | 0.71 |
|  | Others |  | 53,009 | 49.56 |
|  | Total |  | 1,06,957 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 20,324 | 35.81 |
|  | Industrial |  | 751 | 1.32 |
|  | Pisciculture |  | 4,196 | 7.39 |
|  | Domestic/ Drinking |  | 8,022 | 14.13 |
|  | Recreation |  | 1,623 | 2.86 |
|  | Religious |  | 1,129 | 1.99 |
|  | Ground Water recharge |  | 10,903 | 19.21 |
|  | Others |  | 9,812 | 17.29 |
|  | Total |  | 56,760 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 77,244 | 72.22 |
|  | Man Made |  | 29,713 | 27.78 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 21,449 | 42.73 |
|  | Construction |  | 5,621 | 11.20 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Siltation |  | 2,808 | 5.59 |
|  | Destroyed beyond repair |  | 1,095 | 2.18 |
|  | Salinity |  | 326 | 0.65 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 26,343 | 27.47 |
|  | Usually filled up |  | 15,487 | 16.15 |
|  | Rarely filled up |  | 37,783 | 39.40 |
|  | Never filled up |  | 16,285 | 16.98 |
|  | Total |  | 95,898 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 32,671 | 57.56 |
|  | 2 to 5 |  | 22,168 | 39.06 |
|  | 6 to 10 |  | 1,004 | 1.77 |
|  | 11 to 20 |  | 552 | 0.97 |
|  | 21 to 50 |  | 142 | 0.25 |
|  | 50 to 500 |  | 223 | 0.39 |
|  | Total |  | 56,760 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 74,673 | 70.25 |
|  | 0.5 hectares to 1.0 hectares |  | 11,577 | 10.89 |
|  | 1 hectares to 5 hectares |  | 12,211 | 11.49 |
|  | 5 hectares to 10 hectares |  | 5,971 | 5.62 |
|  | 10 hectares to 50 hectares |  | 1,152 | 1.08 |
|  | More than 50 hectares |  | 708 | 0.67 |
|  | Total |  | 1,06,292 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 58,155 | 54.37 |
|  | 100 to 1000 |  | 19,544 | 18.27 |
|  | 1000 to 10000 |  | 20,299 | 18.98 |
|  | More than 10000 |  | 8,959 | 8.38 |
|  | Total |  | 1,06,957 | 100.00 |
| 9 | Number of encroached water bodies | no. | 8,366 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## TELANGANA

Telangana is the $29^{\text {th }}$ state of India, formed on the $2^{\text {nd }}$ of June 2014. After decades of movement for a separate State, Telangana was created by passing the AP State Reorganization Bill in both houses of Parliament. The State is located on the uplands of Deccan plateau with rich culture, beautiful and unique art forms.

The State has an area of $1,12,077 \mathrm{~km}^{2}$ and a population of 3,50,03,674.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 64,055 water bodies have been enumerated in the State of Telangana, out of which majority, i.e. $98.5 \%(63,063)$ are in


A pond in Khammam District rural areas and the remaining $1.5 \%$ (992) are in urban areas. Majority of the water bodies are ponds followed by water conservation schemes/percolation tanks/check dams and tanks as depicted from chart given below.


- $\quad 80.5 \%(51,593)$ are under public ownership whereas the remaining $19.5 \%(12,462)$ are under private ownership. By location, $17.3 \%(11,076)$ water bodies are located in the areas under 'Drought Prone Areas Programme', $10.6 \%(6,781)$ in tribal areas and the remaining $72.1 \%(46,198)$ are located in flood prone area, naxal affected and other areas. Distribution of water bodies by location is shown in the chart given below.

- Out of 64,055 water bodies, $80.8 \%(51,732)$ water bodies are in use whereas rest $19.2 \%(12,323)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, majority of them are used for irrigation followed by ground water recharge. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 10,170 natural and 53,885 man-made water bodies in the State of Telangana. Out of 10,170 natural water bodies, $96.2 \%(9,781)$ water bodies are located in rural areas and the remaining $3.8 \%$ (389) are located in urban areas. Out of 53,885 man-made water bodies, $98.9 \%(53,282)$ water bodies are located in rural areas and the remaining $1.1 \%$ (603) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 64,055 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A tank in Adilabad district 43,695 water bodies. During reference year 2017-18, out of these 43,695 water bodies, $22.1 \%(9,657)$ water bodies had fully filled up storage capacity, $26.1 \%$ $(11,403)$ water bodies had storage capacity filled upto three fourth level, $19.3 \%(8,416)$ water
bodies had storage capacity filled upto half level, $19.3 \%(8,429)$ water bodies had storage capacity filled upto one fourth level whereas $13.2 \%(5,790)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these 43,695 water bodies, $20.3 \%$ $(8,862)$ water bodies are found to be filled up every year, $41.9 \%(18,301)$ are usually filled up, 29.8\% $(13,033)$ are rarely filled up and $8.0 \%(3,499)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, 38,540 water bodies are covered in District Irrigation Plan/State Irrigation Plan. Among these water bodies, $45.9 \%(17,681)$ are ponds whereas the remaining $54.1 \%(20,859)$ are tanks, lakes, reservoirs, water conservation schemes/percolation tanks/check dams etc. Out of 'in use' water bodies, $64.7 \%(33,468)$ are benefitting one $(01)$ city/town, $32.9 \%(17,009)$ water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $2.4 \%(1,255)$ water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 3,032 water bodies, out of which $50.8 \%(1,540)$ are ponds and the remaining $49.2 \%(1,492)$ are tanks, lakes, reservoirs, water conservation schemes/percolation tanks/check dams etc. Out of these 3,032 encroached water bodies, the encroachment area can be assessed in 2,028 water bodies. Among these 2,028 water bodies, $69.8 \%(1,415)$ are assessed to have less than $25 \%$ area under encroachment, $19.8 \%$ (402) having encroachment area ranging between $25 \%$ to $75 \%$ and remaining $10.4 \%$ (211) have more than $75 \%$ area encroached.

- Out of 64,055 water bodies, the information on 'water spread area' was reported in 63,768 water bodies. Out of these 63,768 water bodies, $51.6 \%(32,913)$ of the water bodies have water spread area less than 0.5 hectares whereas $1.8 \%(1,166)$ water bodies have water spread area more than 50 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below.

- In terms of storage capacity, $24.4 \%(15,634)$ water bodies out of 64,055 enumerated water bodies have more than 10,000 cubic meters of storage capacity. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

> \% distribution of WBs by storage capacity (in Cu. mtrs)


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\square to 100
■ 100 to 1000
    -1000 to 10000
    \squareMore than 10000
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- Key parameters of First Census of Water Bodies for the State of Telangana are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 64,055 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 63,063 | 98.45 |
|  | Total Number of Water Bodies in Urban Areas | no. | 992 | 1.55 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 27,003 | 42.16 |
|  | Tanks |  | 16,292 | 25.43 |
|  | Lakes |  | 289 | 0.45 |
|  | Reservoirs |  | 111 | 0.17 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 19,239 | 30.03 |
|  | Others |  | 1,121 | 1.75 |
| b | Water Bodies with Private Ownership | no. | 12,462 | 19.46 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 11,076 | 17.29 |
|  | Tribal |  | 6,781 | 10.59 |
|  | DDP |  | 161 | 0.25 |
|  | Flood Prone |  | 639 | 1.00 |
|  | Naxal affected area |  | 234 | 0.37 |
|  | Others |  | 45,164 | 70.51 |
|  | Total |  | 64,055 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 30,085 | 58.15 |
|  | Industrial |  | 168 | 0.32 |
|  | Pisciculture |  | 850 | 1.64 |
|  | Domestic/ Drinking |  | 432 | 0.84 |
|  | Recreation |  | 110 | 0.21 |
|  | Religious |  | 145 | 0.28 |
|  | Ground Water recharge |  | 19,165 | 37.05 |
|  | Others |  | 777 | 1.50 |
|  | Total |  | 51,732 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 10,170 | 15.88 |
|  | Man Made |  | 53,885 | 84.12 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 9,540 | 77.40 |
|  | Construction |  | 179 | 1.45 |
|  | Siltation |  | 192 | 1.56 |
|  | Destroyed beyond repair |  | 535 | 4.34 |
|  | Salinity |  | 24 | 0.19 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Due to industrial effluents |  | 30 | 0.24 |
|  | Others |  | 1,823 | 14.81 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 8,862 | 20.28 |
|  | Usually filled up |  | 18,301 | 41.88 |
|  | Rarely filled up |  | 13,033 | 29.83 |
|  | Never filled up |  | 3,499 | 8.01 |
|  | Total |  | 43,695 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 33,468 | 64.70 |
|  | 2 to 5 |  | 17,009 | 32.88 |
|  | 6 to 10 |  | 467 | 0.90 |
|  | 11 to 20 |  | 410 | 0.79 |
|  | 21 to 50 |  | 336 | 0.65 |
|  | 50 to 500 |  | 42 | 0.08 |
|  | Total |  | 51,732 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | На. |  |  |
|  | Less than 0.5 hectares |  | 32,913 | 51.61 |
|  | 0.5 hectares to 1.0 hectares |  | 5,838 | 9.15 |
|  | 1 hectares to 5 hectares |  | 14,838 | 23.27 |
|  | 5 hectares to 10 hectares |  | 4,362 | 6.84 |
|  | 10 hectares to 50 hectares |  | 4,651 | 7.29 |
|  | More than 50 hectares |  | 1,166 | 1.83 |
|  | Total |  | 63,768 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 38,884 | 60.70 |
|  | 100 to 1000 |  | 3,883 | 6.06 |
|  | 1000 to 10000 |  | 5,654 | 8.83 |
|  | More than 10000 |  | 15,634 | 24.41 |
|  | Total |  | 64,055 | 100.00 |
| 9 | Number of encroached water bodies | No. | 3,032 | 4.73 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

TRIPURA

Tripura is a North-Eastern state which shares its borders with Bangladesh, Mizoram and Assam. It flourishes on the bounties of nature and the beauty of the state is heightened by its human resources and rich cultural tradition. Folk culture of the tribal and non-tribal people of the state forms the backbone of Tripura's cultural tradition.

Tripura has eight districts with a total geographical area of $10,491.69 \mathrm{~km}^{2}$ and a population of $36,73,917$ according to 2011 census.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 36,239 water bodies


A pond in Gomati district have been enumerated in the State of Tripura, out of which $88.7 \%(32,140)$ are in rural areas and the remaining $11.3 \%(4,099)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 98.9 \%(35,857)$ are privately owned whereas the remaining $1.1 \%$ ( 382 ) are under public ownership. This reflects the dominance of private entities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the charts given below.

- Out of all water bodies, $99.99 \%(36,235)$ water bodies are in use whereas only $0.01 \%$ (4) are not in use. Out of 'in use' water bodies, a major proportion of water bodies are used in pisciculture. Percentage distribution of 'in use' water bodies by type of use is shown in the diagram given below.

- Out of 36,239 water bodies in Tripura, there is only one natural water body and rest all are manmade water bodies. Out of 36,238 man-made water bodies, $88.7 \%(32,140)$ water bodies are located in rural areas and the remaining $11.3 \%(4,098)$ are in urban areas. Most of the man-made water bodies have original cost of construction upto Rs. 50,000.


A Pond in Sepahijala District

- Out of 36,239 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 36,150 water bodies. During reference year 2017-18, out of these 36,150 water bodies, $0.08 \%$ (28) water bodies had fully filled up storage capacity, $3.89 \%(1,407)$ water bodies had storage capacity filled upto three fourth level, $0.59 \%$ (214) water bodies had storage capacity filled upto half level, $0.02 \%$ (6) water bodies had storage capacity filled upto one fourth level whereas $95.42 \%(34,495)$ had nil/negligible storage capacity.Based on the criteria of filling up of storage
capacity during last 5 years, out of 36,150 water bodies, $0.1 \%$ (25) water bodies are found to be filled up every year, $2.7 \%$ ( 972 ) are usually filled up, $28.7 \%(10,388)$ are rarely filled up and $68.5 \%$ $(24,765)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, $85.1 \%(30,841)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these $99.7 \%(30,753)$ are ponds and the remaining $0.3 \%(106)$ are tanks, lakes, reservoirs etc. Out of 'in use' water bodies, $98.93 \%(35,847)$ are benefitting one (01) city/town, $0.34 \%$ (123) water bodies are fulfilling requirements of $2-5$ cities/ towns and the remaining $0.73 \%$ (265) water bodies are benefitting more than five (05) cities/towns. Out of all the enumerated water bodies, State has reported encroachment in only 01 water body which is a pond.
- Out of 36,239 water bodies, $98.2 \%(35,569)$ of the water bodies have water spread area less than 0.5 hectares whereas, $1.3 \%$ (454) water bodies have water spread area between 0.5 hectares to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in chart given below:

- In terms of storage capacity, $69.5 \%(25,191)$ water bodies have storage capacity between 100 to 1,000 cubic meters whereas $0.2 \%$ (63) have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Tripura are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 36,239 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 32,140 | 88.69 |
|  | Total Number of Water Bodies in Urban Areas | no. | 4,099 | 11.31 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 36,070 | 99.53 |
|  | Tanks |  | 77 | 0.21 |
|  | Lakes |  | 3 | 0.01 |
|  | Reservoirs |  | 0 | 0.00 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 87 | 0.24 |
|  | Others |  | 2 | 0.01 |
| b | Water Bodies with Private Ownership | no. | 35,857 | 98.95 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 2 | 0.01 |
|  | Tribal |  | 4,399 | 12.14 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 4 | 0.01 |
|  | Others |  | 31,834 | 87.84 |
|  | Total |  | 36,239 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 0 | 0.00 |
|  | Industrial |  | 0 | 0.00 |
|  | Pisciculture |  | 36,216 | 99.95 |
|  | Domestic/ Drinking |  | 7 | 0.02 |
|  | Recreation |  | 3 | 0.01 |
|  | Religious |  | 1 | 0.00 |
|  | Ground Water recharge |  | 0 | 0.00 |
|  | Others |  | 8 | 0.02 |
|  | Total |  | 36,235 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 1 | 0.00 |
|  | Man Made |  | 36,238 | 100.00 |
| 4 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 25 | 0.07 |
|  | Usually filled up |  | 972 | 2.69 |
|  | Rarely filled up |  | 10,388 | 28.74 |
|  | Never filled up |  | 24,765 | 68.51 |
|  | Total |  | 36,150 | 100.00 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 35,847 | 98.93 |
|  | 2 to 5 |  | 123 | 0.34 |
|  | 6 to 10 |  | 200 | 0.55 |
|  | 11 to 20 |  | 15 | 0.04 |
|  | 21 to 50 |  | 5 | 0.01 |
|  | 50 to 500 |  | 28 | 0.08 |
|  | More than 500 |  | 17 | 0.05 |
|  | Total |  | 36,235 | 100.00 |
| 6 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 35,569 | 98.15 |
|  | 0.5 hectares to 1.0 hectares |  | 454 | 1.25 |
|  | 1 hectares to 5 hectares |  | 194 | 0.54 |
|  | 5 hectares to 10 hectares |  | 16 | 0.04 |
|  | 10 hectares to 50 hectares |  | 6 | 0.02 |
|  | More than 50 hectares |  | 0 | 0.00 |
|  | Total |  | 36,239 | 100.00 |
| 7 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . <br> Mtrs |  |  |
|  | 0 to 100 |  | 804 | 2.22 |
|  | 100 to 1000 |  | 25,191 | 69.51 |
|  | 1000 to 10000 |  | 10,181 | 28.09 |
|  | More than 10000 |  | 63 | 0.17 |
|  | Total |  | 36,239 | 100.00 |
| 8 | Number of encroached water bodies | No. | 1 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## Uttar Pradesh

Uttar Pradesh in one of the most ancient cradles of Indian culture. A land of epics, holy rivers, ancient cities and pilgrimage. In the State, Fairs and festivals have always been a moment to be cherished. From natural to man-made wonders, Uttar Pradesh hosts umpteen places reflecting the priceless and timeless art and natural beauty.

Uttar Pradesh has 75 districts with a total geographical area of $2,43,286 \mathrm{~km}^{2}$ and a population of 24 crore.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, total $2,45,087$ water bodies are enumerated in the State of


A Pond in Lucknow District Uttar Pradesh, out of which $98 \%(2,40,139)$ are in rural areas and the remaining $2 \%(4,948)$ are in urban areas. Majority of the water bodies are Ponds as depicted from chart given below.


- Out of total water bodies, $97.9 \%(2,40,027)$ are under public ownership whereas the remaining $2.1 \%(5,060)$ are privately owned. This reflects the dominance of public authorities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the next chart. $95 \%$ of the water bodies are owned by Gram Panchayats

- Out of total water bodies, $73.3 \%(1,795,86)$ water bodies are in use whereas rest $26.7 \%(65,501)$ are not in use on account of being dried up, siltation, salinity, destroyed beyond repair and other reasons. Among water bodies in use, a major proportion of water bodies are used in Pisciculture (42.4\%) followed by ground water recharge (39.1\%). Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Uttar Pradesh, there are $91 \%(2,23,150)$ natural water bodies and $9 \%(21,937)$ man-made water bodies. Out of 2,23,150 natural water bodies, $98 \%$ $(2,18,639)$ water bodies are located in rural areas and the remaining $2 \%(4,511)$ are located in urban areas. Similarly, out of 21,937 man-made water bodies, $98 \%$ $(21,500)$ water bodies are located in rural areas and the remaining 2\% (437) are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs. 5 lakhs.


A Pond in Prayagraj District

- Out of total 2,45,087 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for $2,40,874$ water bodies. During reference year 2017-18, out of these $2,40,874$ water bodies, $10.3 \%(24,787)$ water bodies had fully filled up storage capacity, $24.4 \%$ $(58,882)$ water bodies had storage capacity filled upto three fourth level, $36.6 \%(88,177)$ water bodies had storage capacity filled upto half level, $19.1 \%(45,888)$ water bodies had storage capacity filled upto one fourth level whereas $9.6 \%(23,140)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of $2,40,874$ water bodies, $10 \%$ $(23,975)$ water bodies are found to be filled up every year, $40 \%(96,435)$ are usually filled up, $40.6 \%$ $(97,870)$ are rarely filled up and $9.4 \%(22,594)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of total water bodies, 3,925 are covered in District Irrigation Plan/State Irrigation Plan. Among these $89 \%(3,495)$ are ponds and the remaining $11 \%(430)$ are Water Conservation Schemes/percolation tanks/check dams, tanks, lakes and reservoirs. Out of total in use water bodies, $89.5 \%(1,60,748)$ are benefitting one ( 01 ) city/town, $8.9 \%(15,905)$ water bodies are fulfilling requirements of $2-5$ cities/towns and the remaining $1.6 \%(2,933)$ water bodies are benefitting more than five (05) cities/towns.
- $\quad$ State has reported encroachment in $6.2 \%(15,301)$ water bodies out of all the enumerated water bodies. $99.1 \%(15,168)$ of the encroached water bodies are ponds and the remaining $0.9 \%$ (133) are tanks, lakes, reservoirs etc. Out of all the encroached water bodies, the area under encroachment can be assessed in $68.4 \%(10,461)$ water bodies. The percentage distribution of water bodies according to extent of encroachment is shown in the chart given below.

- Out of total 2,45,087 water bodies, the information on 'water spread area' was reported in $2,29,354$ water bodies. Out of these $2,29,354$ water bodies, $75 \%(1,71,902)$ of the water bodies have water spread area less than 0.5 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below:

- In terms of storage capacity, $15.6 \%(38,200)$ of the water bodies have storage capacity more than 10000 cubic meters in Uttar Pradesh. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:

- Key parameters of First Census of Water Bodies for the State of Uttar Pradesh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 2,45,087 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 2,40,139 | 97.98 |
|  | Total Number of Water Bodies in Urban Areas | no. | 4,948 | 2.02 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 2,39,912 | 97.89 |
|  | Tanks |  | 573 | 0.23 |
|  | Lakes |  | 180 | 0.07 |
|  | Reservoirs |  | 209 | 0.09 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 4,177 | 1.70 |
|  | Others |  | 36 | 0.01 |
| b | Water Bodies with Private Ownership | no. | 5,060 | 2.06 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 12,074 | 4.93 |
|  | Tribal |  | 1,753 | 0.72 |
|  | DDP |  | 1,161 | 0.47 |
|  | Flood Prone |  | 2,238 | 0.91 |
|  | Naxal affected area |  | 1,072 | 0.44 |
|  | Others |  | 2,26,789 | 92.53 |
|  | Total |  | 2,45,087 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 9,090 | 5.06 |
|  | Industrial |  | 1,733 | 0.96 |
|  | Pisciculture |  | 76,071 | 42.36 |
|  | Domestic/ Drinking |  | 2,199 | 1.22 |
|  | Recreation |  | 7,326 | 4.08 |
|  | Religious |  | 6,300 | 3.51 |
|  | Ground Water recharge |  | 70,298 | 39.15 |
|  | Others |  | 6,569 | 3.66 |
|  | Total |  | 1,79,586 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 2,23,150 | 91.05 |
|  | Man Made |  | 21,937 | 8.95 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 21,374 | 32.63 |
|  | Construction |  | 1,908 | 2.91 |


| S.No. | Parameter | Unit | Value | Percentage to Total* |
| :---: | :---: | :---: | :---: | :---: |
|  | Siltation |  | 2,799 | 4.27 |
|  | Destroyed beyond repair |  | 6,369 | 9.72 |
|  | Salinity |  | 771 | 1.18 |
|  | Due to industrial effluents |  | 1,929 | 2.94 |
|  | Others |  | 30,351 | 46.34 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 23,975 | 9.95 |
|  | Usually filled up |  | 96,435 | 40.04 |
|  | Rarely filled up |  | 97,870 | 40.63 |
|  | Never filled up |  | 22,594 | 9.38 |
|  | Total |  | 2,40,874 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,60,748 | 89.51 |
|  | 2 to 5 |  | 15,905 | 8.86 |
|  | 6 to 10 |  | 598 | 0.33 |
|  | 11 to 20 |  | 1,407 | 0.78 |
|  | 21 to 50 |  | 460 | 0.26 |
|  | 50 to 500 |  | 468 | 0.26 |
|  | Total |  | 1,79,586 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 1,71,902 | 74.95 |
|  | 0.5 hectares to 1.0 hectares |  | 38,717 | 16.88 |
|  | 1 hectares to 5 hectares |  | 14,922 | 6.51 |
|  | 5 hectares to 10 hectares |  | 3,379 | 1.47 |
|  | 10 hectares to 50 hectares |  | 403 | 0.18 |
|  | More than 50 hectares |  | 31 | 0.01 |
|  | Total |  | 2,29,354 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 11,689 | 4.77 |
|  | 100 to 1000 |  | 44,611 | 18.20 |
|  | 1000 to 10000 |  | 1,50,587 | 61.44 |
|  | More than 10000 |  | 38,200 | 15.59 |
|  | Total |  | 2,45,087 | 100.00 |
| 9 | Number of encroached water bodies | No. | 15,301 | 6.24 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## UTTARAKHAND

Uttarakhand is largely a hilly State located at the foothills of the Himalayan mountain ranges. The State has international boundaries with China in the north and Nepal in the east. It is rich in natural resources especially water and forests with many glaciers, rivers, dense forests and snow-clad mountain peaks.

Uttarakhand has a total Geographic area of $53,483 \mathrm{~km}^{2}$. Total population of Uttarakhand as per 2011 census is 10,086,292.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 3,096 water bodies have been enumerated, out of which $95.9 \%$


A pond in Pindari village of Udham Singh Nagar district $(2,970)$ are in rural areas and the remaining $4.1 \%$ (126) are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 76.3 \%(2,361)$ water bodies are public owned whereas the remaining $23.7 \%(735)$ are under private ownership. Most of the public owned water bodies are Panchayat owned whereas most of the privately owned water bodies are owned by individual farmers. Percentage distribution water bodies according to ownership is shown in the pie charts given below.

- Out of 3,096 water bodies, $76.6 \%(2,371)$ water bodies are 'in use' whereas $23.4 \%(725)$ water bodies are not in use on account of drying up, siltation, destroyed beyond repair and other reasons. Out of 'in use' water bodies, $53.4 \%(1,267)$ water bodies are used for ground water recharge followed by $25.8 \%$ (611) for pisciculture. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 1,654 natural and 1,442 man-made water bodies in Uttarakhand. Out of 1,654 natural water bodies, $94.3 \%(1,560)$ water bodies are located in rural areas whereas $5.7 \%$ (94) are located in urban areas. Out of 1,442 man-made water bodies, $97.8 \%(1,410)$ water bodies are located in rural areas whereas $2.2 \%$ (32) are located in urban areas. Most of the man-made water bodies have original cost of construction up to Rs.1,00,000.
- Out of 3,096 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A Tank in KanelBunga village of Almora district of Uttarakhand 3,050 water bodies. During reference year 2017-18, out of these 3,050 water bodies, $45.8 \%(1,396)$ water bodies had fully filled up storage capacity, $17 \%$ (520) water bodies had storage capacity filled upto three fourth level, $19.9 \%$ (607) water bodies had storage capacity filled upto half level, $7.4 \%$ (225) water bodies had storage capacity filled upto one fourth level whereas $9.9 \%$ (302) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 3,050 water bodies, $43.8 \%(1,336)$ water bodies are found to be filled up every year, $32.9 \%(1,002)$ are usually filled up, $18.9 \%(577)$ are rarely filled up and $4.4 \%$ (135) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below. Out of total storage capacity (i.e. $2,75,60,55,678$ cubic meters) of 'in use' water bodies, maximum storage capacity ( $99.3 \%$, i.e. $2,73,62,45,216$ cubic meters) is attributed to Reservoirs.



- Out of 3,096 water bodies, $213(6.9 \%)$ are covered in District Irrigation Plan/State Irrigation Plan. Among these 213 water bodies, 70 are ponds, 112 are tanks and the remaining 31 are lakes, reservoirs, water conservation schemes/percolation tanks/check dams etc. Out of 'in use' water bodies, $83.2 \%(1,973)$ are benefitting one (01) city/town, $16.2 \%$ ( 383 ) water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.6 \%$ (15) water bodies are benefitting more than five (05) cities/towns.
- Out of 3,096 water bodies, $82.9 \%(2,567)$ of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of 3,096 water bodies, $41.5 \%(1,286)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters. Distribution of water bodies by water spread area and storage capacity is given in charts given below:

- Out of 3,096 water bodies, 5 water bodies are reported to be encroached. These are 4 ponds and 1 tank. Among the water bodies whose encroachment area can be assessed, only 1 is assessed to have encroachment area ranging between $25 \%$ to $50 \%$.
- Key parameters of First Census of Water Bodies for the State of Uttarakhand are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 3,096 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 2,970 | 95.93 |
|  | Total Number of Water Bodies in Urban Areas | no. | 126 | 4.07 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 2,514 | 81.20 |
|  | Tanks |  | 461 | 14.89 |
|  | Lakes |  | 48 | 1.55 |
|  | Reservoirs |  | 27 | 0.87 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 41 | 1.32 |
|  | Others |  | 5 | 0.16 |
| b | Water Bodies with Private Ownership | no. | 735 | 23.74 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 16 | 0.52 |
|  | Tribal |  | 183 | 5.91 |
|  | DDP |  | 26 | 0.84 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 2 | 0.06 |
|  | Others |  | 2,869 | 92.67 |
|  | Total |  | 3,096 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 323 | 13.62 |
|  | Industrial |  | 11 | 0.46 |
|  | Pisciculture |  | 611 | 25.76 |
|  | Domestic/ Drinking |  | 16 | 0.67 |
|  | Recreation |  | 26 | 1.10 |
|  | Religious |  | 17 | 0.72 |
|  | Ground Water recharge |  | 1,267 | 53.41 |
|  | Others |  | 101 | 4.26 |
|  | Total |  | 2,371 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 1,654 | 53.42 |
|  | Man Made |  | 1,442 | 46.58 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 204 | 28.14 |
|  | Construction |  | 4 | 0.55 |
|  | Siltation |  | 49 | 6.76 |
|  | Destroyed beyond repair |  | 21 | 2.90 |
|  | Salinity |  | 64 | 8.83 |
|  | Due to industrial effluents |  | 33 | 4.55 |
|  | Others |  | 350 | 48.28 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 1,336 | 43.80 |
|  | Usually filled up |  | 1,002 | 32.85 |
|  | Rarely filled up |  | 577 | 18.92 |
|  | Never filled up |  | 135 | 4.43 |
|  | Total |  | 3,050 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 1,973 | 83.21 |
|  | 2 to 5 |  | 383 | 16.15 |
|  | 6 to 10 |  | 3 | 0.13 |
|  | 11 to 20 |  | 3 | 0.13 |
|  | 21 to 50 |  | 2 | 0.08 |
|  | 50 to 500 |  | 7 | 0.30 |
|  | Total |  | 2,371 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 2,567 | 82.91 |
|  | 0.5 hectares to 1.0 hectares |  | 283 | 9.14 |
|  | 1 hectares to 5 hectares |  | 217 | 7.01 |
|  | 5 hectares to 10 hectares |  | 10 | 0.32 |
|  | 10 hectares to 50 hectares |  | 10 | 0.32 |
|  | More than 50 hectares |  | 9 | 0.29 |
|  | Total |  | 3,096 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 742 | 23.97 |
|  | 100 to 1000 |  | 766 | 24.74 |
|  | 1000 to 10000 |  | 1,286 | 41.54 |
|  | More than 10000 |  | 302 | 9.75 |
|  | Total |  | 3,096 | 100.00 |
| 9 | Number of encroached water bodies | No. | 5 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## WEST BENGAL

West Bengal located in Eastern India is bordered by five different states. Its capital Kolkata is often termed as the cultural capital of India. West Bengal offers a unique flavour to the richness of India with its synthesis of various languages, religions, customs, traditions, cuisines and lifestyle. It is bounded by the Himalayas in the North and the Bay of Bengal in the South.

West Bengal has 23 districts with a total geographical area of $88,752 \mathrm{~km}^{2}$ and a population of $91,276,115$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 7,47,480 water bodies have been enumerated in the State of


Santragachi Jheel West Bengal, out of which $96.3 \%(7,19,654)$ are in rural areas and the remaining $3.7 \%(27,826)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.


- $\quad 96.6 \%(7,22,126)$ water bodies are privately owned whereas the remaining $3.4 \%(25,354)$ are under public ownership. This reflects the dominance of private entities in ownership of water bodies. Distribution of water bodies by ownership status is shown in the next charts.

- $\quad 93.5 \%(6,98,944)$ water bodies are in use whereas rest $6.5 \%(48,536)$ are not in use on account of drying up, siltation, salinity, destroyed beyond repair and other reasons. Among 'in use' water bodies, a major proportion of water bodies are used in Pisciculture (85.9\%). Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of West Bengal, all the water bodies are man-made in nature. Out of these, $96.3 \%$ $(7,19,654)$ are located in rural areas whereas remaining $3.7 \%(27,826)$ are located in urban areas. Most of the man-made water bodies have original cost of construction up to Rs.1,00,000. State has not reported encroachment in any of the water bodies.


Gadiara in Howrah District

- Out of $7,47,480$ water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for $7,46,793$ water bodies. During reference year 2017-18, out of these $7,46,793$ water bodies, $54.1 \%(4,03,804)$ water bodies had fully filled up storage capacity, $31.9 \%(2,38,495)$ water bodies had storage capacity filled upto three fourth level, $10 \%(74,449)$ water bodies had storage capacity filled upto half level, $3.3 \%(24,997)$ water bodies had storage capacity filled upto
one fourth level whereas $0.7 \%(5,048)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of $7,46,793$ water bodies, $68 \%(5,07,719)$ water bodies are found to be filled up every year, $25 \%(1,86,737)$ are usually filled up, $7 \%(52,336)$ are rarely filled up and only 01 water body is never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of $7,47,480$ water bodies, $88.3 \%(6,60,040)$ have water spread area less than 0.5 hectares whereas, $9.6 \%(71,617)$ water bodies have water spread area between 0.5 hectares to 1.0 hectares. In terms of storage capacity, $87 \%(6,50,192)$ water bodies have storage capacity between 1,000 to 10,000 cubic meters whereas there are $8.7 \%(65,010)$ water bodies which have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'water spread area' and by 'storage capacity of water bodies'are shown in charts given:

\% distribution of WBs by storage capacity (in $\mathrm{Cu} . \mathrm{mtrs}$ )

- Key parameters of First Census of Water Bodies for the State of West Bengal are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 7,47,480 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 7,19,654 | 96.28 |
|  | Total Number of Water Bodies in Urban Areas | no. | 27,826 | 3.72 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 4,57,274 | 61.18 |
|  | Tanks |  | 7,585 | 1.01 |
|  | Lakes |  | 1,349 | 0.18 |
|  | Reservoirs |  | 2,80,585 | 37.54 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 610 | 0.08 |
|  | Others |  | 77 | 0.01 |
| b | Water Bodies with Private Ownership | no. | 7,22,126 | 96.61 |
| 2 | Water Bodies by area | no. |  |  |
|  | DPAP |  | 6,144 | 0.82 |
|  | Tribal |  | 1,282 | 0.17 |
|  | DDP |  | 17 | 0.00 |
|  | Flood Prone |  | 1,762 | 0.24 |
|  | Naxal affected area |  | 69 | 0.01 |
|  | Others |  | 7,38,206 | 98.76 |
|  | Total |  | 7,47,480 | 100.00 |
| 3 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 27,626 | 3.95 |
|  | Industrial |  | 11,218 | 1.60 |
|  | Pisciculture |  | 6,00,612 | 85.93 |
|  | Domestic/ Drinking |  | 59,488 | 8.51 |
|  | Total |  | 6,98,944 | 100.00 |
| 4 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 0 | 0.00 |
|  | Man Made |  | 7,47,480 | 100.00 |
| 5 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 337 | 0.69 |
|  | Construction |  | 59 | 0.12 |
|  | Siltation |  | 434 | 0.89 |
|  | Destroyed beyond repair |  | 326 | 0.67 |
|  | Salinity |  | 111 | 0.23 |
|  | Due to industrial effluents |  | 54 | 0.11 |
|  | Others |  | 47,215 | 97.28 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :--- | :--- | :--- | :--- | ---: |
| 6 | Distribution of Water Bodies as per status <br> of filling | no. |  |  |
|  | Filled up every year |  | $5,07,719$ | 67.99 |
|  | Usually filled up |  | $1,86,737$ | 25.01 |
|  | Rarely filled up |  | 52,336 | 1.01 |
|  | Never filled up |  | 1 | 0.00 |
|  | Total |  | $7,46,793$ | 100.00 |
|  | Distribution of Water Bodies by Water <br> Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | $6,60,040$ | 71,617 |
|  | 0.5 hectares to 1.0 hectares | 15,481 | 88.30 |  |
|  | 1 hectares to 5 hectares |  | 287 | 9.58 |
|  | 5 hectares to 10 hectares |  | 52 | 2.07 |
|  | 10 hectares to 50 hectares |  | 3 | 0.04 |
|  | More than 50 hectares |  | $7,47,480$ | 0.01 |
|  | Total |  |  | 100.00 |
|  | Distribution of Water Bodies by Storage | Cu. |  |  |
| 8 | Capacity (in Cu. Mtrs) |  |  |  |
|  | 0 to 100 | Mtrs |  | 875 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## ANDAMAN \& NICOBAR ISLANDS

The Union Territory (UT) is surrounded by emerald sea, lush green forest, mountains, scenic beauty, unpolluted corals, serene white sandy beaches and marine national park.

The UT has an area of $8,249 \mathrm{Km}^{2}$. It has 03 districts with a population of $3,80,581$ (as per 2011 Census).

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 3,528 water bodies have been enumerated in the UT of Andaman \& Nicobar Islands, out of which majority, i.e. $99.1 \%(3,497)$ are in rural areas and the remaining $0.9 \%$ (31) are in urban areas. $98.3 \%(3,469)$ of the water bodies are


A Pond in Campbellbay block of Nicobar District ponds as depicted from chart given below.


- $\quad 81.4 \%(2,871)$ are under private ownership whereas the remaining $18.6 \%(657)$ are under public ownership. By location, $0.48 \%$ (17) water bodies are located in tribal areas, $0.46 \%$ (16) are located in flood prone areas and the remaining $99.06 \%(3,495)$ water bodies are located in other areas.
- Out of 3,528 water bodies, $94.5 \%(3,334)$ water bodies are in use whereas rest $5.5 \%(194)$ are not in use on account of drying up, siltation, destroyed beyond repair, salinity and other reasons. Out of 'in use' water bodies, majority of them are used for irrigation followed by pisciculture. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- There are 3,489 man-made and 39 natural water bodies in the UT of Andaman \& Nicobar Islands. Out of 3,489 man-made water bodies, $99.4 \%(3,468)$ water bodies are located in rural areas and the remaining $0.6 \%$ (21) are located in urban areas. Out of 39 natural water bodies, 29 water bodies are located in rural areas and the remaining 10 are located in urban areas. Most of the man-made water bodies have original cost of construction upto Rs.50,000.
- Out of 3,528 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for


A pond in Diglipur block of North \& Middle Andaman District 3,485 water bodies. During reference year 2017-18, out of these 3,485 water bodies, $31.2 \%(1,087)$ water bodies had fully filled up storage capacity, $31.3 \%$ $(1,092)$ water bodies had storage capacity upto three fourth level, $23.8 \%$ ( 831 ) water bodies had storage capacity filled upto half level, $10.4 \%$ (361) water bodies had storage capacity filled upto one fourth level whereas $3.3 \%$ (114) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of these 3,485 water bodies, $53.9 \%(1,878)$ water bodies are found to be filled up every year, $33.7 \%(1,173)$ are usually filled up, $10.2 \%(357)$ are rarely filled up and $2.2 \%$ (77) are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.


- Out of all water bodies, 116 water bodies are covered in District Irrigation Plan/State Irrigation Plan out of which 113 are ponds. Out of 'in use' water bodies, $92.2 \%(3,073)$ are benefitting one (01) city/town, $7.7 \%$ (257) water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.1 \%$ (4) water bodies are benefitting more than five (05) cities/towns.
- State has reported encroachment in 59 water bodies, all of which are ponds. Out of all these 59 water bodies, the encroachment area can be assessed in 5 water bodies. All these 5 water bodies have more than $75 \%$ encroachment area.
- Out of 3,528 water bodies, the information on 'water spread area' was reported in 3,520 water bodies. Out of these 3,520 water bodies, $95.7 \%(3,369)$ of the water bodies have water spread area less than 0.5 hectares and $3.9 \%$ (137) have water spread area between 0.5 to 1.0 hectares. Distribution of water bodies by 'water spread area' is shown in charts given below.

- In terms of storage capacity, $40.5 \%(1,430)$ water bodies have storage capacity between 1,000 to 10,000 Cubic Meters whereas $0.2 \%$ (6) water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in charts given below.

- Key parameters of First Census of Water Bodies for the UT of Andaman \& Nicobar Islands are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 3,528 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 3,497 | 99.12 |
|  | Total Number of Water Bodies in Urban Areas | no. | 31 | 0.88 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 3,469 | 98.33 |
|  | Tanks |  | 6 | 0.17 |
|  | Lakes |  | 5 | 0.14 |
|  | Reservoirs |  | 5 | 0.14 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 26 | 0.74 |
|  | Others |  | 17 | 0.48 |
| b | Water Bodies with Private Ownership | no. | 2,871 |  |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 0 | 0.00 |
|  | Tribal |  | 17 | 0.48 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 16 | 0.45 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 3,495 | 99.06 |
|  | Total |  | 3,528 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 2,883 | 86.47 |
|  | Industrial |  | 3 | 0.09 |
|  | Pisciculture |  | 224 | 6.72 |
|  | Domestic/ Drinking |  | 193 | 5.79 |
|  | Recreation |  | 1 | 0.03 |
|  | Religious |  | 1 | 0.03 |
|  | Ground Water recharge |  | 5 | 0.15 |
|  | Others |  | 24 | 0.72 |
|  | Total |  | 3,334 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 39 | 1.11 |
|  | Man Made |  | 3,489 | 98.89 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 102 | 52.58 |
|  | Construction |  | 2 | 1.03 |
|  | Siltation |  | 16 | 8.25 |
|  | Destroyed beyond repair |  | 16 | 8.25 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Salinity |  | 3 | 1.55 |
|  | Due to industrial effluents |  | 1 | 0.52 |
|  | Others |  | 54 | 27.84 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 1,878 | 53.89 |
|  | Usually filled up |  | 1,173 | 33.66 |
|  | Rarely filled up |  | 357 | 10.24 |
|  | Never filled up |  | 77 | 2.21 |
|  | Total |  | 3,485 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 3,073 | 92.17 |
|  | 2 to 5 |  | 257 | 7.71 |
|  | 6 to 10 |  | 1 | 0.03 |
|  | 11 to 20 |  | 3 | 0.09 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 3,334 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 3,369 | 95.71 |
|  | 0.5 hectares to 1.0 hectares |  | 137 | 3.89 |
|  | 1 hectares to 5 hectares |  | 12 | 0.34 |
|  | 5 hectares to 10 hectares |  | 0 | 0.00 |
|  | 10 hectares to 50 hectares |  | 2 | 0.06 |
|  | More than 50 hectares |  | 0 | 0.00 |
|  | Total |  | 3,520 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 144 | 4.08 |
|  | 100 to 1000 |  | 1,948 | 55.22 |
|  | 1000 to 10000 |  | 1,430 | 40.53 |
|  | More than 10000 |  | 6 | 0.17 |
|  | Total |  | 3,528 | 100.00 |
| 9 | Number of encroached water bodies | no. | 59 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## CHANDIGARH

Chandigarh is located near the foothills of the Shivalik Range of the Himalayas in northwest India. It is known as one of the best experiments in urban planning and modern architecture in the twentieth century in India.

Chandigarh has a total Geographic area of $114 \mathrm{~km}^{2}$. As per the census of 2011, Chandigarh has a population of 10,55,450.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 188 water bodies have been enumerated, out of which $87.8 \%$ (165) are in urban areas and the remaining $12.2 \%$ (23) are in rural areas. All water bodies in Chandigarh


Sukhna Lake in Chandigarh are under public ownership.

- Majority of the water bodies are tanks followed by ponds and lakes as depicted from chart given below.

- All the enumerated water bodies of Chandigarh are in use. Among all these water bodies, $93.6 \%$ (176) are tanks, $4.8 \%$ (9) are ponds and the remaining $1.6 \%$ (3) are lakes. Majority of the water bodies i.e., $93.1 \%$ (175) are used for domestic/ drinking purpose in the Chandigarh. Remaining 13 water bodies are used for religious and other purposes.

- There are 6 natural and 182 man-made water bodies in Chandigarh. All natural water bodies are located in rural areas. Out of 182 man-made water bodies, $90.6 \%$ (165) water bodies are located in urban areas whereas $9.4 \%$ (17) are located in rural areas. Most of the man-made water bodies have original cost of construction between Rs. 10 Lakh to Rs. 50 Lakh.
- During reference year 2017-18, out of 188 water bodies, $93.7 \%$ (176) water bodies had fully filled up storage capacity, $3.7 \%$ (7) water bodies had storage capacity filled upto three fourth level, $1.6 \%$ (3) water bodies had


A pond in Khuda Jassu village of Chandigarh storage capacity filled upto half level, $0.5 \%$ (1) water bodies had storage capacity filled upto one fourth level whereas $0.5 \%$ (1) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of total water bodies (188), $2.1 \%$ (4) water bodies are found to be filled up every year, $94.7 \%$ (178) are usually filled up, $2.7 \%$ (5) are rarely filled up and $0.5 \%$ (1) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.



- Out of 188 'in use' water bodies, 187 are benefitting one (01) city/town and remaining one water body is fulfilling requirements of 2-5 cities/ towns. $97.3 \%$ (183) of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of 188 water bodies, $65.4 \%$ (123) water bodies have storage capacity between 100 to 1,000 Cubic Meters and majority of these water bodies are in urban areas. Distribution of storage capacity of water bodies is given in chart given below:

- Out of 188 water bodies in Chandigarh, none of the water bodies are reported to be encroached.
- Key parameters of First Census of Water Bodies for the Union Territory of Chandigarh are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 188 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 23 | 12.23 |
|  | Total Number of Water Bodies in Urban Areas | no. | 165 | 87.77 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 9 | 4.79 |
|  | Tanks |  | 176 | 93.62 |
|  | Lakes |  | 3 | 1.60 |
| b | Water Bodies with Private Ownership | no. | 0 | 0.00 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 0 | 0.00 |
|  | Tribal |  | 0 | 0.00 |
|  | DDP |  | 0 | 0.00 |
|  | Flood Prone |  | 0 | 0.00 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 188 | 100.00 |
|  | Total |  | 188 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Domestic/ Drinking |  | 175 | 93.09 |
|  | Religious |  | 2 | 1.06 |
|  | Ground Water recharge |  | 0 | 0.00 |
|  | Others |  | 11 | 5.85 |
|  | Total |  | 188 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 6 | 3.19 |
|  | Man Made |  | 182 | 96.81 |
| 4 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 4 | 2.13 |
|  | Usually filled up |  | 178 | 94.68 |
|  | Rarely filled up |  | 5 | 2.66 |
|  | Never filled up |  | 1 | 0.53 |
|  | Total |  | 188 | 100.00 |
| 5 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 187 | 99.47 |
|  | 2 to 5 |  | 1 | 0.53 |
|  | Total |  | 188 |  |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 6 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 183 | 97.34 |
|  | 0.5 hectares to 1.0 hectares |  | 2 | 1.06 |
|  | 1 hectares to 5 hectares |  | 2 | 1.06 |
|  | 5 hectares to 10 hectares |  | 0 | 0.00 |
|  | 10 hectares to 50 hectares |  | 0 | 0.00 |
|  | More than 50 hectares |  | 1 | 0.53 |
|  | Total |  | 188 | 100.00 |
| 7 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 2 | 1.06 |
|  | 100 to 1000 |  | 123 | 65.43 |
|  | 1000 to 10000 |  | 53 | 28.19 |
|  | More than 10000 |  | 10 | 5.32 |
|  | Total |  | 188 | 100.00 |
| 8 | Number of encroached water bodies | No. | 0 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## DELHI

Delhi, officially the National Capital Territory (NCT) of Delhi, is a city and a union territory of India, sprawled over the west bank of the river Yamuna. It is surrounded on three sides by Haryana and to the east, across the river Yamuna by Uttar Pradesh. Delhi is not only the largest commercial centre in northern India, but also the largest centre of small industries. Being a cosmopolitan city, all major festivals of India are celebrated here.

Delhi has 11 districts with area of $1,483 \mathrm{~km}^{2}$ and population of $1,67,53,235$ as per 2011 census.


A pond in West District

## Major findings of the census

A podin West Dist

- In $1^{\text {st }}$ census of water bodies, 893 water bodies have been enumerated, out of which $95.1 \%$ (849) are in rural areas and the remaining $4.9 \%$ (44) are in urban areas. $95.1 \%$ (849) are public owned whereas the remaining $4.9 \%$ (44) are under private ownership. Majority of the water bodies are ponds as depicted from chart given below.

- Out of 893 water bodies, $26.5 \%$ (237) water bodies are in use while $73.5 \%$ (656) water bodies are reported 'not in use' on account of drying up, industrial effluents and other reasons. Among 237 'in use' water bodies, $27.8 \%$ (66) water bodies are used for ground water recharge purpose whereas the remaining water bodies are used for recreation, religious and other purposes.

- There are 887 natural and 6 man-made water bodies in Delhi. Out of 887 natural water bodies, $95.4 \%$ (846) water bodies are located in rural areas whereas $4.6 \%$ (41) are located in urban areas. Out of 6 man-made water bodies, 3 waterbodies are located in rural areas whereas remaining 3 are located in urban areas. Out of all 'in use' water bodies, $47.3 \%$ (112) are benefitting one (01) city/town and $52.7 \%$ (125) water bodies are fulfilling requirements of 2-5 cities/towns.
- Out of 893 water bodies, the information on 'filled up


A lake in Central District storage capacity' and 'status of filling' was collected for 543 water bodies. During reference year 2017-18, out of these 543 waterbodies, $5.3 \%$ (29)water bodies had fully filled up storage capacity, $12.0 \%$ (65) water bodies had storage capacity filled upto three fourth level, $12.7 \%$ (69) water bodies had storage capacity filled upto half level, $11.8 \%$ (64) water bodies had storage capacity filled upto one fourth level whereas $58.2 \%$ (316) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 543 water bodies, $28.2 \%$ (153) are filled up every year, $28.7 \%$ (156) water bodies are usually filled up, $26.7 \%$ (145) are found to berarely filled up and $16.4 \%$ ( 89 ) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is given in the diagram given below.



- Out of 893 water bodies, the information on 'water spread area' was reported in 887 water bodies. Out of these 887 water bodies, $92.2 \%$ (818) of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, out of these 893 water bodies, $44.6 \%$ (398) water bodies have storage capacity between 0 to 100 cubic meters. Distribution of storage capacity of waterbodies is given in charts given
\% distribution of WBs by storage capacity (in Cu. mtrs)

- Out of 893 waterbodies, 216 waterbodies are reported to be encroached. These are 66 ponds, 1 tank and 149 other water bodies. Among the 158 water bodies whose encroachment area can be assessed, seven (7) are assessed to have less than $25 \%$ area under encroachment, nineteen (19) having encroachment area ranging between $25 \%$ to $75 \%$ and one hundred thirty two(132) have more than $75 \%$ encroachment area.
- Key parameters of First Census of Water Bodies for the State of Delhi are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 893 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 849 | 95.07 |
|  | Total Number of Water Bodies in Urban Areas | no. | 44 | 4.93 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 525 | 58.79 |
|  | Tanks |  | 4 | 0.45 |
|  | Lakes |  | 14 | 1.57 |
|  | Reservoirs |  | 0 | 0.00 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 1 | 0.11 |
|  | Others |  | 349 | 39.08 |
| b | Water Bodies with Private Ownership | no. | 44 | 4.93 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 29 | 3.25 |
|  | Flood Prone |  | 12 | 1.34 |
|  | Naxal affected area |  | 2 | 0.22 |
|  | Others |  | 850 | 95.18 |
|  | Total |  | 893 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Recreation |  | 2 | 0.84 |
|  | Religious |  | 4 | 1.69 |
|  | Ground Water recharge |  | 66 | 27.85 |
|  | Others |  | 165 | 69.62 |
|  | Total |  | 237 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 887 | 99.33 |
|  | Man Made |  | 6 | 0.67 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 77 | 11.74 |
|  | Construction |  | 90 | 13.72 |
|  | Siltation |  | 8 | 1.22 |
|  | Destroyed beyond repair |  | 1 | 0.15 |
|  | Salinity |  | 10 | 1.52 |
|  | Due to industrial effluents |  | 120 | 18.29 |
|  | Others |  | 350 | 53.35 |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 153 | 28.18 |
|  | Usually filled up |  | 156 | 28.73 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
|  | Rarely filled up |  | 145 | 26.70 |
|  | Never filled up |  | 89 | 16.39 |
|  | Total |  | 543 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 112 | 47.26 |
|  | 2 to 5 |  | 125 | 52.74 |
|  | Total |  | 237 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | no. |  |  |
|  | Less than 0.5 hectares |  | 818 | 92.22 |
|  | 0.5 hectares to 1.0 hectares |  | 38 | 4.28 |
|  | 1 hectares to 5 hectares |  | 29 | 3.27 |
|  | 5 hectares to 10 hectares |  | 1 | 0.11 |
|  | 10 hectares to 50 hectares |  | 1 | 0.11 |
|  | Total |  | 887 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 398 | 44.56 |
|  | 100 to 1000 |  | 48 | 5.38 |
|  | 1000 to 10000 |  | 271 | 30.35 |
|  | More than 10000 |  | 176 | 19.71 |
|  | Total |  | 893 | 100.00 |
| 9 | Number of encroached water bodies | no. | 216 | 24.19 |

[^5]
## JAMMU \& KASHMIR

Jammu \& Kashmir is located to the north of Himachal Pradesh \& Punjab and to the west of Ladakh. Jammu is known as the City of Temples \& offers plentiful sightseeing opportunities with its gardens, palaces, forts \& religious attractions. Kashmir Valley is famous for its meadows, lakes, high altitude passes, hill stations, Mughal Gardens, Dal Lake, Shikara Ride \& ancient religious sites.

As per Census 2011, Jammu \& Kashmir has a total population of $1,25,41,302$. The total geographical area of $J \& K$ is $2,22,236 \mathrm{~km}^{2}$.

## Major findings of the census



A pond in Rang village of Udhampur district of J \& K

- In $1^{\text {st }}$ census of water bodies, 9,765 water bodies have been enumerated in the State of Jammu \& Kashmir, out of which $99.2 \%(9,687)$ are in rural areas and the remaining $0.8 \%(78)$ are in urban areas. Majority of the water bodies are ponds as depicted from chart given below.

- $48.6 \%(4,749)$ are privately owned whereas the remaining $51.4 \%(5,016)$ are under public ownership. By location, 27 water bodies are located in flood prone areas and 1,144 water bodies are located in tribal areas as depicted in the chart below:

- Out of all water bodies, $76.7 \%(7,493)$ water bodies are in use whereas rest $23.3 \%(2,272)$ are not in use on account of drying up, destroyed beyond repair and other reasons. Out of 'in use' water bodies, a major proportion of water bodies are used in domestic/ drinking purpose followed by irrigation purpose. Percentage distribution of water bodies by type of use is shown in the diagram given below.

- In the State of Jammu \& Kashmir, there are $36 \%(3,519)$ natural and $64 \%(6,246)$ man-made water bodies. Out of 3,519 natural water bodies, $99.5 \%(3,502)$ are located in rural areas whereas remaining $0.5 \%(17)$ are located in urban areas. Out of 6,246 man-made water bodies, $99 \%(6,185)$ water bodies are located in rural areas and the remaining $1 \%$ (61) are located in urban areas. Most of the man-made water bodies have original cost of construction up to Rs.50,000/-.


A pond in Gulwal village of Samba district of J \& K

- $\quad$ Out of 9,765 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 5,913 water bodies. During reference year 2017-18, out of these 5,913 water bodies, $8.3 \%$ (490) water bodies had fully filled up storage capacity, $14.9 \%$ ( 883 ) water bodies had storage capacity filled upto three fourth level, $27.6 \%(1,630)$ water bodies had storage capacity filled upto half level, $26.6 \%(1,576)$ water bodies had storage capacity filled upto one fourth level whereas $22.6 \%(1,334)$ had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 5,913 water bodies, $14.4 \%$ ( 854 ) water bodies are found to be filled up every year, $21.2 \%(1,253)$ are usually filled up, $42.8 \%(2,528)$ are rarely filled up and $21.6 \%$ $(1,278)$ are never filled up. Percentage distribution of water bodies by 'status of filling' and 'filled up storage capacity' is shown in the diagram given below.

- Out of all water bodies, $1.2 \%$ (122) are covered in District Irrigation Plan/State Irrigation Plan. Among these $44.3 \%$ (54) are reservoirs, $31.1 \%$ (38) are ponds and the remaining $24.6 \%$ (30) are tanks and water conservation schemes/percolation tanks/check dams. Out of 'in use' water bodies, $93.0 \%(6,968)$ are benefitting one (01) city/town, $6.8 \%$ (510) water bodies are fulfilling requirements of 2-5 cities/ towns and the remaining $0.2 \%$ (15) water bodies are benefitting more
than five (05) cities/towns.State has reported encroachment in 103 water bodies out of all the enumerated water bodies, out of which 95 are ponds
- Out of 9,765 water bodies, the information on 'water spread area' was reported in 9,759 water bodies. Out of these 9,759 water bodies, $98.4 \%(9,602)$ of the water bodies have water spread area less than 0.5 hectares whereas, $1.1 \%$ (104) water bodies have water spread area between 0.5 hectares to 1.0 hectares and the remaining $0.5 \%(53)$ water bodies have more than 1 hectare water spread area.
- In terms of storage capacity, $74.1 \%(7,238)$ water bodies have storage capacity between 0 to 100 Cubic Meters. Distribution of water bodies by 'storage capacity of water bodies' is shown in chart given below:
\% distribution of WBs by storage capacity (in Cu. mtrs)

- Key parameters of First Census of Water Bodies for the State of Jammu \& Kashmir are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 9,765 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 9,687 | 99.20 |
|  | Total Number of Water Bodies in Urban Areas | no. | 78 | 0.80 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 5,256 | 53.82 |
|  | Tanks |  | 179 | 1.83 |
|  | Lakes |  | 37 | 0.38 |
|  | Reservoirs |  | 441 | 4.52 |
|  | Water Conservation Schemes/ Percolation tanks / Check dams |  | 29 | 0.30 |
|  | Others |  | 3,823 | 39.15 |
| b | Water Bodies with Private Ownership | no. | 4,749 | 48.63 |
|  | Water Bodies by area | no. |  |  |
|  | DPAP |  | 318 | 3.26 |
|  | Tribal |  | 1,144 | 11.72 |
|  | DDP |  | 73 | 0.75 |
|  | Flood Prone |  | 27 | 0.28 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 8,203 | 84.00 |
|  | Total |  | 9,765 | 100.00 |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 719 | 9.60 |
|  | Industrial |  | 12 | 0.16 |
|  | Pisciculture |  | 97 | 1.29 |
|  | Domestic/ Drinking |  | 5,986 | 79.89 |
|  | Recreation |  | 19 | 0.25 |
|  | Religious |  | 56 | 0.75 |
|  | Ground Water recharge |  | 129 | 1.72 |
|  | Others |  | 475 | 6.34 |
|  | Total |  | 7,493 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 3,519 | 36.04 |
|  | Man Made |  | 6,246 | 63.96 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 1,051 | 46.26 |
|  | Construction |  | 24 | 1.06 |
|  | Siltation |  | 20 | 0.88 |
|  | Destroyed beyond repair |  | 214 | 9.42 |
|  | Salinity |  | 1 | 0.04 |
|  | Due to industrial effluents |  | 1 | 0.04 |
|  | Others |  | 961 | 42.30 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 854 | 14.44 |
|  | Usually filled up |  | 1,253 | 21.19 |
|  | Rarely filled up |  | 2,528 | 42.75 |
|  | Never filled up |  | 1,278 | 21.61 |
|  | Total |  | 5,913 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 6,968 | 92.99 |
|  | 2 to 5 |  | 510 | 6.81 |
|  | 6 to 10 |  | 13 | 0.17 |
|  | 11 to 20 |  | 1 | 0.01 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 1 | 0.01 |
|  | Total |  | 7,493 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | Ha. |  |  |
|  | Less than 0.5 hectares |  | 9,602 | 98.39 |
|  | 0.5 hectares to 1.0 hectares |  | 104 | 1.07 |
|  | 1 hectares to 5 hectares |  | 45 | 0.46 |
|  | 5 hectares to 10 hectares |  | 2 | 0.02 |
|  | 10 hectares to 50 hectares |  | 1 | 0.01 |
|  | More than 50 hectares |  | 5 | 0.05 |
|  | Total |  | 9,759 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu . Mtrs |  |  |
|  | 0 to 100 |  | 7,238 | 74.12 |
|  | 100 to 1000 |  | 2,202 | 22.55 |
|  | 1000 to 10000 |  | 305 | 3.12 |
|  | More than 10000 |  | 20 | 0.20 |
|  | Total |  | 9,765 | 100.00 |
| 9 | Number of encroached water bodies | No. | 103 |  |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

## PUDUCHERRY

The Union Territory of Puducherry consists of four regions, namely Puducherry, Karaikal, Mahe and Yanam. All the four regions are at different locations, geographically separated from each other. The people, culture, festivals together contribute to the lively ambiance of Puducherry.

Puducherry has a total Geographic area of $490 \mathrm{~km}^{2}$ including all the four regions. According to the 2011 census, UT had a population of $12,47,953$.

## Major findings of the census

- In $1^{\text {st }}$ census of water bodies, 1,171 water bodies have been enumerated, out of which 89.7\%


A pond in Karaikal district $(1,050)$ are in rural areas and the remaining $10.3 \%$ (121) are in urban areas. Out of all water bodies, $95.9 \%(1,123)$ are public owned whereas the remaining $4.1 \%$ (48) are under private ownership.

- Majority of the water bodies are ponds followed by lakes and tanks as depicted from chart given below.

- $\quad$ Out of 1,171 water bodies, $58.7 \%$ (687) water bodies are in use whereas rest $41.3 \%$ (484) water bodies are not in use on account of drying up, siltation and other reasons. Among all the 'in use' water bodies, $92.7 \%$ (637) are ponds, $4.7 \%$ (32) are lakes and the remaining $2.6 \%$ (18) are tanks, water conservation schemes/ percolation tanks/check dams, reservoirs etc. Out of 'in use' water bodies, $43.1 \%$ (296) water bodies are used for ground water recharge in Puducherry. Percentage distribution of 'in use' water bodies by type of use is shown in the diagram given below.

- There are 1,168 natural and 3 man-made water bodies in Puducherry. Out of 1,168 natural water bodies, $89.9 \%$ $(1,050)$ water bodies are located in rural areas whereas $10.1 \%$ (118) are located in urban areas. All the three man-made water bodies are located in urban areas and two of them have original cost of construction between Rs. 10 Lakh to Rs. 50 Lakh.
- Out of 1,171 water bodies, the information on 'filled up storage capacity' and 'status of filling' was collected for 1,166 water bodies. During reference year 2017-18, out of these 1,166 water bodies, $20.3 \%$ (237) water bodies


A lake in Puducherry district had fully filled up storage capacity, $45.2 \%$ (527) water bodies had storage capacity filled upto three fourth level, $30.6 \%$ (357) water bodies had storage capacity filled upto half level, $1.5 \%$ (17) water bodies had storage capacity filled upto one fourth level whereas $2.4 \%$ (28) had nil/negligible storage capacity. Based on the criteria of filling up of storage capacity during last 5 years, out of 1,166 water bodies, $34.9 \%$ (407) water bodies are found to be filled up every year, $47.1 \%$ (549) are usually filled up, $15.7 \%$ (183) are rarely filled up and $2.3 \%$ (27) are never filled up. Percentage distribution of water bodies by status of filling and filled up storage is shown in the diagrams given below.



- Out of 1,171 water bodies, 13 are covered in District Irrigation Plan/State Irrigation Plan. These 13 water bodies comprise of 5 ponds and 8 lakes. Out of 'in use' water bodies, $97.1 \%$ (667) are benefitting one ( 01 ) city/town and $2.9 \%$ (20) water bodies are fulfilling requirements of 2 or more cities/towns.
- Out of all water bodies, $52.2 \%$ (611) of the water bodies have water spread area less than 0.5 hectares. In terms of storage capacity, $65.5 \%$ (767) water bodies have storage capacity between 1,000 to 10,000 cubic meters whereas $15.7 \%$ (184) water bodies have storage capacity more than 10,000 cubic meters. Distribution of water bodies by 'water spread area' and 'storage capacity' is shown in charts given below:

- Out of 1,171 water bodies, 34 water bodies are reported to be encroached. These are 29 ponds and 5 lakes. Among the water bodies whose encroachment area can be assessed, 13 are assessed to have less than $25 \%$ area under encroachment, 02 having encroachment area ranging between $25 \%$ to $75 \%$ and 07 have more than $75 \%$ encroachment area.
- Key parameters of First Census of Water Bodies for the UT of Puducherry are given in the Annexure.

Annexure

| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Total Number of Water Bodies | no. | 1,171 |  |
|  | Total Number of Water Bodies in Rural Areas | no. | 1,050 | 89.67 |
|  | Total Number of Water Bodies in Urban Areas | no. | 121 | 10.33 |
| a | Total Number of Water Bodies by type | no. |  |  |
|  | Ponds |  | 976 | 83.35 |
|  | Tanks |  | 44 | 3.76 |
|  | Lakes |  | 140 | 11.96 |
|  | Reservoirs |  | 6 | 0.51 |
|  | Water Conservation Schemes/ Percolation tanks/ Check dams |  | 4 | 0.34 |
|  | Others |  | 1 | 0.09 |
| b | Water Bodies with Private Ownership | no. | 48 | 4.10 |
|  | Water Bodies by area | no. |  |  |
|  | Flood Prone |  | 1 | 0.09 |
|  | Naxal affected area |  | 0 | 0.00 |
|  | Others |  | 1,170 | 99.91 |
|  | Total |  | 1,171 |  |
| 2 | Water Bodies by type of use | no. |  |  |
|  | Irrigation |  | 15 | 2.18 |
|  | Industrial |  | 0 | 0.00 |
|  | Pisciculture |  | 2 | 0.29 |
|  | Domestic/ Drinking |  | 122 | 17.76 |
|  | Recreation |  | 0 | 0.00 |
|  | Religious |  | 20 | 2.91 |
|  | Ground Water recharge |  | 296 | 43.09 |
|  | Others |  | 232 | 33.77 |
|  | Total |  | 687 | 100.00 |
| 3 | Natural/ Man Made Water Bodies | no. |  |  |
|  | Natural |  | 1,168 | 99.74 |
|  | Man Made |  | 3 | 0.26 |
| 4 | Water Bodies Not in use due to reasons | no. |  |  |
|  | Dried up |  | 2 | 0.41 |
|  | Construction |  | 0 | 0.00 |
|  | Siltation |  | 18 | 3.71 |
|  | Destroyed beyond repair |  | 0 | 0.00 |
|  | Salinity |  | 0 | 0.00 |
|  | Due to industrial effluents |  | 465 | 95.88 |
|  | Others |  | 485 | 100.00 |


| S.No. | Parameter | Unit | Value | Percentage to Total * |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Distribution of Water Bodies as per status of filling | no. |  |  |
|  | Filled up every year |  | 407 | 34.91 |
|  | Usually filled up |  | 549 | 47.08 |
|  | Rarely filled up |  | 183 | 15.69 |
|  | Never filled up |  | 27 | 2.32 |
|  | Total |  | 1,166 | 100.00 |
| 6 | Distribution of Water Bodies by number of city/ town benefitted | no. |  |  |
|  | 1 |  | 667 | 97.09 |
|  | 2 to 5 |  | 16 | 2.33 |
|  | 6 to 10 |  | 4 | 0.58 |
|  | 11 to 20 |  | 0 | 0.00 |
|  | 21 to 50 |  | 0 | 0.00 |
|  | 50 to 500 |  | 0 | 0.00 |
|  | Total |  | 687 | 100.00 |
| 7 | Distribution of Water Bodies by Water Spread Area | На. |  |  |
|  | Less than 0.5 hectares |  | 611 | 52.18 |
|  | 0.5 hectares to 1.0 hectares |  | 375 | 32.02 |
|  | 1 hectares to 5 hectares |  | 116 | 9.91 |
|  | 5 hectares to 10 hectares |  | 65 | 5.55 |
|  | 10 hectares to 50 hectares |  | 3 | 0.26 |
|  | More than 50 hectares |  | 1 | 0.09 |
|  | Total |  | 1,171 | 100.00 |
| 8 | Distribution of Water Bodies by Storage Capacity (in Cu. Mtrs) | Cu. <br> Mtrs |  |  |
|  | 0 to 100 |  | 163 | 13.92 |
|  | 100 to 1000 |  | 57 | 4.87 |
|  | 1000 to 10000 |  | 767 | 65.50 |
|  | More than 10000 |  | 184 | 15.71 |
|  | Total |  | 1,171 | 100.00 |
| 9 | Number of encroached water bodies | No. | 34 | 2.90 |

*: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

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


[^0]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

[^1]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

[^2]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

[^3]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places

[^4]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

[^5]:    *: Due to rounding off of the decimal places, the percentages may not add upto 100 at certain places.

