

“Watershed-level governance and management framework in a pilot catchment in Anekal Taluk”

MYRADA KOLAR PROJECT

Supported by “Frank Water” in Collaboration with “Beyond the Boundary”

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BACKGROUND



Clean water is necessary for drinking and sanitation, providing for crops, livestock and industries, creating sustainable ecosystem on which all life depends. To understand the current situation/status of the water resources in Anekal taluk Frank Water (FW) and MYRADA agreed to collect ground level data by conducting domestic survey and agriculture survey, and also through the Focused Group Discussions (FGD).

This report may be useful for taking decisions on water resource development and management at different levels-from communities to wider sections of society and also helpful for future projects.

01

Project aim is to support local communities and the corporate sector, to contribute good water governance and achieve good water, sanitation, and hygiene (wash) services and water stewardship and also bring water awareness for the Anekal people by conducting water awareness programs and also planning to work on water resources.

Key partners of Frank Water are NGOs like MYRADA and the Foundation for Ecological Security (FES). The Advanced Center for Water Resources Development and Management (ACWADAM) has been involved as a workshop partner. Additional stakeholders also took part in the project are hub partner BALA VIKASA and knowledge partner center for social and environmental innovation (ATREE).

Activities :

- » Domestic water supply data was collected from Town Municipal Council and further data was collected from survey of 200 households.
- » Agriculture water resource data was initially collected from agriculture department and later covered 16 villages (150 households) by conducting survey.
- » FGDs were conducted to get data on water sources along with other demographical information.

KARNATAKA



BENGALURU URBAN



ANEKAL TALUK

ACTIVITIES

Field visit - Mugalur Lake, (rejuvenated by MYRADA Hosur Project)

Mr. John, Program Coordinator, UK, Ms. Praveena and Mr. Sachin Tiwari (India) from Frank Water visited on 16th January, 2023.

Mugalur Site Visit (Tank)

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Mugalur Site Visit (Plantation)



AI DUAL CAMERA
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02.1

WORK SHOP

On 13th of February, 2023 and 30th of March, 2023 technical workshops were organized by Frank Water with the BtB (Beyond The Boundary) project partners and stakeholders. Purpose of the workshop was to share knowledge and provide feedback to the technical interventions.

Intermediary workshop held on 13.02.2023



Workshop held on 30.03.2023



02.2



Percolation Tank (Anugondanahalli, Hoskote Taluk)



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FIELD VISIT

On 14th of February, 2023 Frank Water, MYRADA and DHI team visited a few places of Malur Watershed to understand MYRADA's programs on soil and water conservation, also visited DoddaKere and Haragadde lakes in Anekal taluk.

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02.3

ANEKAL TALUK

GEOGRAPHICAL AREA : 53000 Hectares

Cities/Towns/Urban	8
Villages	230
City Municipal Council	1
Town Municipal Council	5
Hoblies	5
Grama panchayat	28
Population	~ 7 Lakhs
Rural / Urban	~ 4.5 Lakhs / ~2.5Lakhs
Geographical Area	530 Sq kms (53000 Hec)



Source : Agriculture department
Anekal, 2017

Land Use	Area In Hectares
Forest Area	2215
Land Not Available For Cultivation	24429
Cultivable Waste	1577
Permanent Pasture	1552
Trees and Groves	2381
Fallow Land	9530
Area Sown	11316

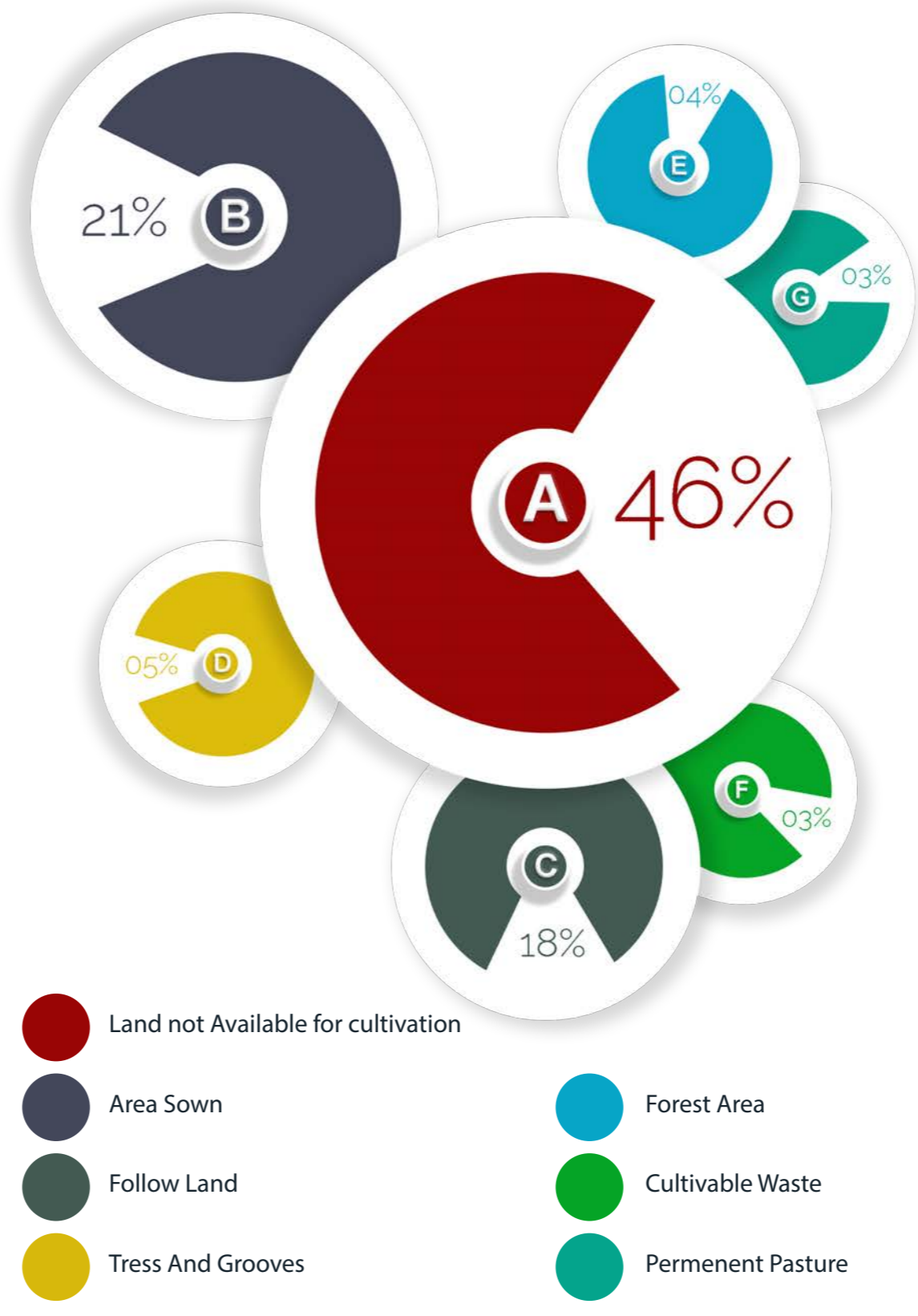


Chart showing the land classification

03

03.1

INDUSTRIAL INFORMATION

Factories	Numbers
Garments	40
Textiles	270
Chemicals	54
Food and Intoxicants	113
Leather	163
Paper and Printing	137
Rubber and Plastic	133
Wood Works	157
Enterprises engaged in trade, hotel and transport activities	350
Automobiles	280
Electricals and Electronics	137

Source : Agriculture department
Anekal , 2017

03.2

04

BASELINE SURVEY

Domestic Household Survey - Urban

SI No	Ward Name	Number of households
1	WARD 1	21
2	WARD 2	24
3	WARD 4	07
4	WARD 5	05
5	WARD 6	18
6	WARD 7	01
7	WARD 8	07
8	WARD 10	06
9	WARD 13	01
10	WARD 14	04
11	WARD 15	18
12	WARD 16	09
13	WARD 18	15
14	WARD 19	01
15	WARD 22	05
16	WARD 23	13
17	WARD 24	45



Surveying in Urban



Sl No	Name of the village	Number of households Surveyed	Total no. of households in the Village	Geographical area (Ha)
1	Byagadadenahalli	07	150.55	272
2	Bidaragere	12	274.79	218
3	Channena Agrahara	10	129.5	95
4	Chikkahagade	10	162.71	185
5	Gudnahalli	10	258	194
6	Hompalaghatta	09	152.07	131
7	Janata colony	05	67.32	171
8	Kammasandra Agrahara	10	186	153
9	Kunmadivala	14	93.15	103
10	Karpur	11	206.76	327
11	Muthagatti	11	210.3	628
12	Samandur	08	750.84	540
13	Sunavara	03	203.86	262
14	Telagarahalli	10	106.09	151
15	Vanakanahalli	08	179.77	326
16	Venkateshwara	12	226.29	308
TOTAL			3358	4064

DATA COLLECTED FROM FOCUS GROUP DISCUSSION

Particulars	Details
No of Wards	2
Source of domestic water supply	Municipality
Number of households those have Tap connection	350
Number of households do not have Tap connection	250
Water quality	Not in drinking standard
Total Water tanker (5000 liters) is Used for month	3
Cost per tanker of water	600/-
Water supply frequency from municipal corporation	Once in 15 days
Water quality	Salty
Waste water disposal system	Directly connected to Doddakere (Located near town)
Depth of the lake	Approximately 3 m
Lake Area	25 Acre
Lake is used for	Fishery, Livestock and Ground Water Recharge
Current status of lake	Connected Sewage Water, Drain waste, Solid waste

Domestic And Agriculture Household Survey - Rural

Data collection through survey - Rural



05





DATA COLLECTED FROM FGD KAMMASANDRA AGRAHARA (RURAL)

Particulars	Details
Name of the village	Kammasandra Agrahara
Name of the gram panchayath	Byagadadenahalli
Total households in the village	150
Geographical area	180 hectares
Dry land	80 hectares
Irrigated land	100 hectares
Average land holding	0.6 hectares
Major crops	Ragi, Maize, Beans ,cabbage,tomato
Open wells	1
Total number of borewells	40
Average depth of borewells	1200-1400
Capacity of pump installed	15-16 hp
Average water yield	1-2"
Source of drinking/domestic water supply	Panchayath borewell water
Market place	Chandapura, Anekal, Huskur fruit market
Lake situated in the village	Kammasandra Agrahara lake
Depth of the lake	40'
Area of the lake	28.3 Ha
Current situation/status of the Lake	Fishery, Livestock and Ground Water Recharge



AWARNNESS PROGRAM

Awarness to farmers on efficient use of water - Kaval Hosahalli (Rural)

On 18th of May awareness program was conducted, where in about 60 persons attended the program and 4 resource persons interacted with community on topics like domestic water use, water management in agriculture and its efficient use were discussed. Also visited Kaval Hosahalli lake and Kalyani with the community.





Water And Soil Awareness Program

Different interventions in watershed management for productivity enhancement were discussed.



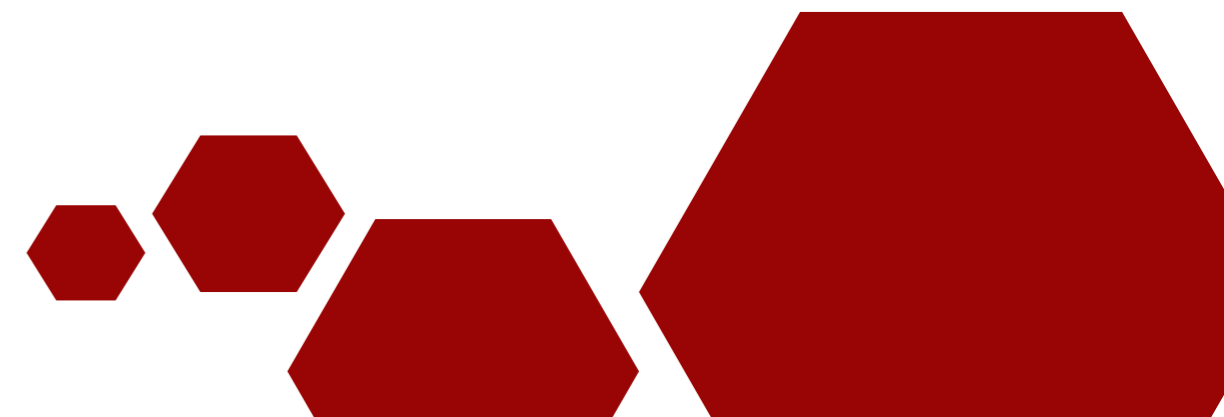
Awareness to farmers on efficient use of water in Avadadenahalli



Awareness to community on efficient use of water and soil in Thattanahalli

WATER AWARENESS PROGRAM IN BIDARAGERE (RURAL)

Particulars	Details
Name of the village	Bidaragere
Name of the gram panchayath	Karpur
Total households in the village	260
Geographical area	275 Ha
Dry land	150 Ha
Irrigated land	80 Ha
Average land holding	0.6 Ha
Major crops	Ragi, Maize, Beans, Cabbage, Tomato
Open wells	-
Total number of borewells	28
Average depth of borewells	1200-1400
Capacity of pumps installed	15-16 hp
Average water yield	1-2"
Source of water supply for drinking/domestic	Panchayath borewell water
Market place	Chandapura ,Anekal ,Huskur fruit market
Lake situated in the village	Bidaragere lake, Thimmanna lake
Depth of the lake	30'
Area of the lake	25 Ha
Current status/situation of Lake	Fishery, Livestock and Ground Water Recharge

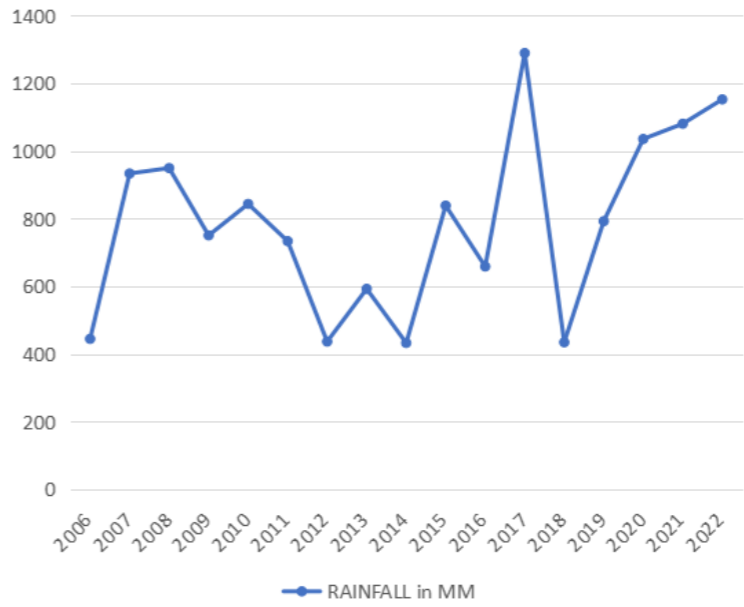


Water And Soil Awareness Program In Bidaragere (Rural)



RAINFALL

Annual normal rainy days (2015 onwards)	42 Days
Rain gauge stations	4 Numbers
Actual annual rainfall from 2006 to 2022 (mms)	Actual annual rainfall from 2006 to 2022 (mms)
2006	445
2007	934
2008	950
2009	751
2010	844
2011	734
2012	437
2013	593
2014	433
2015	839
2016	659
2017	1290
2018	435
2019	793
2020	1036
2021	1081
2022	1153



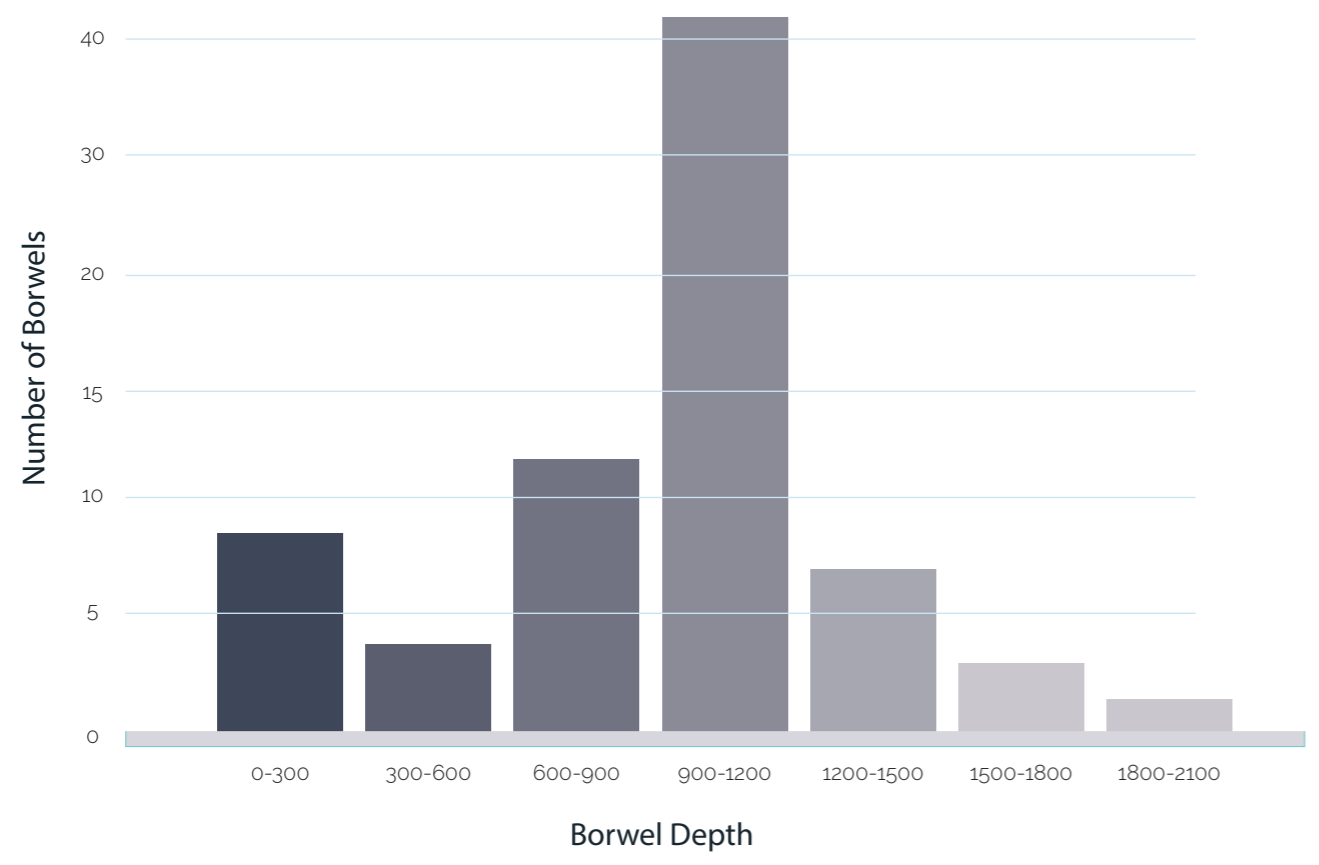
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TOTAL NUMBER OF BOREWELLS AND OPEN WELLS IN 16 VILLAGES OF SURVEY CONDUCTED

08

SL NO	Description	MoU	Quantity
1	Borewells	Numbers	79
2	Functioning	Numbers	67
3	Not functioning	Numbers	12
4	Average yield of water	Inches	1-2
5	Open wells	Numbers	3
6	Functioning	Numbers	1
7	Dried	Numbers	2
8	Depth of open wells	Feet	50 - 60

BOREWELL DEPTH RANGES IN 16 VILLAGES OF SURVEY CONDUCTED

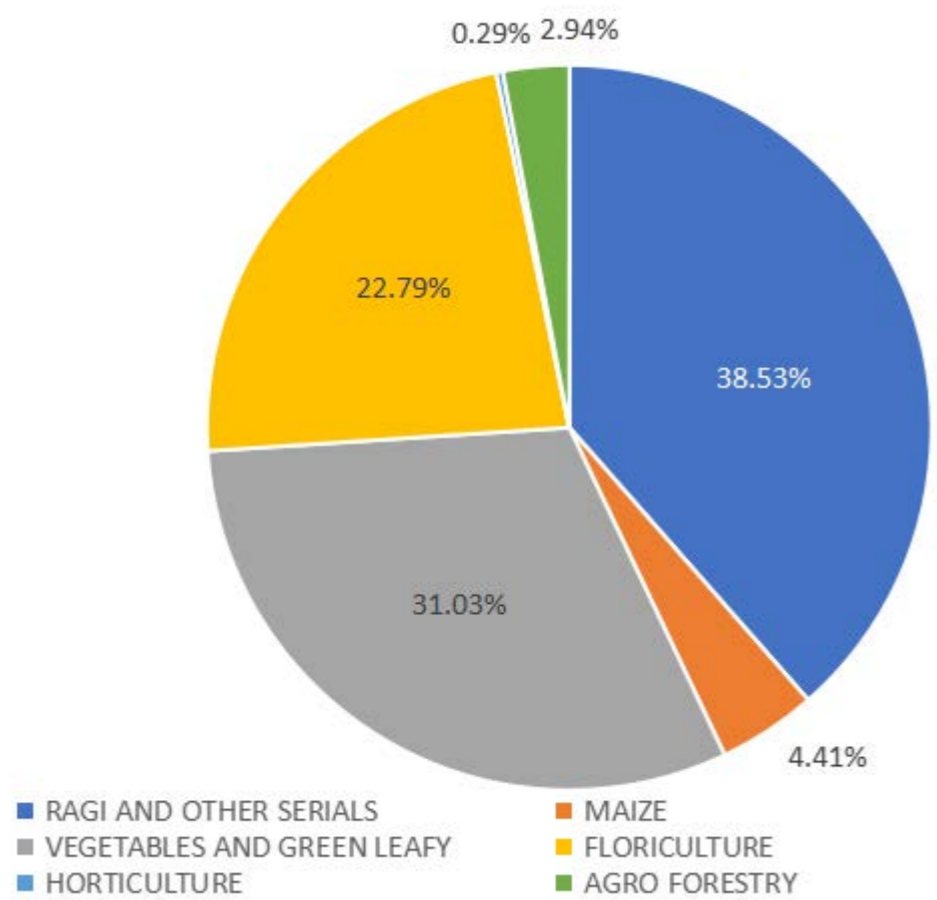


Water Scenario Based on Survey Analysis In Anekal Taluk



- » Most of the places depends on borewell water and the amount of water required for domestic purpose is 181.2 MLD(Million litres per day)
- » 25 years ago (1995), the groundwater table was in the range of 50-80 feet deep.
- » After 10 years(2005) it was in the range 300-600 feet deep.
- » 2015-2020 it was in the range of 900 -1200 feet deep .
- » Currently up to 1800 feet deep.
- » The number of borewells failures are increasing (1: 3)

Crops cultivated area(acres) by 150 households in 16 villages, 2023



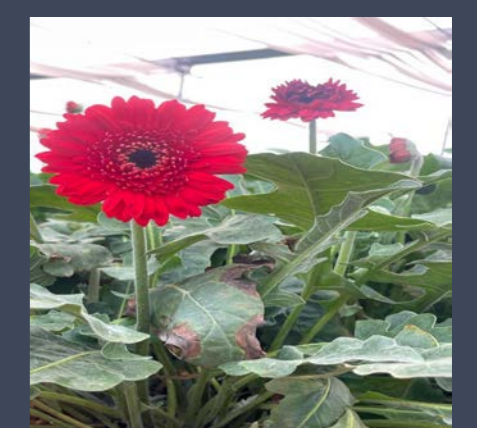
PERCENTANGE OF LAND USED FOR AGRICULTURE

Crop	Area (Acres)
Ragi and other serials	131
Maize	15
Vegetables and green leaves	105.5
Floriculture	77.5
Sericulture	1
Agro forestry	10
Others	5

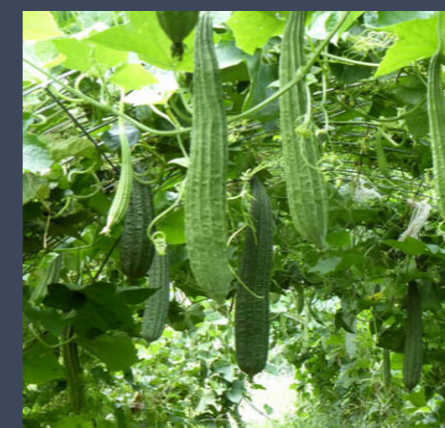
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AGRICULTURE/ HORTICULTURE

Crop	Area (in Hectares)
Paddy	83
Maize	494
Ragi	4144
Tur	73
Horse gram	116
Avare (Lablab)	490
Cowpea	43
Niger Seed	17
Mulberry	380
Rose	280
Marie Gold	60
Vegetable	2146
Fruits	560
Food grains	5453



Gerbera, Chrysanthemums, Ridge gourd, Button rose



Usage Of Chemical Fertilizers

Fertilizer	Quantity in Tons
Nitrogen	5757
Phosphorus	2884
Potash	1007



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Livestock Population (nos)

Livestocks	Numbers
Cattle	40100
Indigenous and Cross breed	5050/35050
Buffalos	1158
Sheep	27893
Indigenous and Cross breed	24872/3021
Goat	8090
Pigs	9042
Indigenous and Cross breed	600/8442
Rabbits	480
Dogs	9484
Poultry	1799277

Livestock Of 150 Households In 16 Villages

Livestocks	Numbers	Water Requirement (LIT) /Day Per Animal
Cattle (cross breed)	231	75
Cattle (local breed)	69	70
Goat	65	15-20
Sheep	120	15-20
Buffaloes	5	80-100

- » Quantity of water required for livestock (490 nos) per day is 27000 liters.(average requirement 55 liters per animal)
- » Total livestock in Anekal taluk 94,866, therefore volume of water required is around 5.2 MLD.

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DODDAKERE LAKE, ENTRANCE OF THE LAKE WATER SAMPLE REPORT CHEMICAL TESTS

Test Parameter	Units	Results	Maximum Acceptable Limit As Per Is:10500-2012	Maximum Permissible Limits In The Absence Of Alternate Source As Per Is:10500-2012	Test Method
Colour	Hz	20	5.00	15.0	IS:3025(P-04)-1983 RA-2012
pH value	---	7.48	6.5 - 8.5	No relaxation	IS:3025(P-11)-1983 RA-2012
Turbidity	NTU	0.9	1.0	5.0	IS:3025(P-10)-1984 RA-2012
Conductivity	µS/cm	1306.0	---	---	IS:3025(P-14)-1984 RA-2012
Total Dissolved Solids	mg/L	779.0	500	2000	IS:3025(P-16)-1984 RA-2003
Total Alkalinity as CaCO3	mg/L	295.8	200	600	IS:3025(P-23)-1986 RA-2003
Total Hardness as CaCO3	mg/L	339.5	200	600	IS:3025(P-21)-1983 RA-2014
Calcium as Ca	mg/L	62.0	75	200	IS:3025(P-40)-1991 RA-2009
Magnesium as Mg	mg/L	44.2	30	100	IS:3025(P-46)-1994 RA-2014
Chloride as Cl	mg/L	280.2	250	1000	IS:3025(P-32)-1984 RA-2009
Sulphate as SO4	mg/L	79.5	200	400	APHA ,4500 SO4-F 23rd Edition
Nitrates as NO3	mg/L	41.3	45	No relaxation	IS:3025(P-34)-1988 RA-2009
Fluoride as F	mg/L	0.32	1.0	1.5	APHA 4500-F 23rd Edition
Iron as Fe	mg/L	0.59	1.0	No relaxation	IS:3025(P-53)-2009 RA-2014
Residual free chlorine	mg/L	ND	0.2	1.0	IS:3025(P-26)-1986 RA-2009
BOD for 3 days at 270C	mg/L	5.9			IS:3025(P-44)-1993 RA-2009
Chemical Oxygen Demand as O2	mg/L	16.1			APHA,5220 B 23rd Edition

DODDAKERE LAKE, CENTRE OF THE LAKE WATER SAMPLE REPORT CHEMICAL TESTS

Test Parameter	Units	Results	Maximum Acceptable Limit As Per Is:10500-2012	Maximum Permissible Limits In The Absence Of Alternate Source As Per Is:10500-2012	Test Method
Colour	Hz	19.0	5.00	15.0	IS:3025(P-04)-1983 RA-2012
pH value	---	7.37	6.5 - 8.5	No relaxation	IS:3025(P-11)-1983 RA-2012
Turbidity	NTU	0.6	1.0	5.0	IS:3025(P-10)-1984 RA-2012
Conductivity	µS/cm	1386.0	---	---	IS:3025(P-14)-1984 RA-2012
Total Dissolved Solids	mg/L	831.0	500	2000	IS:3025(P-16)-1984 RA-2003
Total Alkalinity as CaCO3	mg/L	316.2	200	600	IS:3025(P-23)-1986 RA-2003
Total Hardness as CaCO3	mg/L	397.7	200	600	IS:3025(P-21)-1983 RA-2014
Calcium as Ca	mg/L	69.8	75	200	IS:3025(P-40)-1991 RA-2009
Magnesium as Mg	mg/L	53.5	30	100	IS:3025(P-46)-1994 RA-2014
Chloride as Cl	mg/L	285.0	250	1000	IS:3025(P-32)-1984 RA-2009
Sulphate as SO4	mg/L	68.0	200	400	APHA ,4500 SO4-F 23rd Edition
Nitrates as NO3	mg/L	34.5	45	No relaxation	IS:3025(P-34)-1988 RA-2009
Fluoride as F	mg/L	0.16	1.0	1.5	APHA 4500-F 23rd Edition
Iron as Fe	mg/L	0.37	1.0	No relaxation	IS:3025(P-53)-2009 RA-2014
Residual free chlorine	mg/L	ND	0.2	1.0	IS:3025(P-26)-1986 RA-2009
BOD for 3 days at 270C	mg/L	5.5			IS:3025(P-44)-1993 RA-2009
Chemical Oxygen Demand as O2	mg/L	16.1			APHA,5220 B 23rd Edition

DODDAKERE LAKE WATER SAMPLE REPORT - MICRO BIOLOGICAL TEST

Test Parameter	Units	Results	Test Method
Escherichia coli	100 ml	Present	IS : 1622 : 1981 RA 2019
Total Coliforms	100 ml	Present	IS : 1622 : 1981 RA 2019
Algae	100 ml	Present	IS : 1622 : 1981 RA 2019

Remarks: The collected sample does **not meet the permissible limits** as per IS 10500:2012 for the above microbiological tests.

Ward: 5 BOREWELL WATER SAMPLE REPORT

Test Parameter	Units	Results	Maximum Acceptable Limit as per IS:10500-2012	Maximum Permissible Limits In The Absence of Alternate Source as per IS:10500-2012	Test Method
Colour	Hz	<2.0 (ND)	5.00	15.0	IS:3025(P-04)-1983 RA-2012
pH value	---	6.92	6.5 - 8.5	No relaxation	IS:3025(P-11)-1983 RA-2012
Turbidity	NTU	<0.5(ND)	1.0	5.0	IS:3025(P-10)-1984 RA-2012
Conductivity	µS/cm	3370.0	---	---	IS:3025(P-14)-1984 RA-2012
Total Dissolved Solids	mg/L	1910.0	500	2000	IS:3025(P-16)-1984 RA-2003
Total Hardness as CaCO ₃	mg/L	1237.5	200	600	IS:3025(P-21)-1983 RA-2014
Calcium as Ca	mg/L	336.0	75	200	IS:3025(P-40)-1991 RA-2009
Magnesium as Mg	mg/L	95.0	30	100	IS:3025(P-46)-1994 RA-2014
Chloride as Cl	mg/L	646.0	250	1000	IS:3025(P-32)-1984 RA-2009
Sulphate as SO ₄	mg/L	72.1	200	400	APHA ,4500 SO ₄ -F 23rd Edition
Nitrates as NO ₃	mg/L	45.0	45	No relaxation	IS:3025(P-34)-1988 RA-2009
Fluoride as F	mg/L	0.34	1.0	1.5	APHA 4500-F 23rd Edition
Iron as Fe	mg/L	0.67	1.0	No relaxation	IS:3025(P-53)-2009 RA-2014
Residual free chlorine	mg/L	ND	0.2	1.0	IS:3025(P-26)-1986 RA-2009
TOTAL ALKALINITY AS CaCO ₃	mg/l	514.48	200	600	IS:3025(P-23)-1986 RA-2003

Remarks: The collected Sample **does not meet to permissible Limits** as Per IS 10500:2012 For the above Physio- chemical tests.

MICROBIOLOGICAL TEST

Test Parameter	Unit	Results	LIMITS AS PER IS: 10500- 2012	Test Method
Escherichia coli	100 ml	Present	Absent	IS : 15185 :2016
Total Coliforms	100 ml	Absent	Absent	IS : 15185 :2016

Remarks: The collected sample does not meet the permissible limits as per IS 10500:2012 for the above microbiological tests.

Description: Greenish yellow colour liquid having characteristic odour.

HARAGADDE LAKE WATER SAMPLE REPORT

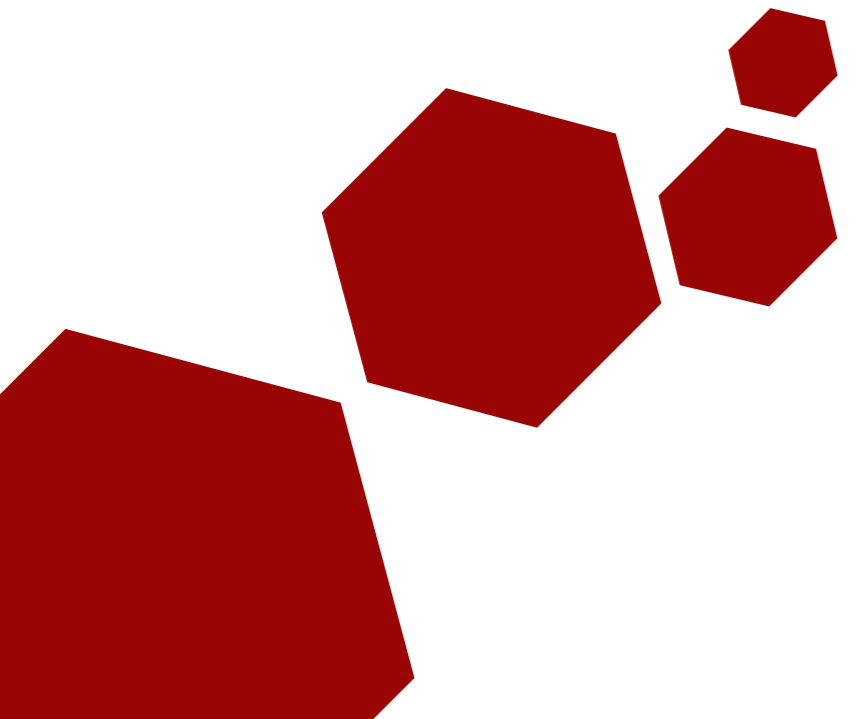
Test Parameter	Unit	Results	Maximum Permissible Limits In The Absence of Alternate Source as per IS:10500-2012	Test Method
Colour	Hz	15.0	15.0	IS:3025(P-04)-1983 RA-2012
pH value	---	7.38	No relaxation	IS:3025(P-11)-1983 RA-2012
Turbidity	NTU	0.8	5.0	IS:3025(P-10)-1984 RA-2012
Conductivity	μS/cm	1053.0	---	IS:3025(P-14)-1984 RA-2012
Total Dissolved Solids	mg/L	635.0	2000	IS:3025(P-16)-1984 RA-2003
Total Hardness as CaCO ₃	mg/L	287.1	600	IS:3025(P-21)-1983 RA-2014
Calcium as Ca	mg/L	83.6	200	IS:3025(P-40)-1991 RA-2009
Magnesium as Mg	mg/L	19.0	100	IS:3025(P-46)-1994 RA-2014
Chloride as Cl	mg/L	167.0	1000	IS:3025(P-32)-1984 RA-2009
Sulphate as SO ₄	mg/L	88.5	400	APHA ,4500 SO ₄ -F 23rd Edition
Nitrates as NO ₃	mg/L	45.6	No relaxation	IS:3025(P-34)-1988 RA-2009
Fluoride as F	mg/L	0.30	1.5	APHA 4500-F 23rd Edition
Iron as Fe	mg/L	0.66	No relaxation	IS:3025(P-53)-2009 RA-2014
Residual free chlorine	mg/L	ND	1.0	IS:3025(P-26)-1986 RA-2009
BOD for 3 days at 27°C	mg/L	6.2	-	IS:3025(P-44)-1993 RA-2009
Chemical Oxygen Demand as O ₂	mg/L	19.6	-	APHA,5220 B 23rd Edition
Total Alkalinity as CaCO ₃	mg/L	247.0	600	IS:3025(P-23)-1986 RA-2003

Remarks: The collected Sample does not meet to permissible Limits in the Absence of Alternate Source.

MICROBIOLOGICAL TEST

Test Parameter	Units	Results	Test Method
Escherichia coli	100 ml	Present	IS : 1622 : 1981 RA 2019
Total Coliforms	100 ml	Present	IS : 1622 : 1981 RA 2019
Algae	100 ml	Present	IS : 1622 : 1981 RA 2019

Remarks: The collected sample does **not meet the permissible limits** as per IS 10500:2012 for the above microbiological tests.



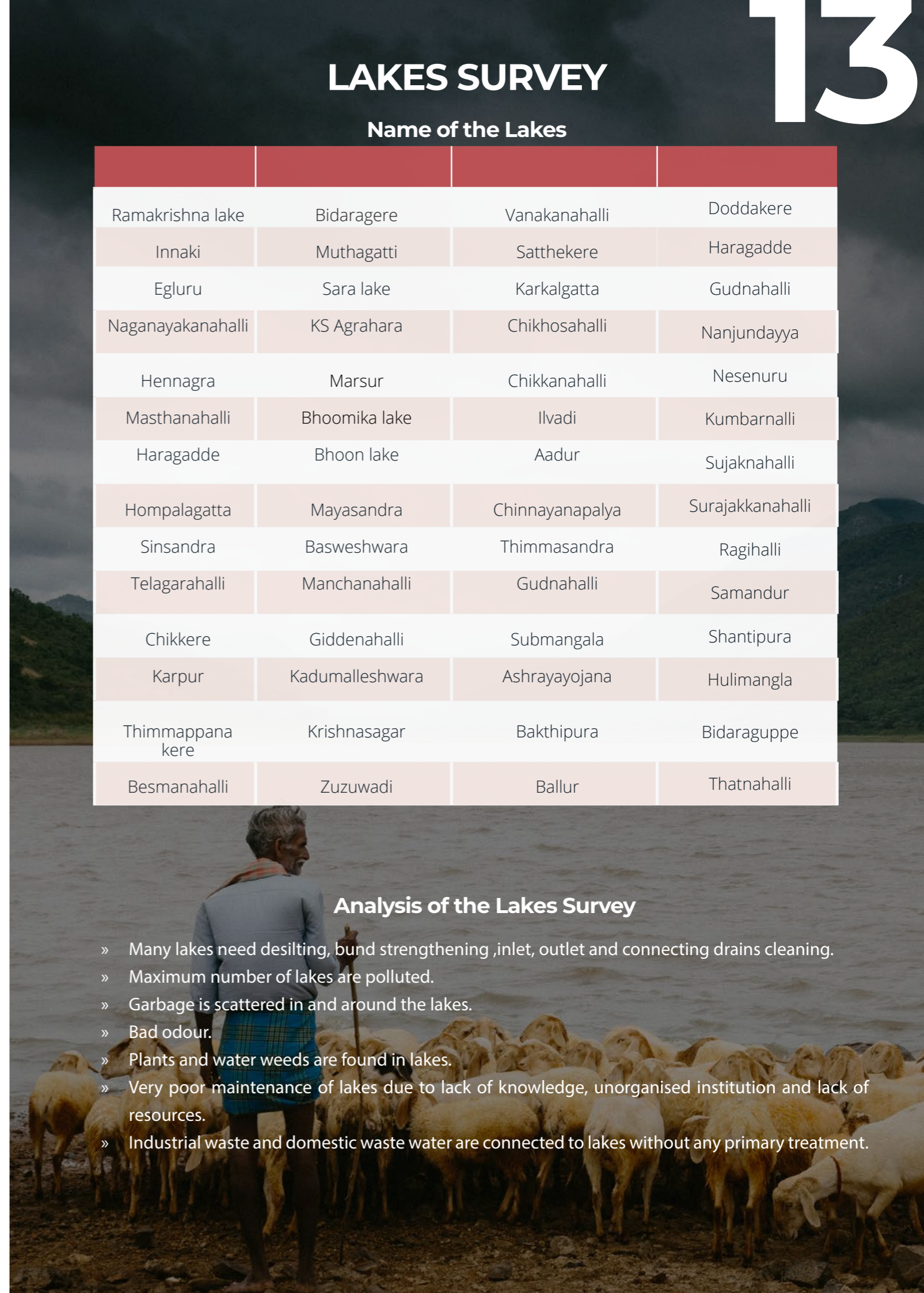
LAKES SURVEY

Name of the Lakes

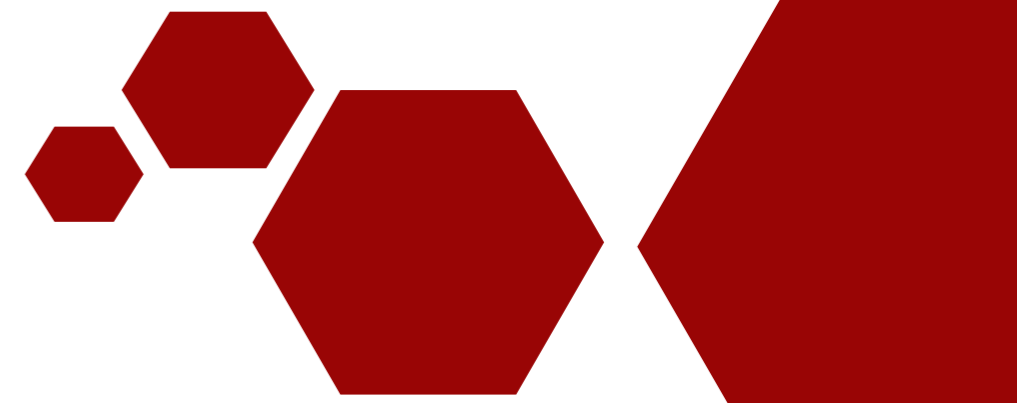
Ramakrishna lake	Bidaragere	Vanakanahalli	Doddakere
Innaki	Muthagatti	Satthekere	Haragadde
Egluru	Sara lake	Karkalgatta	Gudnahalli
Naganayakanahalli	KS Agrahara	Chikhosahalli	Nanjundayya
Hennagra	Marsur	Chikkanahalli	Nesenuru
Masthanahalli	Bhoomika lake	Ilvadi	Kumbarnalli
Haragadde	Bhoon lake	Aadur	Sujaknahalli
Hompalagatta	Mayasandra	Chinnayanapalya	Surajakkanahalli
Sinsandra	Basweshwara	Thimmasandra	Ragihalli
Telagarahalli	Manchanahalli	Gudnahalli	Samandur
Chikkere	Giddenahalli	Submangala	Shantipura
Karpur	Kadumalleshwara	Ashrayayojana	Hulimangla
Thimmappanahalli	Krishnasagar	Bakthipura	Bidaraguppe
Besmanahalli	Zuzuwadi	Ballur	Thatnahalli

Analysis of the Lakes Survey

- » Many lakes need desilting, bund strengthening ,inlet, outlet and connecting drains cleaning.
- » Maximum number of lakes are polluted.
- » Garbage is scattered in and around the lakes.
- » Bad odour.
- » Plants and water weeds are found in lakes.
- » Very poor maintenance of lakes due to lack of knowledge, unorganised institution and lack of resources.
- » Industrial waste and domestic waste water are connected to lakes without any primary treatment.



PRESENT STATUS OF THE LAKES



MAJOR CHALLENGES FACED BY FARMERS IN ANEKAL TALUK



- » Erratic and uneven rainfall .
- » Marginal and small farmers are not able to practice new interventions, technologies
- » Traditional method of cultivation practices exists in wider area due to small land holding and financial limitation as well as high risk of returns.
- » Timely unavailability of agricultural inputs and implements for cultivation.
- » Lack of knowledge and decision making in farming community for irrigation scheduling and crop water requirement.
- » Due to degradation of land use resulted in reducing productivity and income.
- » Lack of awareness on natural resource management.
- » Over exploitation of ground water due to drastic increase in number of tube wells with improper crop planning and water management.
- » Difficult to assess the crop water requirement, leading to poor crop planning and water management.
- » Farmers are interested in cultivation of vegetables because of more demand in market and assured returns, so irrigated area is drastically increasing and creating stress on ground water.
- » Lakes are neglected by concerned authority and also by community and it has been polluted.

SCOPE FOR WATER RESOURCE DEVELOPMENT IN URBAN AND RURAL AREAS OF ANEKAL TALUK

URBAN WATER RESOURCE DEVELOPMENT TANK ECO SYSTEM RESTORATION

- » Periodical removal of scattered waste in and around the lake and maintenance.
- » Fencing around the tank to prevent dumping of solid waste.
- » Treatment of sewage water before entering tank
- » Desilting, repair of inlet and outlet, drains cleaning and strengthening of bunds.
- » Beautification of lake
- » Capacity building of community and organised local institution or community for regular maintenance of the lakes.

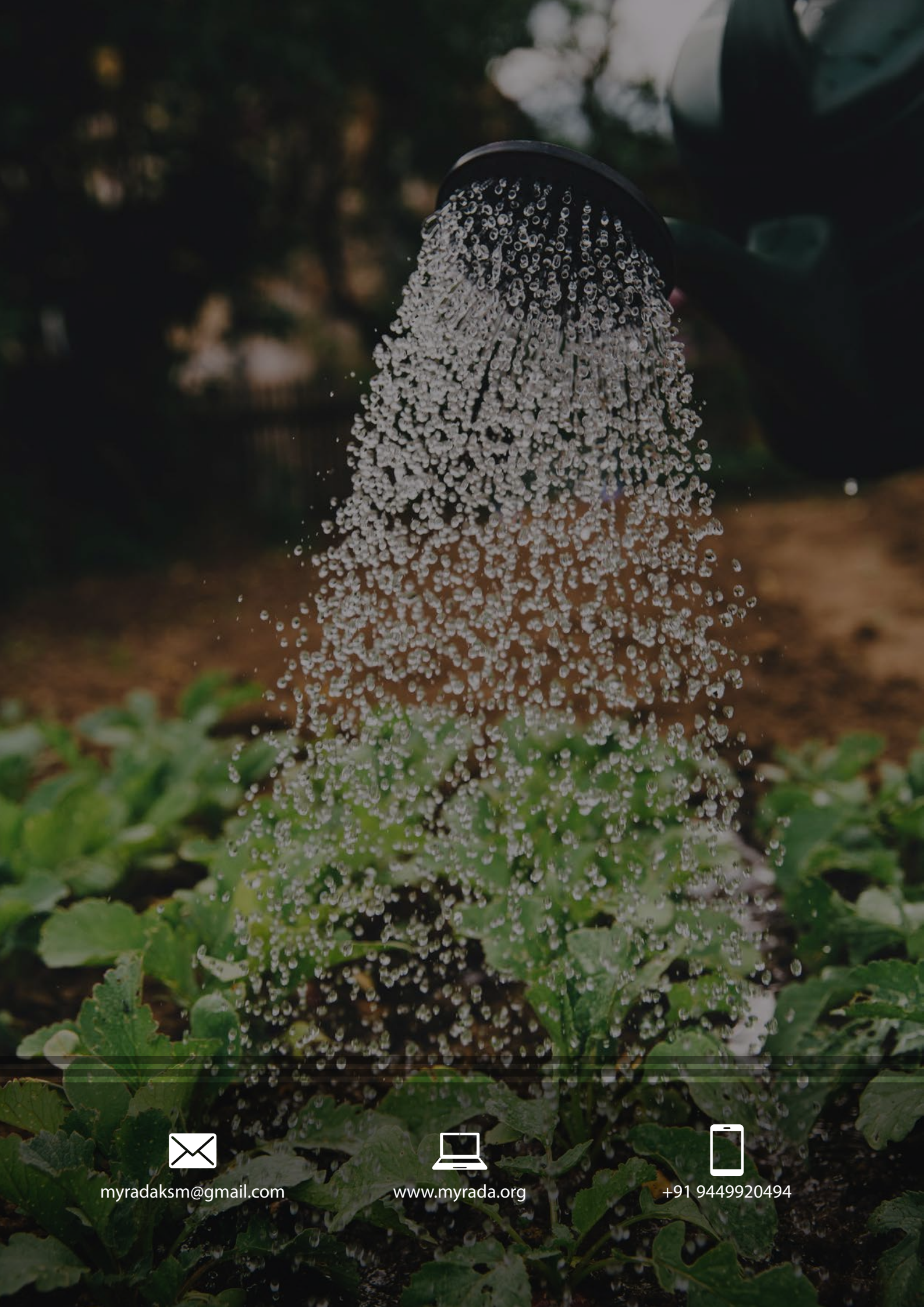


RESOURCE DEVELOPMENT IN AGRICULTURE

SUPPLY SIDE INTERVENTIONS: WATER AND SOIL CONSERVATION STRUCTURES

DEMAND SIDE INTERVENTIONS

- » Watershed/Catchment area treatment to prevent lake siltation and soil and water conservation and on farm soil and water management
- » Soil testing, Balanced fertilizer and integrated nutrient management.
- » Promotion of Micro Irrigation.
- » Farmer Field School
- » Agroforestry promotion
- » Horticulture plantation.
- » Training to Existing Community Based Organisations (CBOs)
- » Training to farmers on watershed concept
- » Mechanization promotion through Agri Business Centers (ABC)
- » Livelihood promotion for landless and vulnerable families
- » Conservation of natural resources.
- » Drainage line treatment
- » Bio-diversity and Conservation
- » Farm ponds/water storage structures
- » Irrigation/Percolation tank
- » Check dam
- » Well recharge pitst
- » Tank rejuvenation



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