



3rd District Level Steering Committee Meeting WASCA 28 August 2020

Tiruvannamalai District
DRDA- Tiruvannamalai



Steps in Presentation

1. Overview of WASCA and Composite Water Resource Management Plan
2. Progress Report
3. Model GP Presentation
4. Climate Resilient Plans
5. Proposed Action Plan
6. Action Points for discussion
7. Photographs

Water Security and Climate Adaptation in Rural India (2019-22)

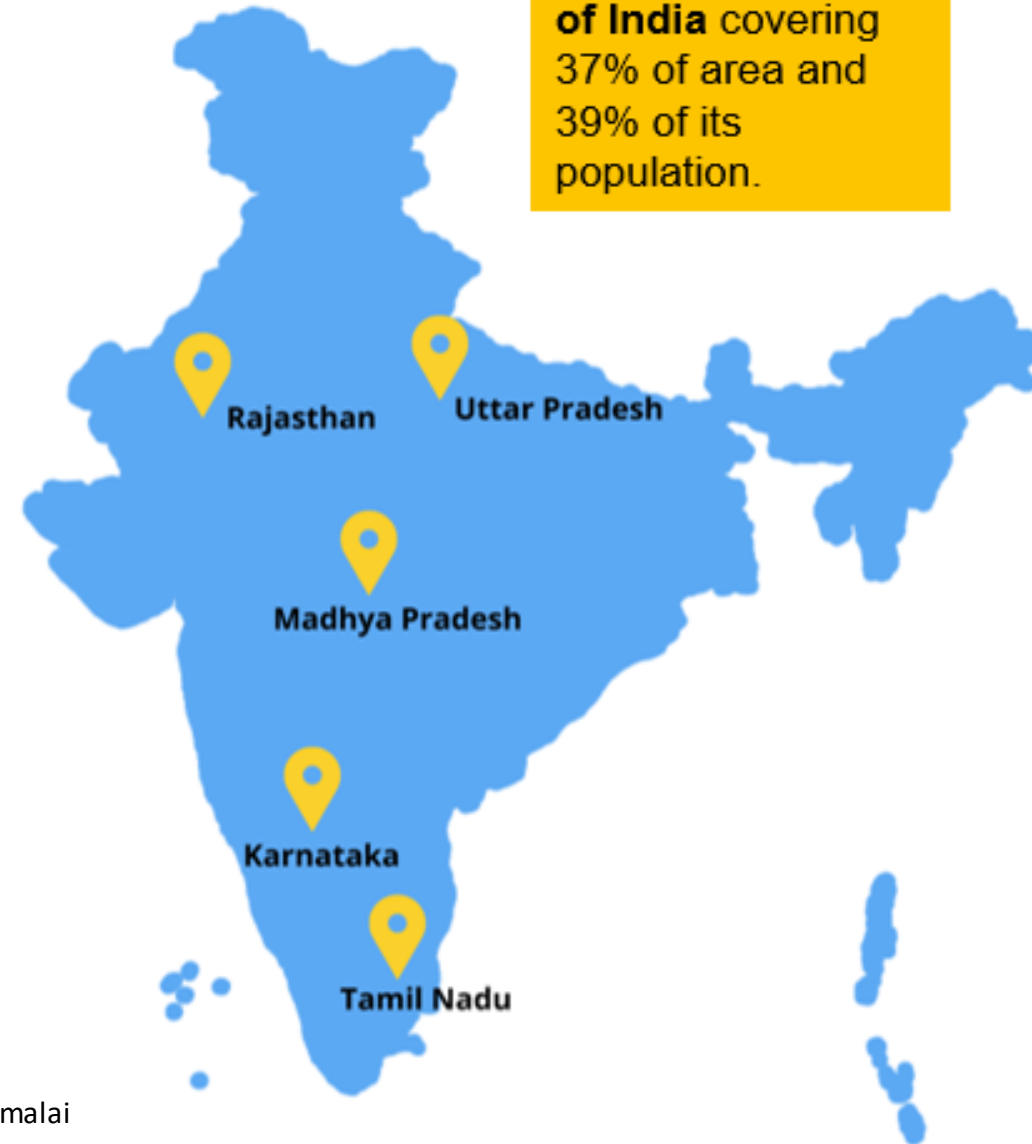
*In cooperation with
Ministry of Rural Development & Ministry of Jal Shakti, India*

Module Objective

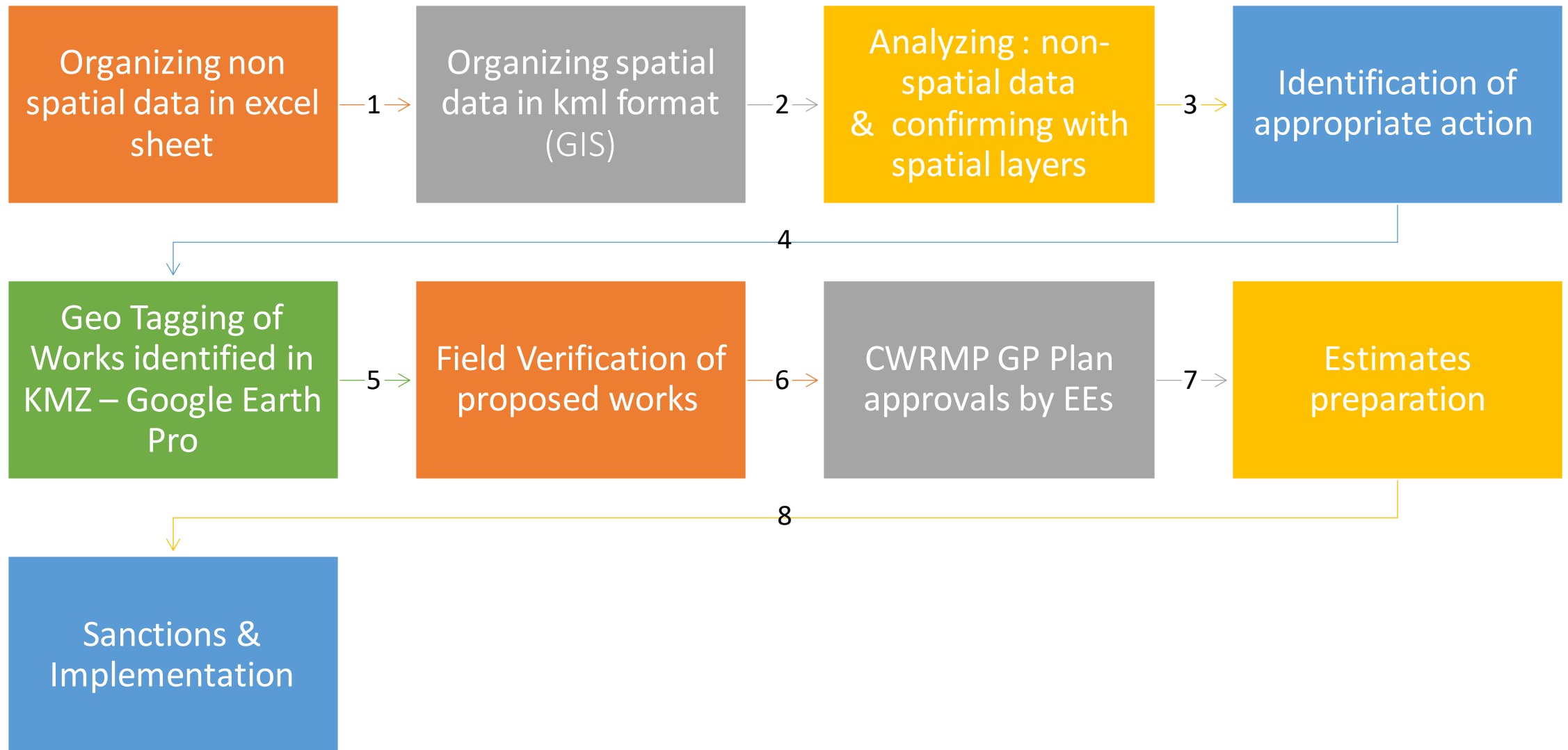
Water resource management is enhanced through an integrated approach at national, state and local level with regards to water security and climate adaptation in rural areas.

- Output 1** → Improving existing **planning and financing** mechanisms
- Output 2** → Developing **climate-resilient water management** measures
- Output 3** → Strengthening **cooperation with private sector**
- Output 4** → Increasing the **productivity and income of small farmers** through climate-resilient and water-efficient management models.

5 biggest states of India covering 37% of area and 39% of its population.



Key CWRMP Steps in Tiruvannamalai





1.0 Non-Spatial Data collection

Village Data

- Summary of Village Data
- Socio Economic Profile
- MGNREGS Profile

Climate Profile

- Rainfall profile
- Evapo-transmission
- Soil Moistures

Land Details

- Land Classification
- Watershed and Micro Watershed
- Soil Resources
- Micronutrients
- Soil Physical Parameters
- Soil Profile
- Forest Resources

2.0 Spatial Data Collection

Bhuvan 2 D:

- Location Map
- Satellite Map
- Water Resources Map
- Watershed Map
- Terrian Map

State Portal (Bhuvan)

- Erosion Map
- Salt Affected Map
- Geomorphology Map
- Lineaments Map
- Ground Water Prospectus Map
- Land Use Land Cover Map
 - Waste Lands Map

Other Bhuvan Portals

- MGNREGA Assets

3.0 Non-Spatial Data collection: Water Budget

Water Resources-Supply

- Catchment Classification
- Existing Water Harvesting Structures
- Natural Drainage Lines / Systems
- Canal Net Work

Water Uses

- Drinking Water Sources
- Irrigation Facilities – Surface Water
- Extraction of Water for irrigation
- Water use practices in Irrigation

Water Quality

- Chemical Contamination
- Bacterial Contamination
- Grey Water Generation

Water Demand

- Agriculture Water Demand
- Livestock Water Demand
- Drinking Water Demand
- Industry Water Demand

Water Balance

- Water Demand
- Water Budget

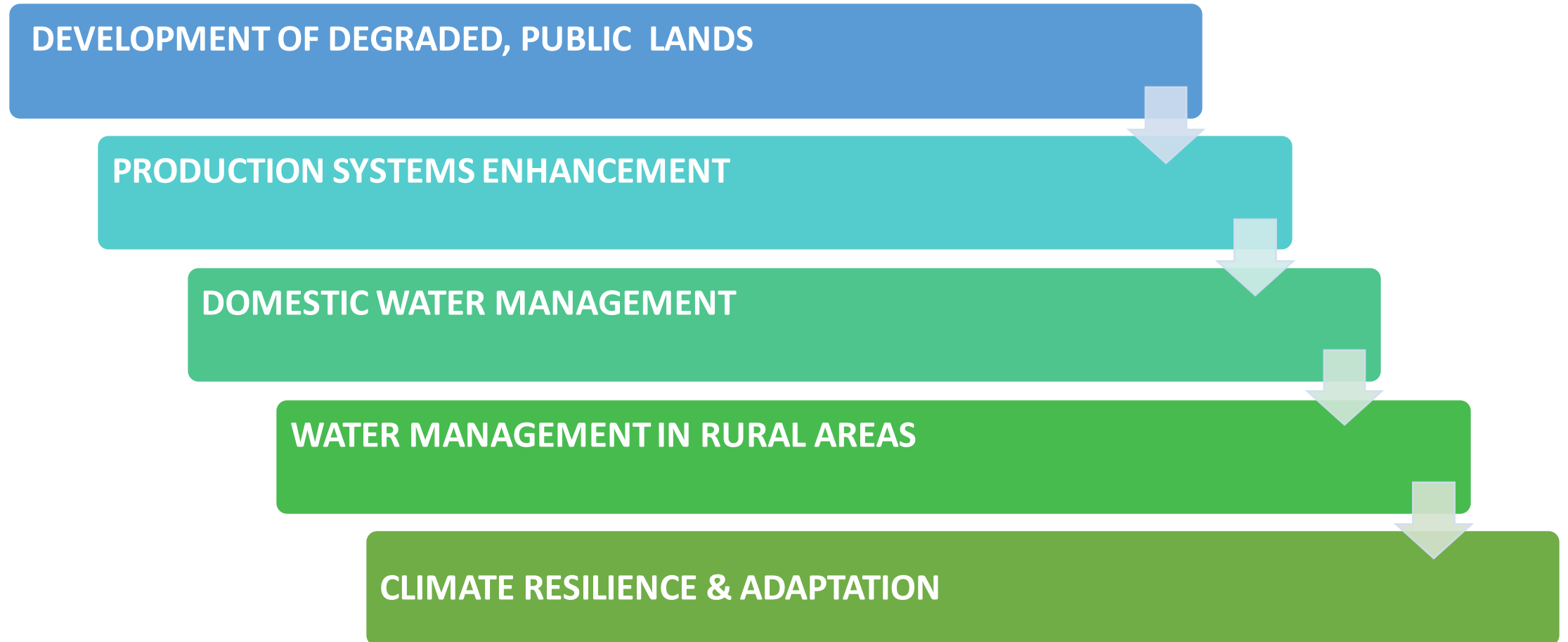
4.1 GP Plan Preparation: Parameters to identify key water challenges

S NO	Parameter	S NO	Parameter
1	Socio Economic Profile	11	Existing Drainage Networks (First order / second order drains etc)
2	Rainfall	12	Canal Network
3	Temperature	13	Drinking water
4	Evapotranspiration	14	Irrigation
5	Soil Moisture	15	Means of Water Extraction
6	Land Use	16	Water Application practices for Irrigation
7	Forest Resources and Vegetative Cover	17	Chemical Contaminants
8	Soil Profile and Soil Resources	18	Bacterial and Other Contaminants
9	Surface Water Run-Off	19	Assessment of Grey Water Generation
10	Existing Water Harvesting Structures	20	Water Demand and Water Budget

4.2 Nine-Fold Classification: Run-Off : GIS Layers linkage

Nine Fold Classification	Type of Run-off	Reason for type of Run Off	Thematic Area
Forest	Good (HR)	Degraded forests, slopes	LULC
Area under Non Agri Use	Good (HR)	No area for infiltration (built up area, road, drainage lines, water bodies)	LULC
Barren uncultivable land	Good (HR)	Poor Infiltration, slopes, degraded	Waste land, salt affected area
Grazing Lands	Ave (AR)	Middle slopes, medium infiltration	LULC, Geo GW prospects
Tree Crops	Ave (AR)	Low infiltration	LULC, Geo Morphology
Culturable Waste Lands	Ave (AR)	Low infiltration	LULC, Geo Morphology
Fallow Lands	BR (LR)	low infiltration, gentle slopes	LULC, Geo Morphology / GW
Current Fallow Lands	BR (LR)	Medium infiltration, gentle slopes	LULC, GM/ GW Prospects
Unirrigated area (NSA)	BR(LR)	Soil moisture low, gentle slopes	LULC/GM/GW P
Irrigated Area (NSA)	BR (LR)	Good infiltration, gentle and low slopes	LULC/GM/GW P

5. WASCA -CWRMP: Water Actions: MGNREGS & Convergence



CWRM Progress in the District

Sl. No.	Name of the Block	Total No. of GPs	CWRM Plans completed	CWRM plans work in Progress (non-spatial)	CWRM plans work in Progress- spatial data	No of GPs – Final plan submitted and action to be started by 15 Aug 2020
1	Anakavoor	55	11	55	10	4
2	Arni	38	4	38	4	4
3	Chengam	44	4	44	13	4
4	Chetpet	49	4	49	4	4
5	Cheyyar	53	4	53	10	4
6	Jawadhu hills	11	4	11	4	4
7	Kalasapakkam	45	4	45	17	4
8	Kilpennathur	45	4	45	11	4
9	Pernamallur	57	5	57	4	4
10	Polur	40	4	40	4	4
11	Pudupalayam	37	10	37	4	4
12	Thandarampet	47	10	47	10	4
13	Thellar	61	12	61	45	4
14	Thurinjapuram	47	11	47	9	4
15	Tiruvannamalai	69	4	69	10	4
16	Vandavasi	61	4	61	10	4
17	Vembakkam	64	4	64	4	4
18	West arni	37	4	37	4	4
	Total	860	107	860	177	72

3rd DLSC- WASCA - TN, DRDA- Tiruvannamalai

CWRMP
Progress

CWRM Plan, WAsCA TN
Kilapakam Gram Panchyat
Vandavasi Block,
Tiruvannamalai District :
DRDA- Tiruvannamalai

Climate Analysis (source: WRIS, CWC, MoJS)

Climate Table	Minimum (°C)	Maximum (°C)	Diff D/N Temp	ET expressed in mm	ET Loss in HaM	Volumetric Soil Moisture (%)	Normal Rainfall (mm)	% of Normal Rainfall (mm)	Normal Rainy days (No.)	% Normal Rainy days (No.)
1	2	3	4	5	6	7	8	9	10	11
June-19	26.4	35	8.6	110	34.41	31	465.8	45%	89	52%
July-19	27.5	36	8.5	112	34.41	42				
August-19	27.3	34.5	7.2	100	31.29	30				
September-19	26.7	33.7	7	95	31.29	25				
October-19	26.1	32.8	6.7	84	25.03	34	439.8	42%	72	42%
November-19	25.7	32.8	6.7	60	18.77	20				
December-19	24.5	30.9	7.1	54	15.64	16				
January-20	23	28.6	5.6	57	18.77	16	45.8	4%	0	0%
February-20	22	27.6	5.6	45	15.64	4				
March-20	21.1	28.5	7.4	13	3.13	14				
April-20	22.2	30.3	8.1	17	6.26	15	95.2	9%	11	6%
May-20	23.8	33.1	9.3	57	18.77	32				
Average / Total			7.32	67.00	253.41	23.25	1046.60		172	

Vulnerability Analysis

Vulnerable HHs for Future Livelihoods (source: Census 2011 & SECC data)	
Deprived HH	121
Included HH	1
Total	122
Most Vulnerable HH	
Female Headed HH	28
SC/ST HH	44
HH with disable member	1
No Adult member 16-59	38
Most Vulnerable HH	111
HHs For Livelihoods Target Priority	
Year 1 Priority 1	45
Year 1 Priority 2	4
Year 2 Priority 1	45
Year 2 Priority 2	4
Year 3 Priority 1	22
Year 3 Priority 2	2

Potential Works Under WASCA : CWRMP Land Classification Analysis

Land Classification	Area in Ha	PC Area	Logic for Treatment	Proposed Treatment Available Area in Ha	Proposed Area For Plantation activity in Ha	Block Plantation (Comm)/ (Indv)	No of Linear Community Plantations	No of Total Plantations	Estimated HHs Benefiting	SMC Work No of Trenches	Drainage Line Treatment Works in RMT	Estimated No of Farm Ponds (Comm and Indv)	Estimated No of Farm Bund with boundary trench	Estimated No of Land Development Area	Estimated No of Composting Farmers
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Forest Area	0	0%	40% of Area	0	0	0	0	0	0	0	0	0	0	0	0
Area under Non-Agricultural Uses	94.06	29%	Additional Area above 20% of TA	6.29	6.29	5,034	1,426	6,460	32	1259	3210	1	1	0	1
Barren & Uncultivable Land Area	0	0%	75% of the total Area	0.00	0.00	-	-	-	0	0	0	0	0	0	0
Permanent Pastures and Other Grazing Land	1.98	1%	75% of the total Area	1.49	1.49	1,188	-	1,188	6	297	0	0	0	1.485	0
Land Under Miscellaneous Tree Crops etc	3.45	1%	75% of the Total Area	2.59	2.59	2,070	-	2,070	10	518	0	1	0	0	0
Culturable Waste Land Area	0.25	0%	75% of the Total Area	0.19	0.19	150	-	150	1	38	0	0	0	0.1875	0
Fallows Land other than Current Fallows	33.52	10%	25% of the Total Area	8.38	4.19	3,352	1,006	4,358	2	0	0	1.676	1.676	8.38	1.676
Current Fallows	92.38	28%	25% of the Total Area, out of this, 50% area is for Horticulture / Agro Forestry	23.10	11.55	9,238	1,848	11,086	5	0	0	9.238	9.238	0	4.619
Unirrigated Land	29.16	9%		7.29	3.65	2,916	583	3,499	1	0	0	2.916	2.916	0	2.916
Irrigated	70.44	22%	100% bore well farmers and 50% target for Horticulture	60.08	30.04	24,032	-	24,032	24	24	0	0	0	0	0
Total	325.24			109.40	59.98	47,980	4,862	52,842	81	2135	3210	15.83	14.83	10.0525	10.211

Micro Watershed Spread - Priority Analysis (source: NRSC)

Killapakam: WASCA-CWRMP - Micro Watershed Spread - Priority Analysis

Macro No.	Area (Ha.)	Micro W/s No.	Area (Ha)	Extent WS area in GP	% Area of WS to Total GP Area	% of WS in GP	WS Location	No of Drainage lines in the WS	Order of Drainage lines	No of Tank /Oorani	Extent of Tank in WS	Build up Area in Ha	Barren Land	Waste Land	Erosion land	Salt affected area	Run Off Area	Priority
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4C2A1	54885.5	4C2A1d10c	420	19	6%	5%	Ridge Upper area	0	0	0	0	0	0	2	9	0	Good	1
		4C2A1d10a	638	6	2%	1%	Ridge Upper area	0	0	0	0	0	0	0	0	0		
									0	0	0	0	0	0	0	0		
4C2A1	54885.5	4C2A1e02c	498	194	60%	39%	Ridge Upper area	1	mid order	1	Full Area	7.5	0	0	48	0	Good, Bad	1
		4C2A1e02b	519	106	33%	20%	Ridge Upper area	0	0	1	Full Area	6.5	0	0	10	0	Good, Bad	2
Total				325								14						
Extent			2075	16%														

Catchment Area: Proposed Treatment Analysis

Catchment Classification	Area in Ha	% of Runoff	Run off HaM	% Run Off HaM	Proposed Targeted for Treatment	% of Treatment area to Total Catchment	Increase Area for infiltration due to Soakpits	Avenue Plantation in Ha	Natural Drainage lines treated in ha	Canal Network in Ha	Tanks Area storage in Ha	Expected Storage & Recharge HaM	Expected RO treated in HaM
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Good Catchment	94.06	37.5	35.27	30.43%	10.34	10%	3.5	0.23	0.15	0.17	2.87	13.83	5.2
Average Catchment	5.68	28.1	1.60	1.38%	4.26	126%	0	0	0	0	0	4.46	1.3
Bad Catchment	225.5	18.7	42.2	68.19%	98.85	44%	0	0	0	0	0	103.49	19.4
Total	325.24		79.0		115.77	36%	3.5	0.23	0.15	0.17	2.87		25.8
												RO Treated	22%

Soil Resources Analysis

1) Major Nutrients

N, and P are very low to low and K is low to medium in the GP and SoC is medium

Hence actions to enhance the soil fertility through composting, agro-forestry, field bunds with Nitrogen fixing trees and farm bunds to reduce the top soil erosion and bund plantation as wind breaks to reduce wind erosion of soil

2) Micronutrients:

Soil is deficient in B, CU, S and Zn

Actions such as composting, addition of FYM through livestock rearing, growing plantation in bunds adds dry residues to soil along with change in the cropping systems

3) Physical Parameter:

35% of the soil is moderately alkaline

Actions to balance the soil pH to neutral helps to improve the productivity of the crops cultivated; measures like composting to improve soil organic matter, drainage control through field trenches and farm bunding with spur to safe drainage of excess water during rainy days

4) Soil Profile:

72.3% of soils in the GP are fine in nature.

They have moderate to low permeability and infiltration rate.

Measures like application of compost and change in cropping systems helps to improve the soil structure for better soil porosity

Surface Water Resources Status

1) Tank Systems				
S.N.	Name of Structure	Existing Structures		
		No.	Area (Ha)	Storage Capacity (Ha.M)
1	Pond / Tank	2	1.89	0.65
2	Oorani	1	0.98	0.25
	Total	3	2.87	0.90
2) Natural Drainage Lines length in Mts				
	Natural Drainage Lines length	Length in Village Area (m)	Type of Use	
1	Kilpakkam Chitheri 2 Channel	1500	Irrigation	
3) Canal Network (Mts) and Minor Irrigaton				
1	Main Canal	950	Irrigation	
2	Minor			
3	Distributaries			
4	Water Courses (Field Channels) (MI Tank)	760	Irrigation	
	Total	1710		

Status of Irrigation Facilities-Surface Water (Source: Census 2011)

Status of Irrigation Facilities-Surface Water (Source: Census 2011)				
S No	Source	Type	Area Irrigated (Ha)	% of Type
1	Surface Water	Canals Area	0	0.0%
2	Surface Water	Tanks/Lakes Area	10.36	14.7%
3	Surface Water	Waterfall Area	0	0.0%
4	Ground Water	Wells/Tube Wells Area	60.08	85.3%
5	Other Source	Other Source	0	0.0%

85 % of the total water requirement for agriculture is met through Ground water and only 15% is met via Surface water. Hence equal importance is necessary to augment both ground water and harvest and store surface water

Agriculture Water Requirement

Killapakam: WASCA CWRMP: Agriculture Water Requirement					
Sl No.	Crop	Irrigated Area (Ha)	Rainfed area (Ha)	Total volume in (Ha M)	
1	Paddy	25.30	0	38.0	8% area under rainfed and 92% under irrigation. Of the irrigated area, 57% area under Paddy - a high water requiring crop; being an OE block and 85% of water requirement is through Ground water - change in the cropping system with low water requiring crops like millets, pulses as well as increase the water use efficiency through technologies like SRI and Alternate wetting and drying is necessary
2	Ragi	1.00	0	0.5	
3	Other pulses	10.88	3.53	5.6	
4	Sugar cane	5.20	0	10.4	
5	Mango	0.00	0.55	0.3	
6	Banana	0.39	0	0.9	
7	Brinjal	0.20	0	0.1	
8	Green chillies	0.80	0	0.5	
9	Water melon	1.00	0	0.3	
	Total	44.76	4.08	56.5	

Livestock and Water Resources (Source: Livestock Census, 2014, Dept of Animal Husbandry)

Type of Animal	Numbers	Water Req. (HaM)	Percentage	Water Met from Ground Water	Water Met from Surface Water	No of Shelters	Fodder Plots Ha	Cattle Trough
1	2	3	4	5	6	7	8	9
Cattle (Indigenous)	797	2.91	67%	67%	0%	20	10.0	10.0
Cattle (Cross breed)	0	0.00	0%	0%	0%	0	0.0	0.0
Buffaloes	3	0.02	0%	0%	0%	0	0.0	0.0
Sheep	139	0.05	12%	0%	12%	2	0.0	0.0
Goat	222	0.08	19%	0%	19%	6	0	0.0
Horses and Camels	0	0.00	0%	0%	0%		0.0	0.0
Pigs	2	0.00	0%	0%	0%	0	0.0	0.0
Poultry	0	0.00	0%	0%	0%	0	0.0	0.0
Dogs	11	0.00	1%	0%	1%	0	0.0	0.0
Rabbits	17	0.00	1%	0%	1%	0	0.0	0.0
Total	1191	3.06		67%	33%	0	0.0	0.0

Of the total water requirement, 67% is met through ground water and remaining 33% is through surface water

Availability of Drinking water

Type	Surface Water	Ground Water	% SW	% GW
Tap Supply (FHTC)	0	18	-	-
Tap Supply: Public	0	9	-	-
Handpump	0	6	0%	50%
Open well	0	3	0%	25%
Borewell	0	2	0%	17%
Tank/ Pond/ Oorani	1	0	8%	0%
	1	11	8%	92%

92% is depending on ground water and only 8% of total drinking water requirement is met through surface water

Assessment of Grey Water Generation

S.N	Waste water generation Source	Per day/unit wastewater generation in L	Daily volume of Grey water in L	Annual Grey water in CuM
1	Bathing	15	18675	6816.38
2	Washing	10	12450	4544.25
3	Toilet	10	12450	4544.25
4	Cleaning	5	6225	2272.13
5	Cooking and cleaning Utensils	5	6225	2272.13
6	Others	5	6225	2272.13
	Total	50	62250	22721.25
	Annual Grey water generated in HaM			2.27

Water Quality Profile

1

Chemical Contaminants (Nos. of Sources with Single Chemical Contaminants): Nil

2

Bacterial and Other Contaminants (Nos. of Sources with Bacteriological Contaminants): Nil

Water Demand

Water Demand Estimation

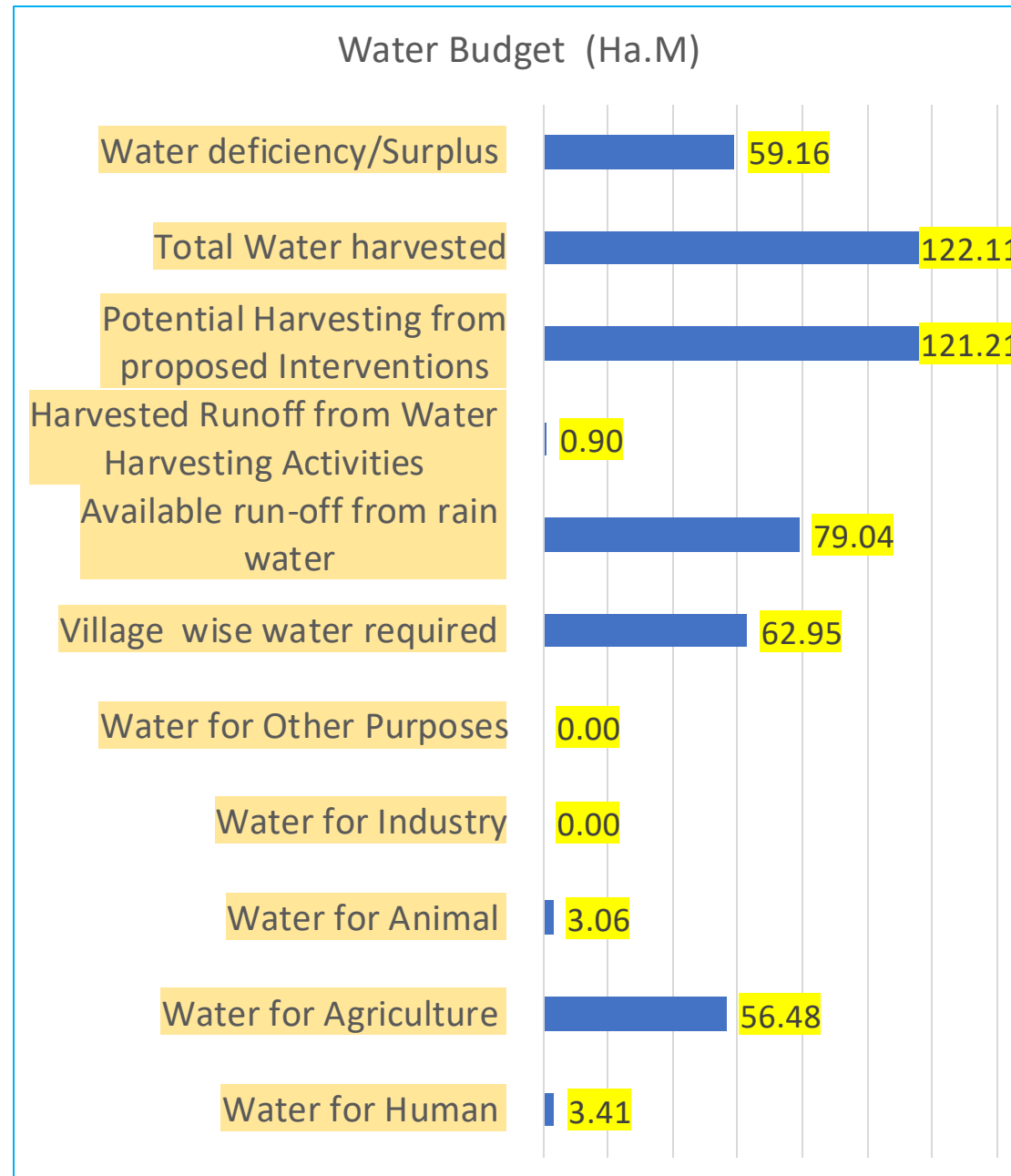
Water Users	Total Annual Requirement (HaM)	Requirement met by Gr. Water (HaM)	Requirement met by S.Water (HaM)	% Gw	% SW
Human	3.41	3.12	0.28	92%	8%
Animals	3.06	2.06	1.00	67%	49%
Agriculture	56.48	48.17	8.31	85%	15%
Industry	0.00	0.00	0.00	0%	0%
Other (specify)	0.00	0.00	0.00	0%	0%
Total	62.95	53.35	9.60	85%	15%

Water Budget in HaM

Parameter	Water Budget (Ha.M)
Water for Human	3.41
Water for Agriculture	56.48
Water for Animal	3.06
Water for Industry	0.00
Water for Other Purposes	0.00
Village wise water required	62.95
Available run-off from rain water	79.04
Harvested Runoff from Water Harvesting Activities	0.90
Potential Harvesting from proposed Interventions	25.79
Total Water harvested	26.69
Water deficiency/Surplus	-36.26



Killapakam GP Water Budget Estimate: CWRMP- WASCA





Vulnerable Population	13.33% of the population belong to SC community. SECC data 134 HH are vulnerable and out of them 122 are most vulnerable. These families to be provided with sustainable asset creation with water security and future livelihoods with climate resilient models.
Mahatma Gandhi NREGA	91.59% of job card holders participate in MGNREGS works.
Climatic profile	The average difference between D/N temperature is 7.3 degree Celsius. The max change in D/N temperature is noticed during the months of April - July.
Rainfall	89 rainy days during June-Sep with onset in first week of June and ending by first week of October; 72 Rainy days during October to December
Evapo Transpiration	Overall all due 804 mm ET is recorded as per WRIS data. The area influenced by ET is 56.76%.Influence area of ET is 31.285 Ha. It results in a total of 251.53 HaM water losses annually in the GP. The maximum losses of ET are observed during June-July months.
Soil Moisture	Most of the soils are fine and fine loamy with 18-22 % of soil moisture. The volumetric soil moisture data for the shows that during Jan-May 2020 are below this range. Hence during these months, protection measures on lands to be planned. Mulching, fodder development (dry / green); horticulture and if any plantations are taken up watering provision to be made mandatory during these period, with more watering during March-May months.

Key Water Challenges: 1



Key Water Challenges: 2

Land Classification	No forest area
Micro Water Sheds	Out of four watershed boundaries passing through the GP, two watersheds are main, 4C2A1e02c, 2b. The extent of these two watersheds in the GP are 39% and 20% respectively. These two watersheds constitute 60% and 33% of the total GP area. But the watershed 4C2A1d10c is a very small portion (19Ha), but sheet erosion is noticed in this area. Hence these three watershed areas the WASCA project should focus and priority 1 are 10c, 2C and priority 2 is 2b.
Soil Resources	N, and P are very low to low and K is low to medium in the GP and SOM is medium. Soil fertility improvement measures such as composting, bund plantation of green manure trees which fix Nitrogen, farm bunding to reduce top soil erosion have to be taken up
Soil Profile	72.3% of soils in the GP are fine in nature. They have moderate to low permeability. Hence efforts to be made to encourage farmers to take up farm bunding with boundary trench, to enable enough soil moisture
Forest Resources	No Forest Land in the GP
Amount of Run-off	Agriculture lands (fallow, dry and irrigated areas) resulting in 68.19% of total Run off. From various proposed work it is estimated to treat 44% of bad catchment area, 75% of average catchment area and 13% of good catchment area. Overall treatment proposed is 36.24% of catchment area. (excluded linear areas under DLT, Roads)



Key Water Challenges: 3

Existing Water Harvesting Structures	Two tanks need renovation, One oorani needs renovation
Description of Natural Drainage Lines	One drainage line flowing through the GP, is falling under the major watershed area, connecting the tank. Hence deepening, widening the channel, slit trap and grass trough development or plantations will help to protect and improve the channels. If needed, the channels connecting to tanks, near to that area, lining can be provided to reduce the water losses.
Canal Network	Total of 1710 mt of canal water system if noticed. Of this 44% are field channels. The field channels if de-silted, widened, sides strengthened with vegetation and start point of the courses can be provided with lining up to 10-50 mts.
Availability of Drinking water	A total of 38 drinking water sources are noticed in the GP, Of the 38 sources, 47% are FHTC and 24% are Public taps, constitute majority of the sources. Data on dependent families are not available in secondary sources. As and when primary source data is collected, data will be entered in this section.
Status of Irrigation Facilities- Surface Water	85.3% of agriculture is depending on ground water sources.
Means of Water Extraction	38 Sources of water are noticed in the GP, providing services for irrigation, drinking water. 68% of sources is used for irrigation purpose and 32% are used for domestic requirements.
Water Application practices for Irrigation	Mostly flooding is followed under tube well farming and tanks system-controlled flooding.



Key Water Challenges: 4

**Chemical Contaminants
Bacterial and Other
Contaminants**

NO chemical contamination is reported

No bacterial contamination is reported.

2.27 CuM of grey water is generated. Through soak pits (Indv and community) the grey water can be managed.

**Assessment of Grey Water
Generation**

Details of existing grey water drains will be collected during ground truthing and data will be filled for action.

**Details of Domestic Grey Water
Drains**

85% dependency on all water requirement in the GP is on ground water.

**Water Demand Estimation
(Primary Information)**

The GP is Over Exploited. The Water budget is deficit. The total water harvested is very low. The available run-off to be harvested is 79HaM.

Village Wise Water Budgeting



Activity	Numbers	Activity	Numbers
Treatment measures of upper slopes		Treatment measures for farmlands and Rural Village	
Afforestation	32474	Composting	15
Contour Continuous Bunds (CCB)	2135	Farm Bunding cum trenches	10
Drainage Line Treatment (DLT)	3210	Construction of farm ponds	15
Treatment measures of middle slopes		Silt application	10
Loose Stone Check Dam (LSCD)	1	Land development	4
Water Absorption Trench (WAT)	2111	dryland horticulture	15506
Linear Plantation	4862	Drinking water measures	
Avenue plantation	2314	Rooftop Rainwater Harvesting	2
Block Plantation	8440	Grey water management	
Treatment measures of gentle slopes		soak pits - Vulnerable HH	134
Deepening of waterbodies	1	Livelihood activities	
Desiltation of waterbodies	2	Cattle shed	20
Waterbody Bund strengthening	2	Ffodder plot	10
Inlet development with silt trap of Waterbodies	1	Goat shed	6
Surplus/waste weir	1	Sheep shed	2
Recharge shaft/dug wells	24	Cattle trough	10
Treatment measures for canal network		Azolla unit	20
Canal Bed levelling	1710	Vermi compost	20
Canal Bund Plantation	760	Nutrigarden	134
Canal side plantation	200		

Proposed Activities

Thematic maps

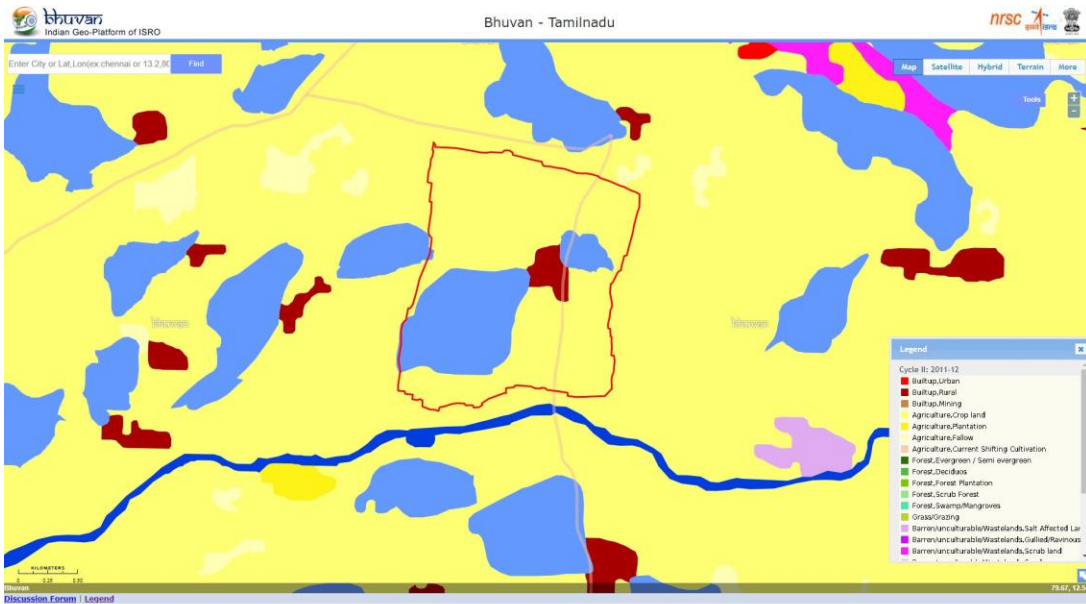
Location map



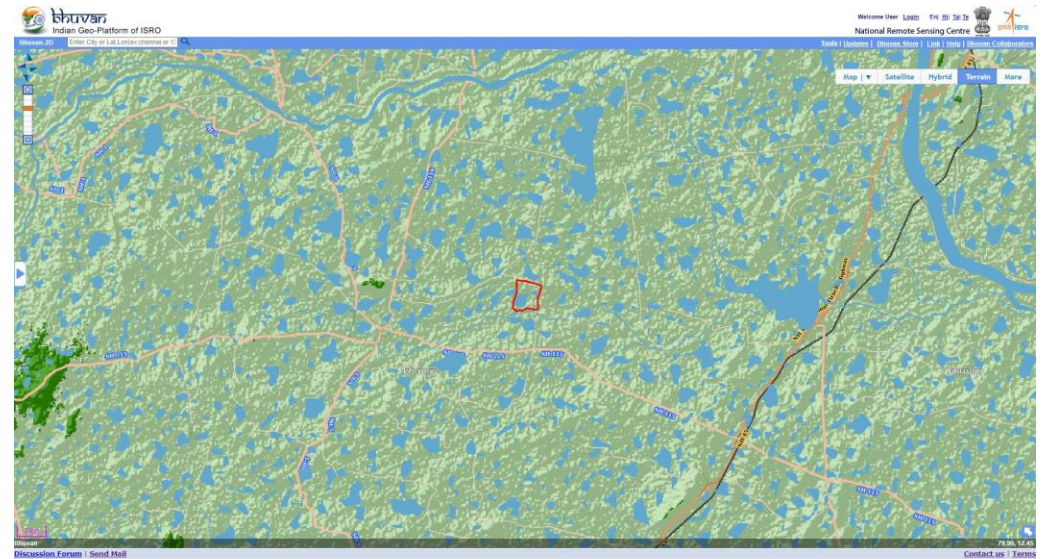
Satellite view map



3rd DLSC- WASCA - TN, DRDA- Tiruvannamalai



Land use land cover map

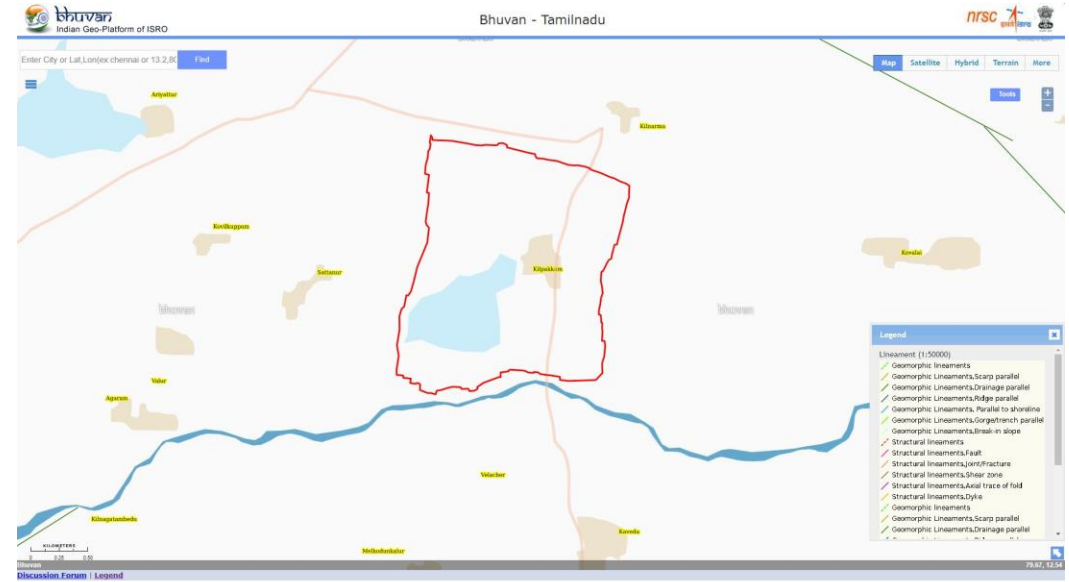


Terrain map

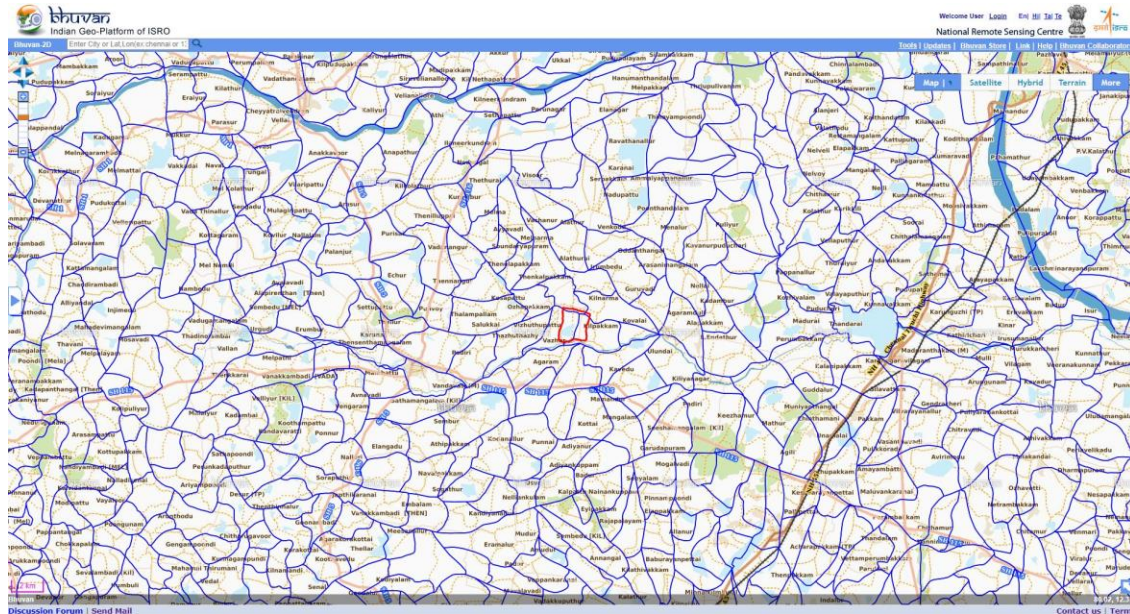
Ground water prospects map



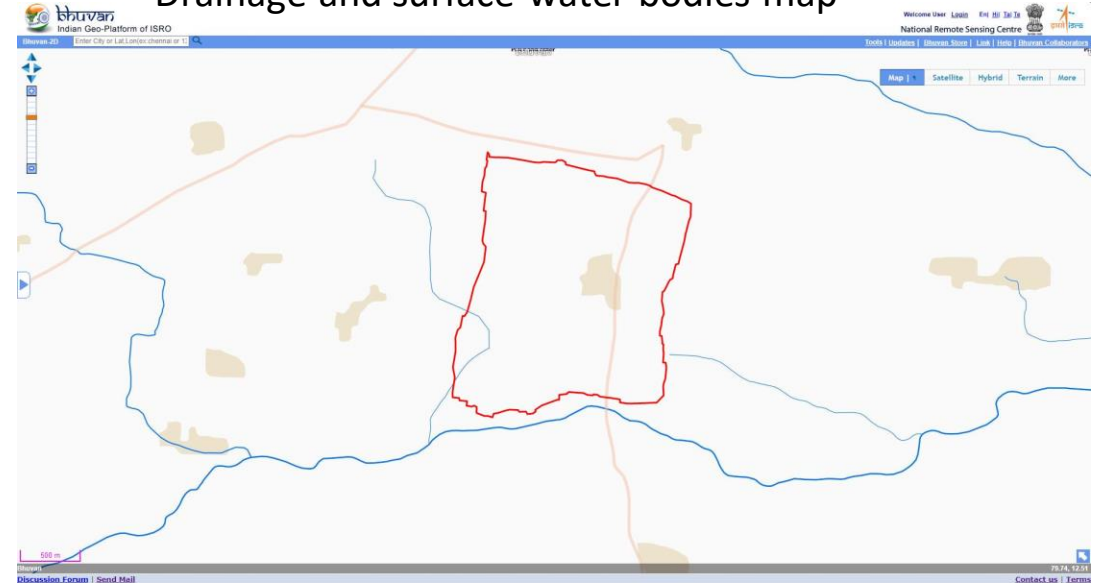
Lineament map



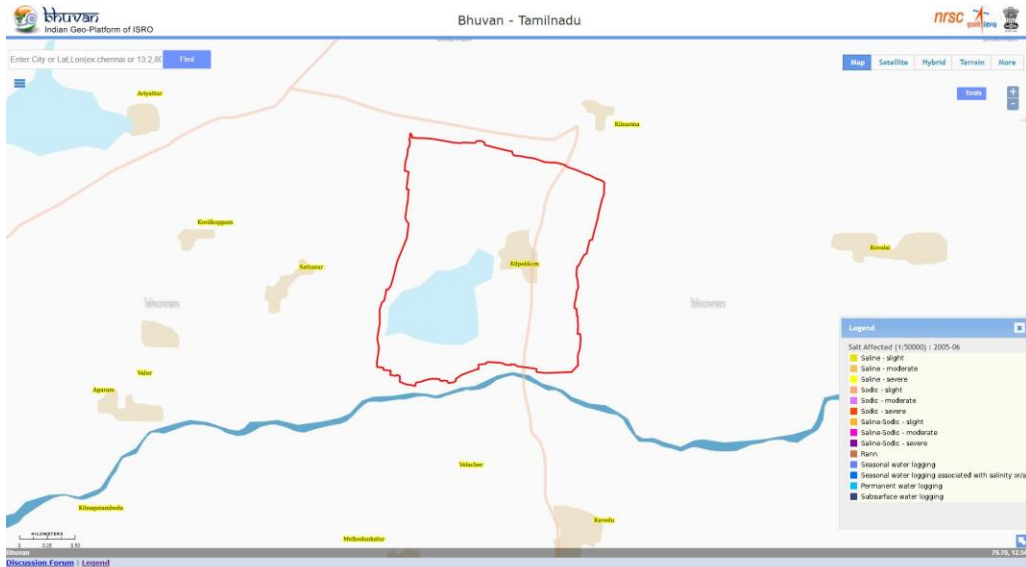
Watershed map



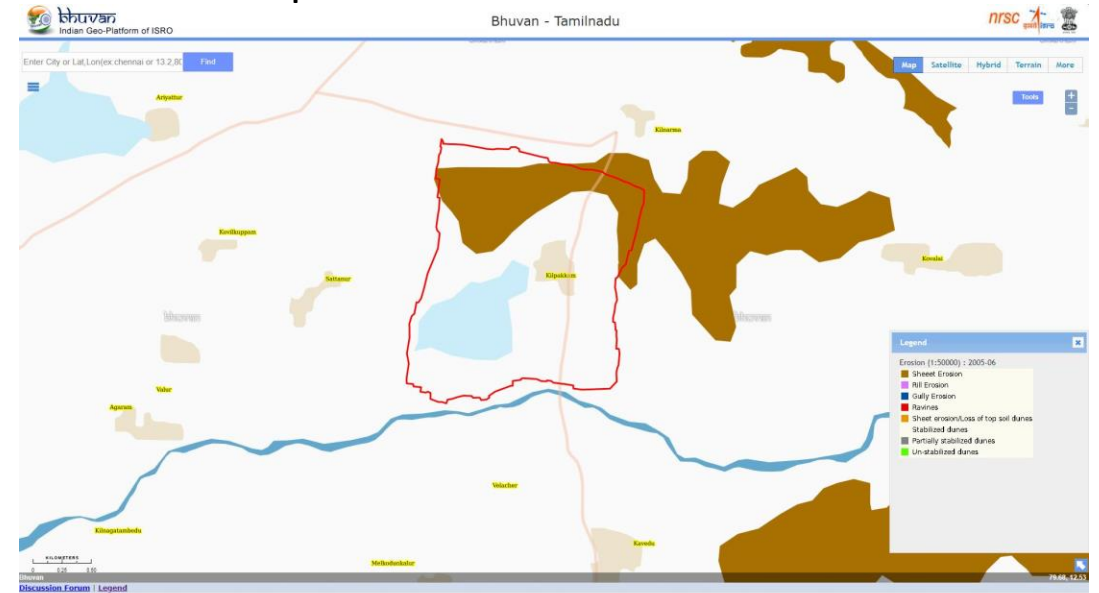
Drainage and surface water bodies map



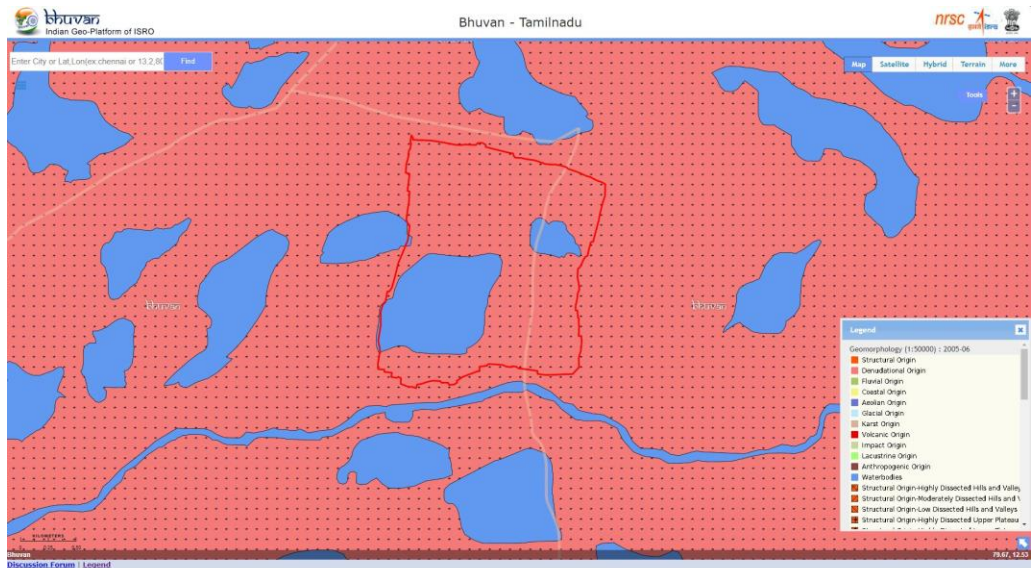
Salt affected area map



Erosion map



Geomorphology map



Wasteland map

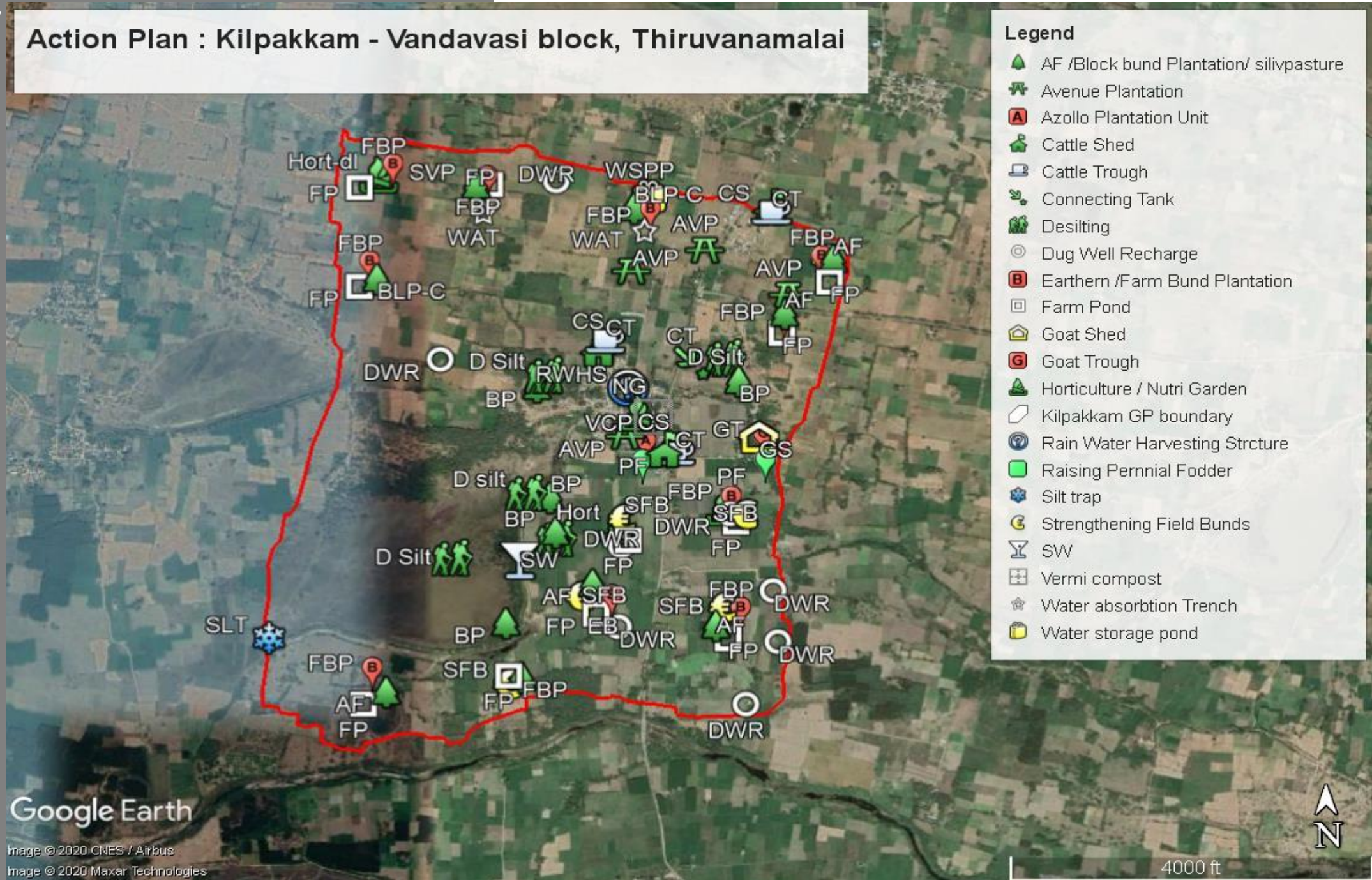


MGNREGA Asset MAP

The screenshot displays the Bhuvan-MGNREGA Asset Map interface. At the top, the title "Bhuvan-MGNREGA" and "Ministry of Rural Development" are visible. The interface includes a search bar with the text "Enter City or Lat, Lon(ex:chennai or 13)", navigation tools, and a scale bar indicating 500 meters. The map shows a red-outlined area containing several green location pins. The footer contains the text "Discussion Forum | Send Mail" and "Contact us | Disclaimer".

Kilpakkam CWRMP GP Plan: WASCA-TN

Action Plan : Kilpakkam - Vandavasi block, Thiruvannamalai

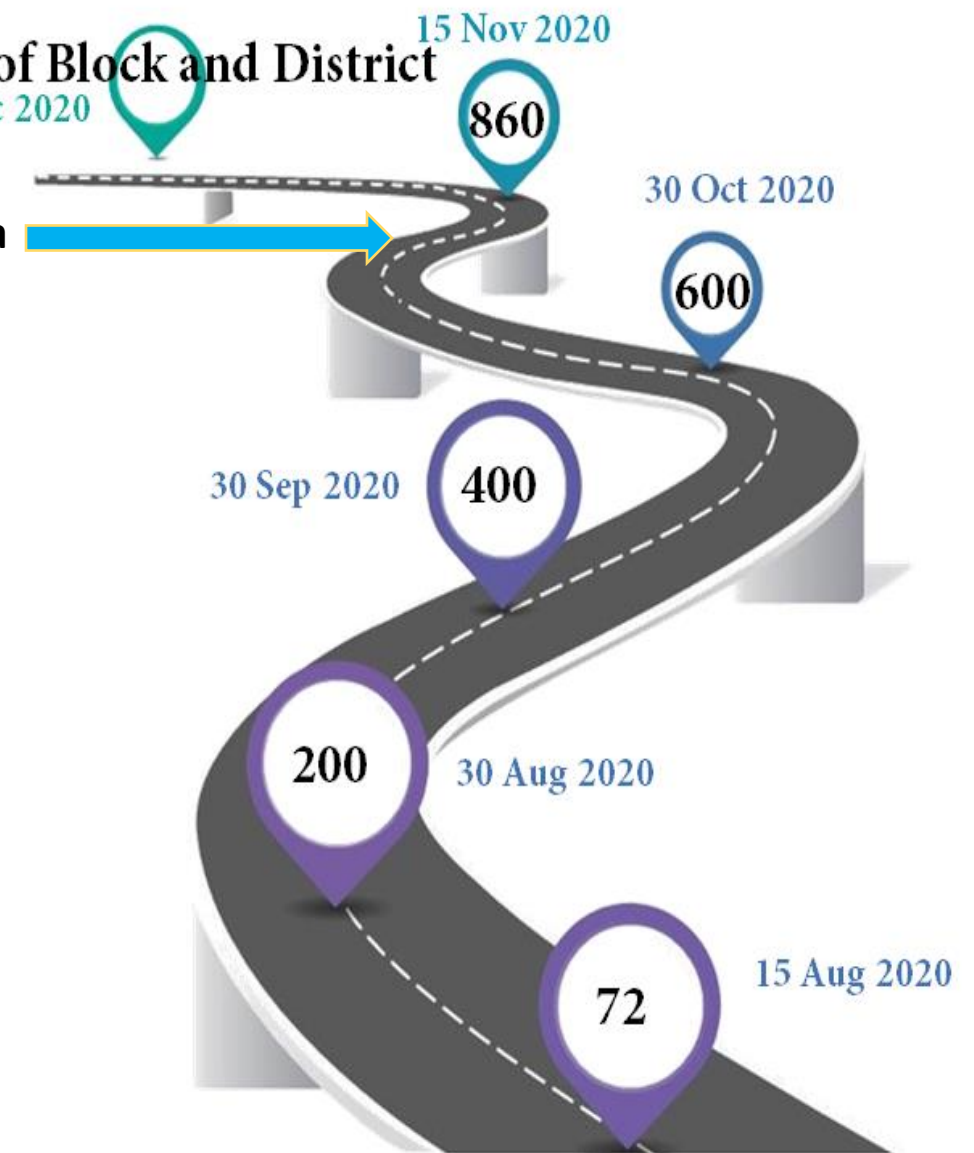


Proposed plan to complete the task as per NSC



Compilation of Block and District

Watershed and Catchment area Integration

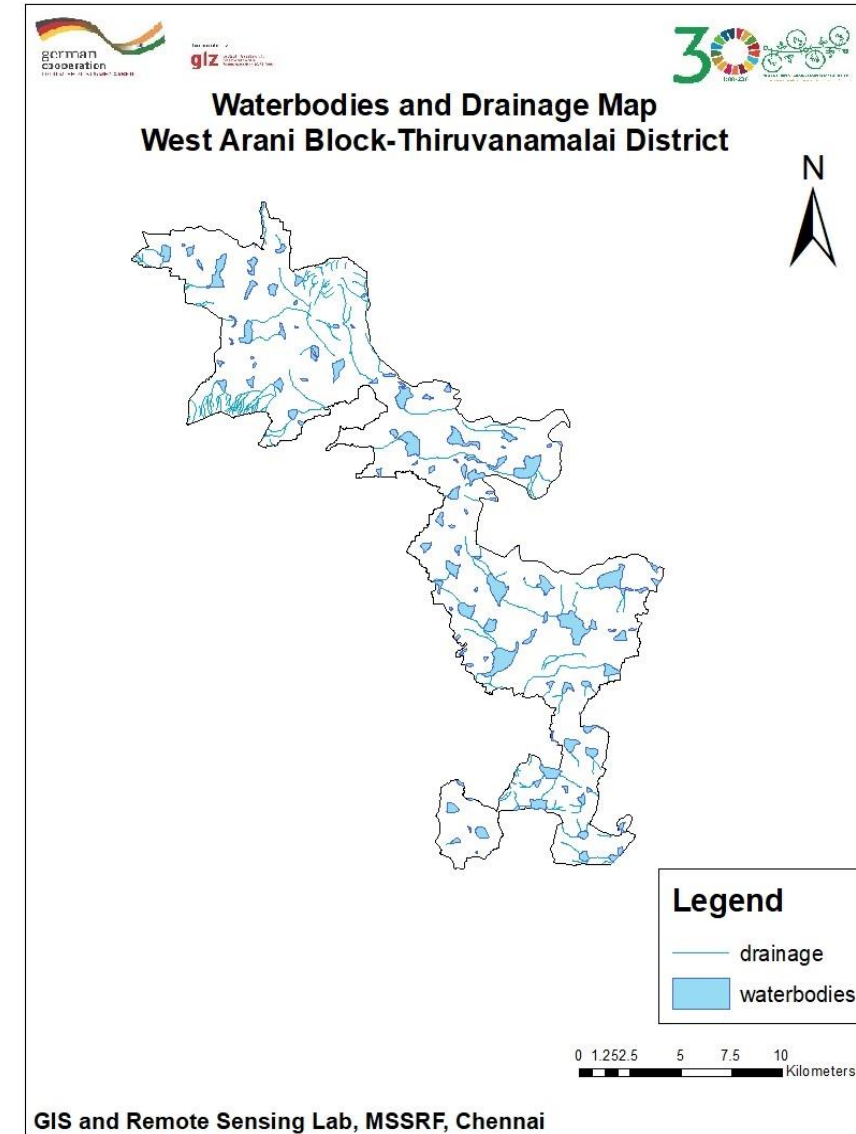


Climate Resilient Models

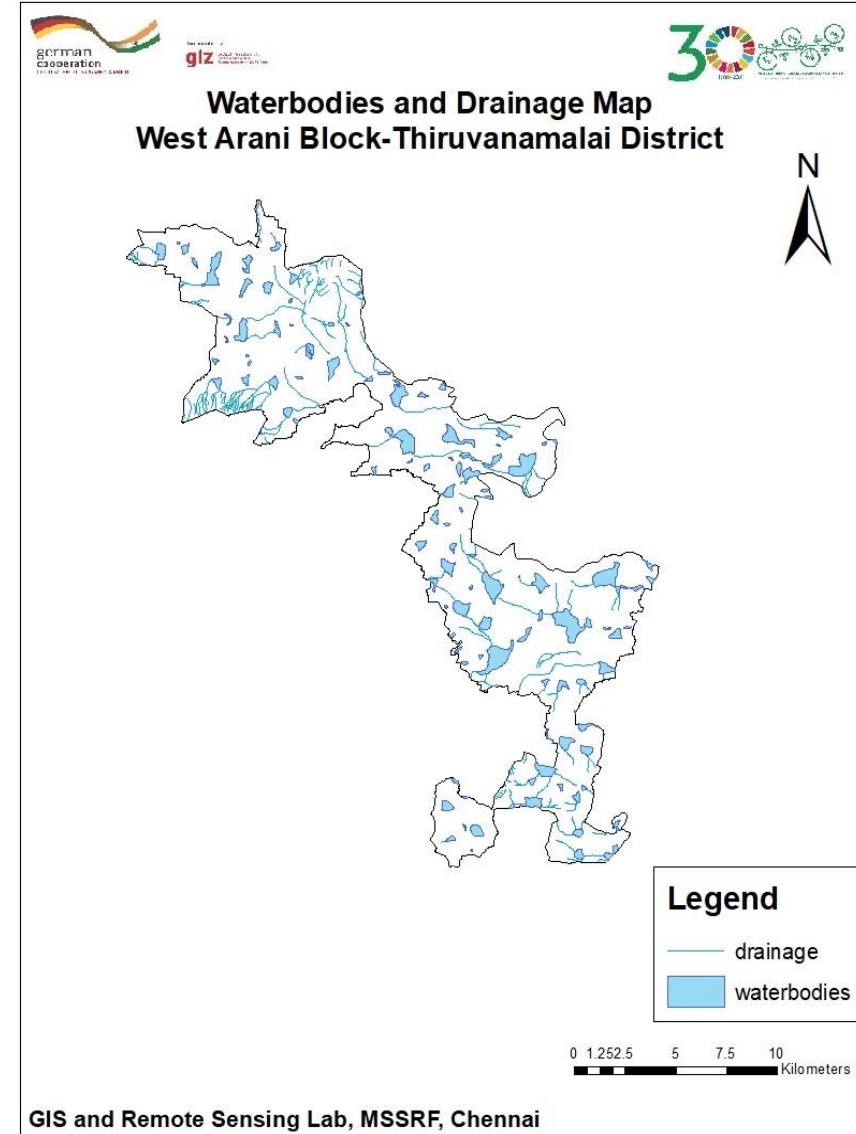
No.	Name of the Climate Resilient model	Name of the GP	Name of the block	Status of CWRM plan
1	Four water concept	Kattukanallur	West Arni	CWRM completed
2	Greening of Hillocks		West Arni	ST works taken up
3	Catchment Area Development & Naga Kamandala Nadhi River Sub Basin (Expert team's support)	Pallamarathur	Jawadhu hills	To be completed
4	Water conveyance and use efficiency	Kilpakkam?	Vandavasi	Completed

1) Kattukanallur/ West Arani Block: Four Water Concept

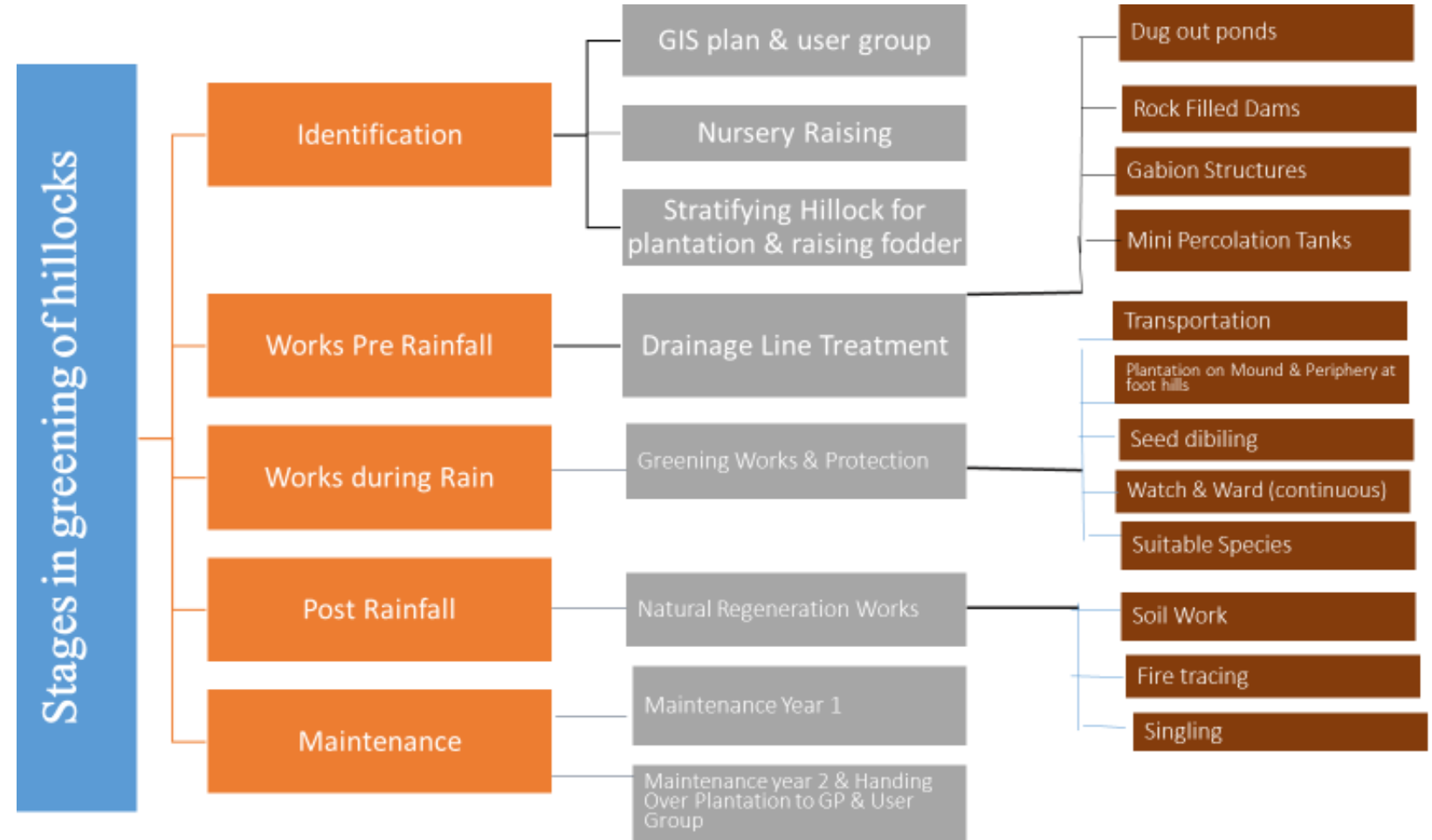
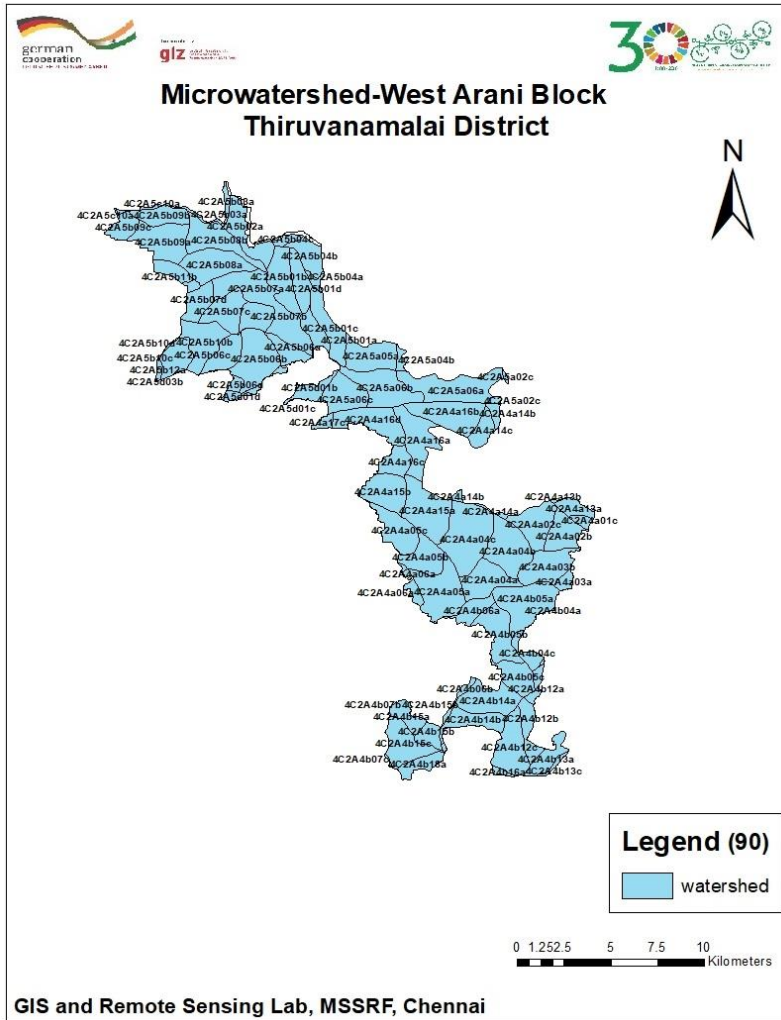
- The 4-water concept - harvesting of available runoff from rain water, groundwater, underground water & in situ soil moisture sources by treatment of catchment.
- Increase area under water harvesting structures by renovating non-functional water harvesting structures & creation of new water harvesting structures.
- Potential possible to increase the benefits three times more and increase the recharge to ground water ten times more than earlier
- Adopted at micro water shed scale of 500 ha - surface water gravity irrigation can be done through structures like rough stone diversion, continuous contour trench, percolation tanks, agro-forestry etc



1) Kattukanallur/ West Arani Block: Four Water Concept

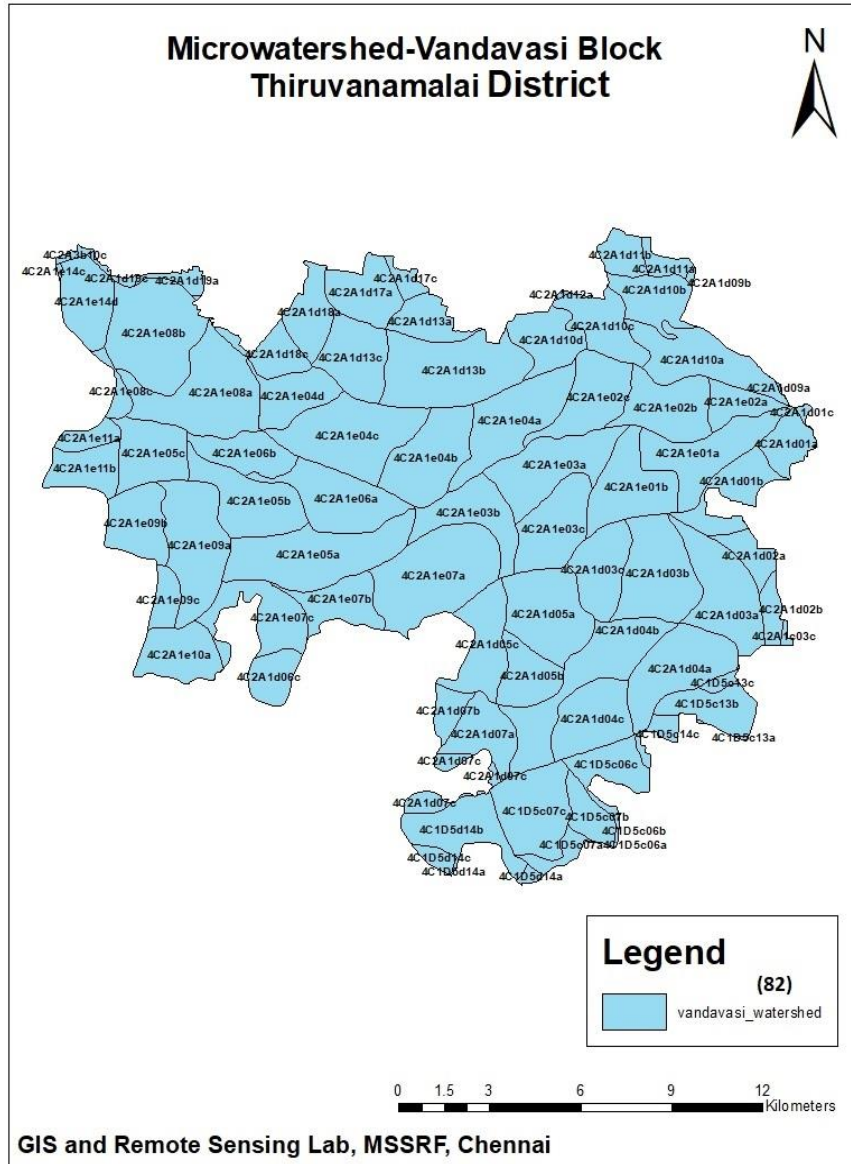


2) Greening of Hillocks at West Aarani



Micro-watershed maps –Arani block

3) Catchment Area Development & Naga Kamandala Nadhi River Sub Basin



Site identified :

- Pallamarathur
- Jawadu hills block

- Catchment Area Development
- Afforestation
- Rejuvenation of Springs through water shed approach
- Treatment of drainage lines in convergence with Forest Department
- River Stream Stabilization and Ground water Recharge

4) Water use efficiency: MGNREGS and Sahi fasal Convergence

- One of the Over exploited blocks for the Ground water – 104%
- Paddy is the principal crop
- Ground water through open and bore wells is the main source
- Method of irrigation is flooding and open surface irrigation
- Water Conveyance and use efficiency is very less.
- Proposed actions - Enhancing water use efficiency in paddy and other high-water requirement crops and such technologies are climate adaptive – SRI, Alternate Wetting and Drying, drip irrigation etc
- Enhancing the soil water holding capacity by enhancing soil organic matter – composting, cover crops - agroforestry and microbial fertilizers
- Kind of work aligned with MGNREGA – individual farm based composting, plantation of green leaf manures, Land development, Farm Ponds, Bund plantations
- Change in the Cropping systems and
- Investment in ground water recharge structures

Site identified :

- ----- GP Vandavasi block



Climate-Livelihood Proofing:

Water #For SDGs #ForNature

Action Plan 1:
Development of degraded and common lands

Action Plan 3:
Rural community and households

Action Plan 5:
Climate resilience and adaptation

Action Plan 2:
Agriculture and allied area enhancement

Action Plan 4:
Rural industry

Water Security and Climate Adaptation in Rural India (WASCA) Composite Water Resources Management (CWRM) An Indo-German Initiative

நீர் செயல்திட்டம் - 1

பழுதடைந்த மற்றும் பொது நிலங்களைப் பண்படுத்துதல் WASCA-CWRMP-TN



நீரோடை சீரமைத்தல் (உதாரணம்)
அ) காடு வளர்த்தல் ஆ) தொடர்ச்சியான விளிம்பு அகழிகள்

இயற்கையான வடிகால் பாதையை சீரமைத்தல் (உதாரணம்)
அ) கல் தடுப்பணை ஆ) வழிந்தோடும் நீரை சேமிக்கும் சிறிய தொட்டி

சமூக பண்ணைக்குட்டைகள் மேலாண்மை (உதாரணம்)
அ) நீர் நிலைகளை ஆழப்படுத்துதல் ஆ) உபரி நீரை சேமிக்கும் அணையை பழுது பார்த்தல்

காலநிலை மாற்றத்தை எதிர்கொண்டு, வருங்கால வாழ்வாதாரத்தை உறுதி செய்வோம்

Implemented by: giz, German Development Cooperation
cooperation with: Tamil Nadu, Government of India, Ministry of Agriculture, Government of Tamil Nadu, MSSRF

தமிழ்நாடு ஊரக வளர்ச்சி மற்றும் ஊராட்சித் துறை

நீர் செயல் திட்டம் 2 :

விவசாயம் மற்றும் அதை சார்ந்தவற்றை விரிவுப்படுத்துதல் WASCA-CWRMP-TN



நடைமுறையில் உள்ள நீர் நிலைகள்

புதிய நீர் நிலைகள்

சிறிய பாசன கால்வாய்

தனிநபரால் பராமரிக்கப்படும் பண்ணை குட்டைகள்

உரக்குழிகள் அமைத்தல்

பண்ணை அணைகட்டுகள்

ஐஸ் நீர் பாசனம்

புதிய விணுக்களை உருவாக்குதல்/புதுப்பித்தல்

பண்ணை குட்டைகளை அமைத்தல்

நாற்று உற்பத்தி

வண்டல் மண்ணை பயன்படுத்துதல்

பண்ணை மோட்டர் (முடாக்கு)

நிலங்களை சீரமைத்தல்

நிலத்தில் அடுக்குகளை உருவாக்குதல்

காலநிலை மாற்றத்தை எதிர்கொண்டு, வருங்கால வாழ்வாதாரத்தை உறுதி செய்வோம்

Implemented by: giz, German Development Cooperation
In cooperation with: Tamil Nadu, Government of India, Ministry of Agriculture, Government of Tamil Nadu, MSSRF

தமிழ்நாடு ஊரக வளர்ச்சி மற்றும் ஊராட்சித் துறை

நீர் செயல் திட்டம் 3 :

கிராமப்புற சமுதாயம் மற்றும் குடும்பம் சீரமைப்பு முறைகள் WASCA-CWRMP-TN

கழிவு நீர் மேலாண்மை

குடி நீர் சீரமைப்பு

குடிநீர் திட்டம்

கழிவு நீர் மேலாண்மை

குடிநீர் மேலாண்மை மேற்கரை வழியே விடும் மழை நீரை சேகரித்தல் (சமூகம்) / (தனிநபர்)

மேற்கரை வழியே விடும் நீரை சேகரித்தல்

வீட்டிலிருந்து வெளியேறும் கழிவு நீரை முறைப்படுத்துதல்

உறிஞ்சு குழி



காலநிலை மாற்றத்தை எதிர்கொண்டு, வருங்கால வாழ்வாதாரத்தை உறுதி செய்வோம்

Implemented by: giz, German Development Cooperation
In cooperation with: Tamil Nadu, Government of India, Ministry of Agriculture, Government of Tamil Nadu, MSSRF

தமிழ்நாடு ஊரக வளர்ச்சி மற்றும் ஊராட்சித் துறை

IEC Campaign: CWRM: WASCA TN

Action points for discussion

- Approval for Implementation of Four GP plans submitted
- Convergence with line departments – Agriculture, AH, Forestry, CGWB, WRO - eg
 - Agriculture Engineering dept – Farm ponds schemes
 - Agriculture – Micro irrigation, Integrated Farming Systems, Agro forestry and dry land Horticulture schemes
 - WRO – for PWD tanks in the cascade tank systems renovation
 - Forest Dept: Greening of Hillocks and Nursery raising
 - Forest Blocks: Sharing of boundaries for CWRMP
- Climate Resilient models – Field level support – planning and capacity building on selected GPs
- 18 GPs data for the baseline – MGNREGA work for 2018-19 (Report No.6) and GP minutes (seven records)

Key Action Points for discussion

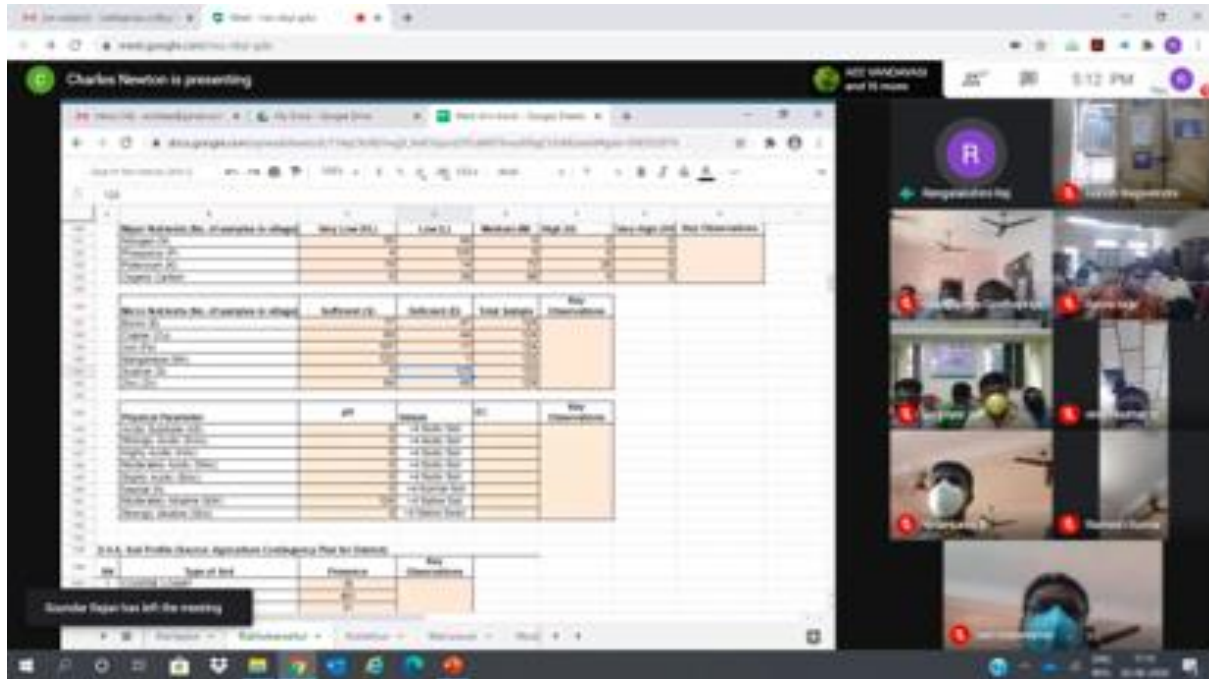
- 1) Jawad Hill Block – correct GP boundaries are need to be get it from departments (shape file/ KML) and existing water resources details like storage capacity, Lat and long etc., and under multiple schemes related to water management
- 2) All Tanks to be connected (Surplus course upper tank to lower tank)
- 3) All drainage lines to be treated (First, Second Order drains)
- 4) Every GP to have 2-5 Ha of Silvi-pasture development
- 5) Every GP wherever there are degraded hillocks, 5 Ha to be taken up for greening of hillocks
- 6) Every GP 25% of Fallow lands to be taken up under Land development
- 7) Every GP to have Kitchen garden (Nutri garden) for all individual taking up soak pits
- 8) Every GP at least 15% - 25% of dry-land and bore-well farmers to take up Horticulture plantation in convergence
- 9) Recharge shaft for all borewell farmers in OE, SC, Critical GPs / Blocks
- 10) Agroforestry and Farm Forestry to be promoted for water use efficiency
- 11) Promoting Bamboo plantation in degraded forest areas and common lands
- 12) Every GP to have 25% of Farmers (Dryland) to provide:
 - 1) Farm Ponds + Farm Bund- Trench+ Farm Bund Plantation



Management Steps required to complete the CWRMP Targets

- 1) Every Month at least 200 GPs to be completed
- 2) Weekly reviews by EEs on the Progress made
- 3) Week wise targets for every block to be set with help of EEs
- 4) Bi-Monthly Review by Project Director on Progress and submission of report to DRD, RDPR
- 5) Monthly Report submission to District Collector along with convergence plan and approvals for GP works
- 6) Bi-Monthly DLSC Meetings

Online and face to face CWRMP training Programmes





GP Visits for verification of CWMRP

Field Verification Process



Greening of Hillocks



Thank You
