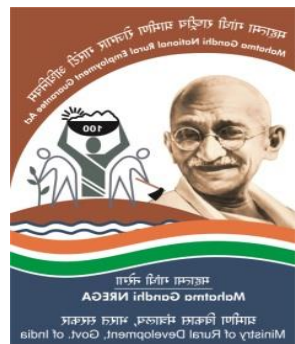




State Level Steering Committee on WASCA – Tamil Nadu 28 May 2020

Presentation by : **Dr.Radha Priya & Dr.Rengalakshmi**



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Steps of the Presentations:

01

Overview of WASCA Principles

02

Progress of WASCA TN

03

Action Plan WASCA TN

04

Area of Interest: Hotspot – WASCA TN

Ramanathapuram
& Tiruvannamalai

05

Studies Strengthening WASCA TN

Overview : 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

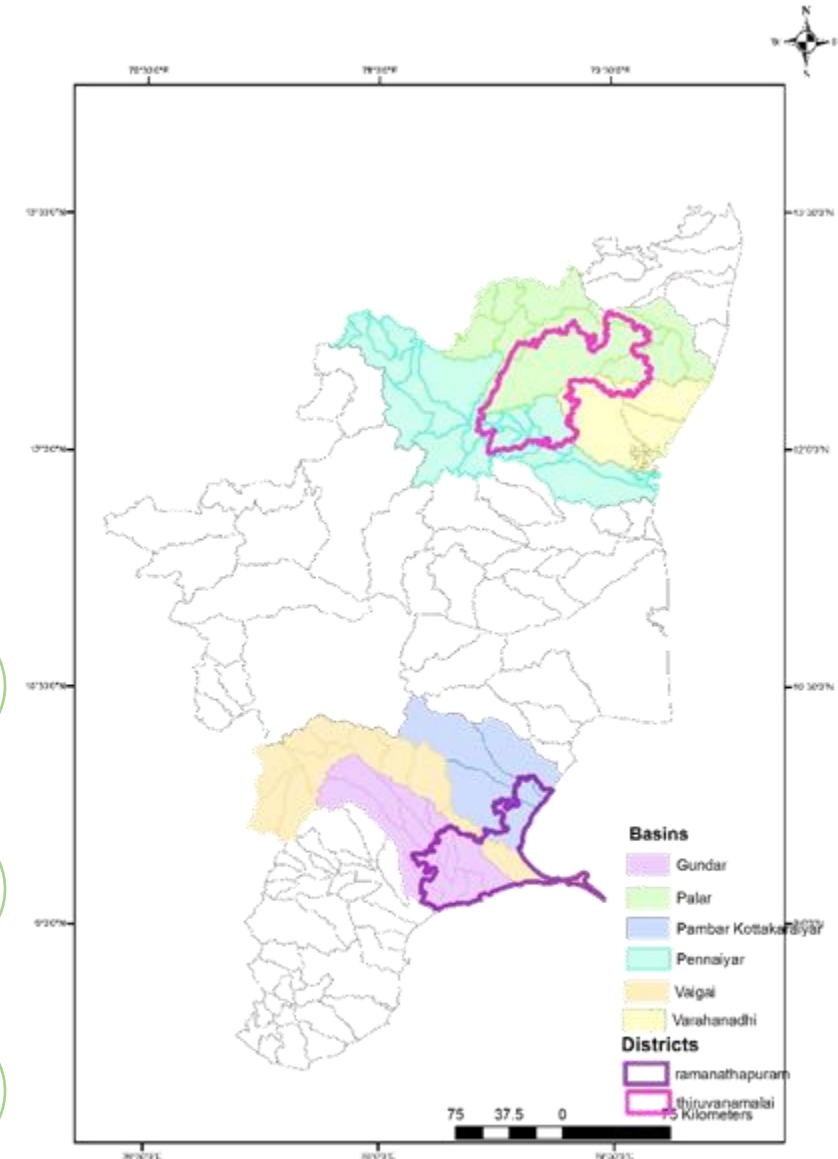
Improving existing **Planning and Financing** mechanisms

Output 2

Demonstrating climate-resilient water management measures

Output 3

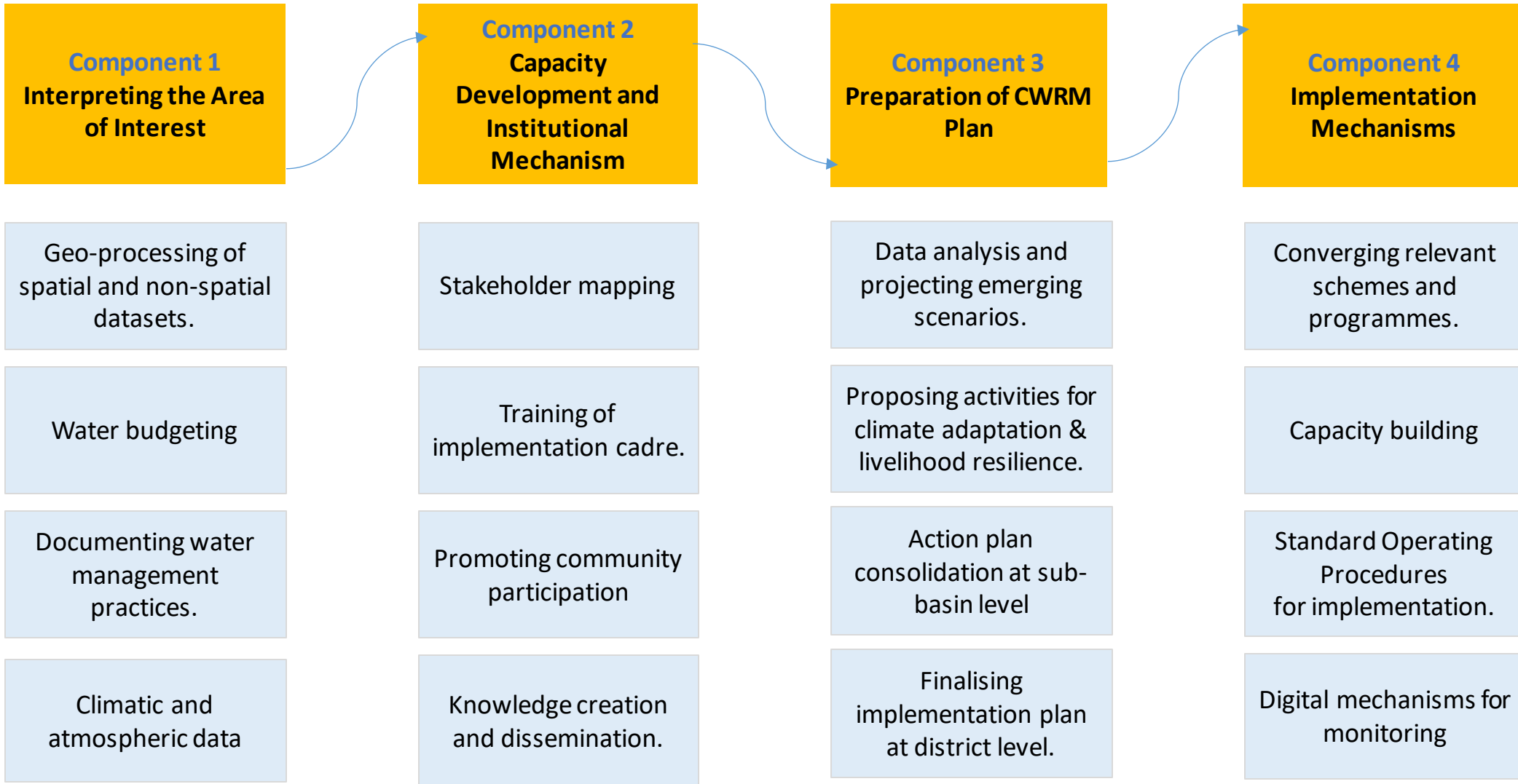
Strengthening cooperation with private sector



Overview : Climate Vulnerability Indicators: Ramanathapuram and Thiruvannamalai

	Ramanathapuram	Thiruvannamalai
Exposure in climate extremities is very high during 1951-2015	<ul style="list-style-type: none"> Increase in day time temp. is very high (1.4°C) Rainfall variability is very high Deficient rainfall years (<59%)are highest among all districts (18 years)14 	<ul style="list-style-type: none"> Increase in day time temperature is high (1.20C) Minimum temperature increase is high (0.50C) Excess rainfall are more (15 years) Deficient rainfall years (15)
Water resource vulnerability	<ul style="list-style-type: none"> Low surface water availability Supply and Demand gap Saline/poor quality of water – firkas are more 	<ul style="list-style-type: none"> Nearly 71 per cent of the blocks are overexploited Out of 52 firkas, 37 are OE, 7 are critical, 8 are semi-critical and there is no safe firka Ground water recharge is low Low surface water availability Demand supply gap is more and Fluoride and Nitrate contamination
Agriculture vulnerability is very high among all districts	<ul style="list-style-type: none"> Rain fed area (66.28 %) Cropping intensity is very low Evapotranspiration is more Soil moisture is very less 	<p>Soil moisture is less Evaporation is more</p>
Socio-economic vulnerability	<ul style="list-style-type: none"> Poverty index is more (0.63) Source of drinking water within premises in rural area is very low (5.6 %) Marginal farmers are more (93 %) High rural proportion (69.7 %) 	<ul style="list-style-type: none"> Poverty index (0.53) Source of drinking water within premises in rural is 18.8 per cent Marginal farmers are very high (94.7 per cent) Rural proportion is 79.9 per cent

Overview : Composite Water Resources Management CWRM Planning Framework | Key Components



CWRM Method approved National Level

Trainings Provided

Data collection Progressing

Guidebook under development

Progress : Progress of WASCA (29 Nov 2019 – 25 May 2020)

District Workshops with line departments conducted in two districts in January 2020

Training provided to 220 MGNREGS district and block level engineers on composite water resources management (CWRM) and GIS based planning.

The training is provided to all the districts officers of TN and all block officers in two WASCA districts

20-member team went on a study visit to Rajasthan for learning Rajiv Gandhi Jal Sanchay Yojana (formerly MJSA), Four Water Concepts, Water Conservation, Model GP, Eco Parks,

Prepared a draft CWRM Handbook that can be taken up under JJM

WASCA TN District Profile

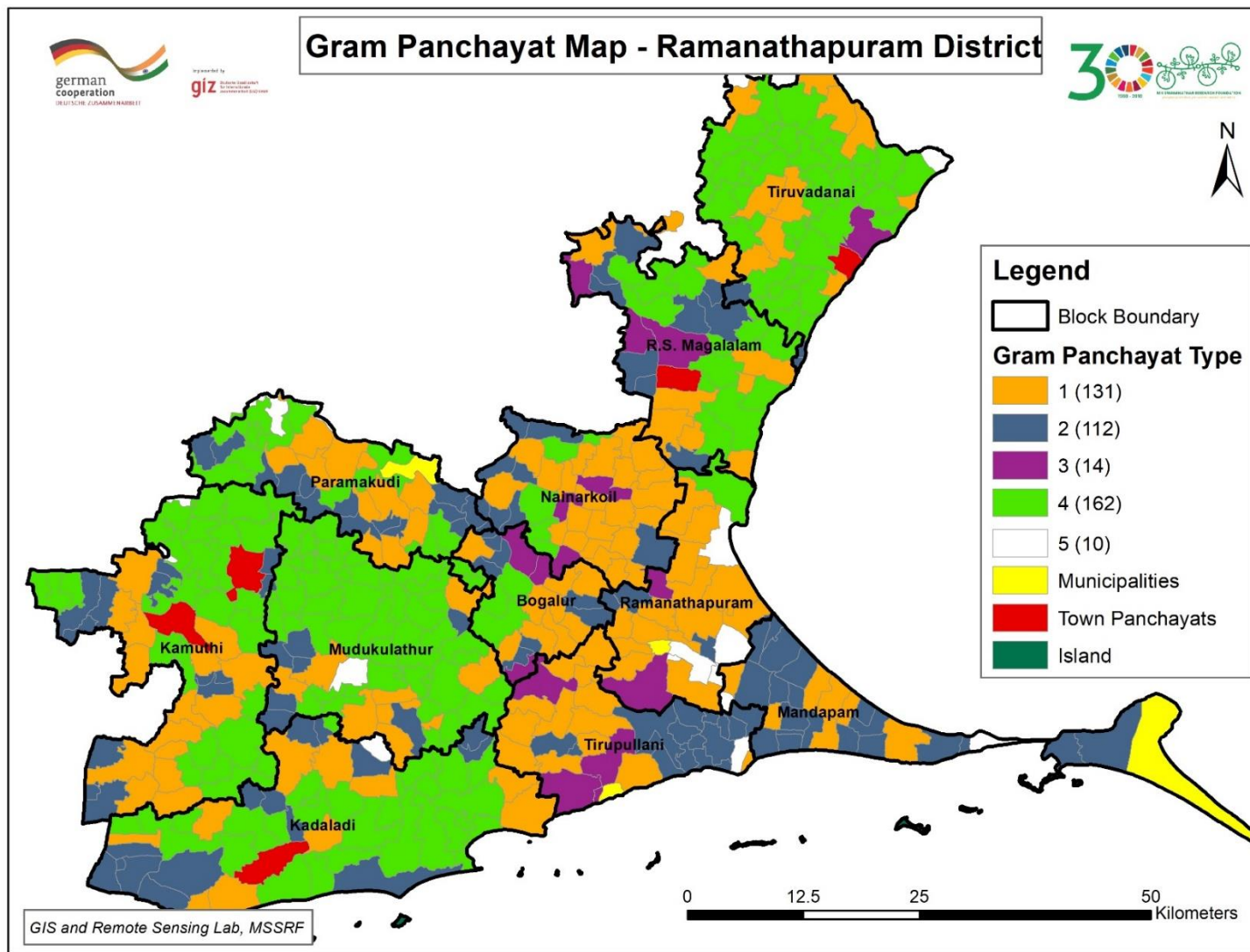
S.N	Item	Tiruvannamalai	Ramanathapuram
1	No of Blocks	18	11
2	No of Revenue Villages	1038	380
3	No of Gram Panchayats	860	439
4	No of River Basins	3	3
5	No of River Sub Basins	15	10
6	No of Catchments	3	3
7	No of Watersheds	13	7
8	No of Micro Watershed	1364	736

Progress : Composite Water Resources Management Planning

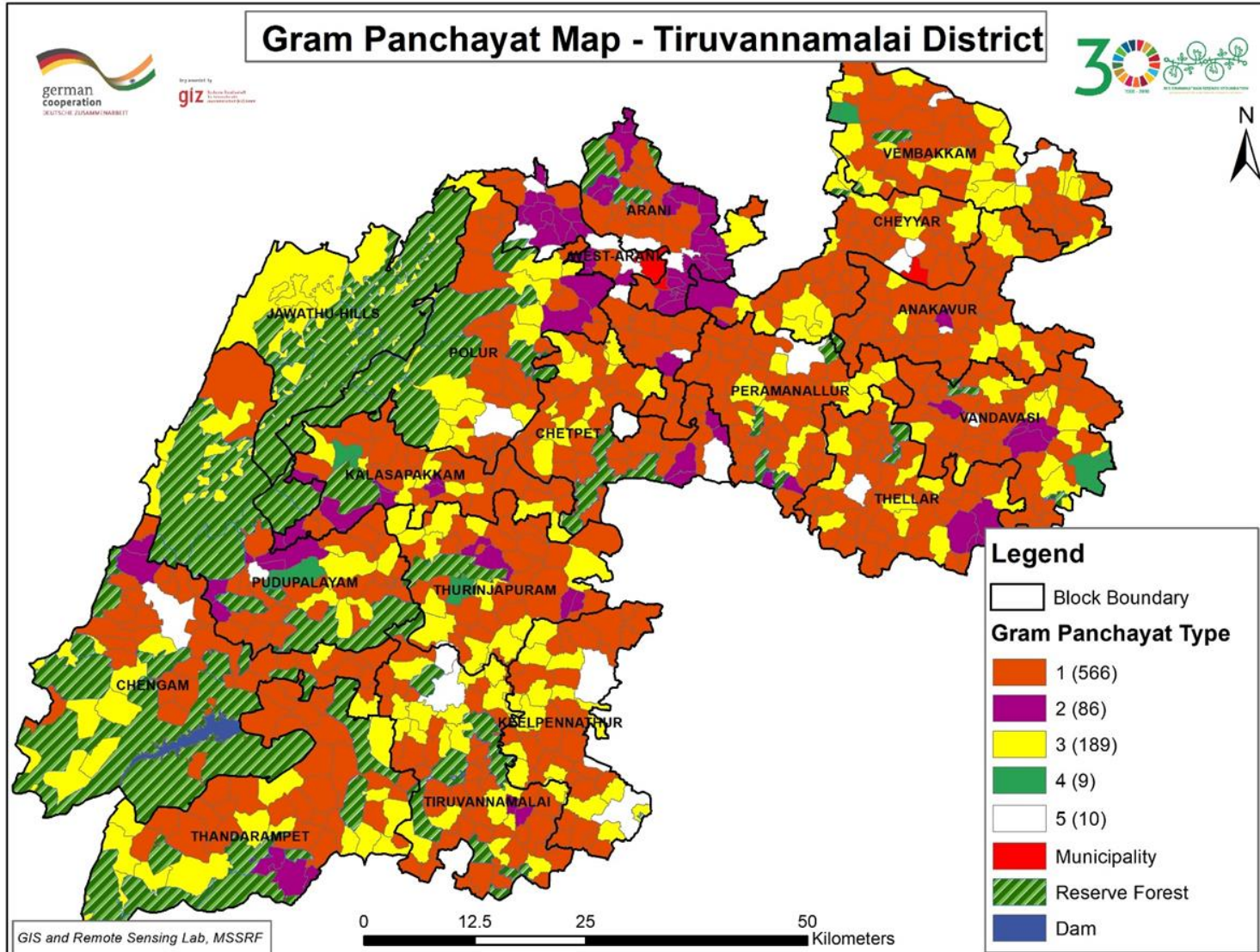
Type of GP	Ramanathapuram	Tiruvannamalai
Type 1	131	566
Type 2	112	86
Type 3	14	189
Type 4	162	9
Type 5	10	10
Total	429	860

- ❖ **Type 1** : GPs are where the GP and Revenue Village data and boundary matches
- ❖ **Type 2** : GPs are where more than one GPs are in one Revenue Village
- ❖ **Type 3** : GPs are where one GP is falling under more than one Revenue Village
- ❖ **Type 4** : GPs are where both GP and Revenue Villages are falling more than one
- ❖ **Type 5** : Missing GP and data in census 2011

Progress :



Type of GPs Ramanathapuram



Type of GPs: Tiruvannamalai

Action Plan : CWRMP Road Map for Ramanathapuram

Total No of GPs : 429

Total No of RV : 380



Action Plan for Ramanathapuram

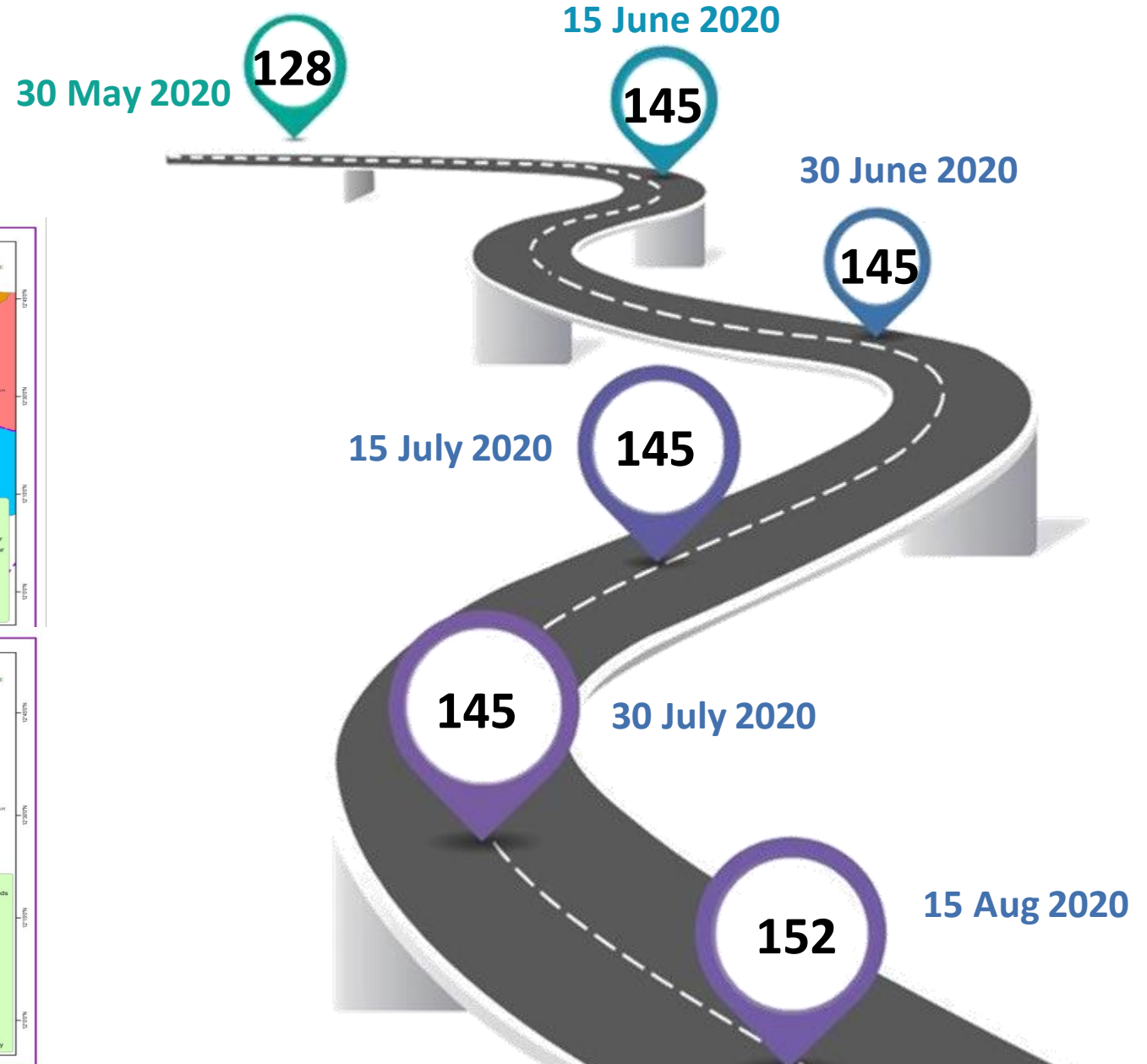
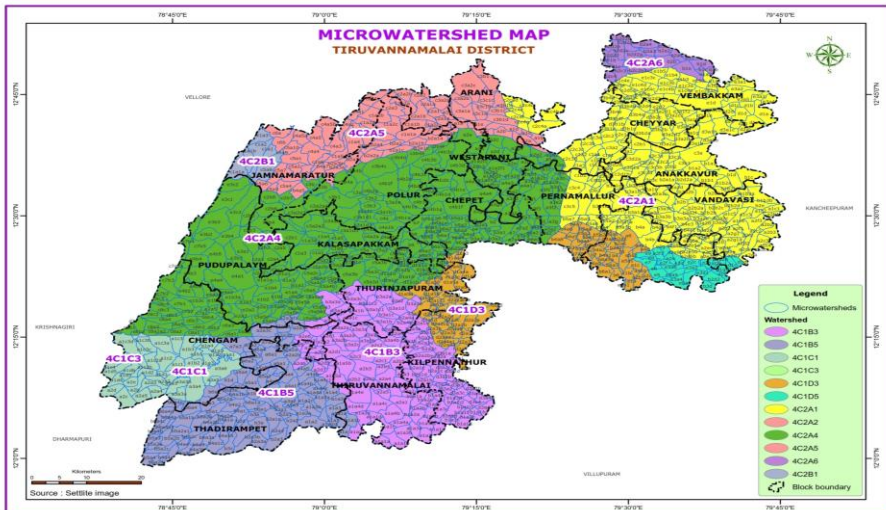
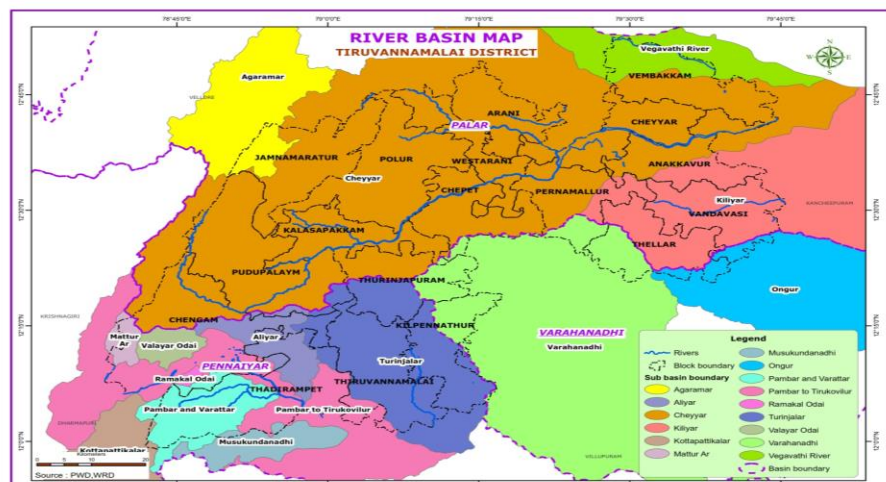
Composite Water Resources Management Planning	
CWMRP Level	Target
GP level plans	15-Aug-20
Block Level Plans	20-Sep-20
Watershed / Catchment/ sub basin plans	30-Sep-20
District Level Plans	20-Oct-20
Pilot Demonstration of WASCA Hotspots (Area of Interest)	
WASCA Hotspot Area	Name of GPs / Block
Riverbank Stabilization	Urapuli / Paramakudi
Ground Water Management	Paramakudi Block
Mangroves	Karangadu/ RS Mangalam
Wetlands	Kaaran/ Mandapam
Drinking Water: Tankas	Chithurvadi GP
Drinking Water: Ooranis	All GPs (cascade tanks) RS Mangalam and Tiruvadana
Reduction of Soil Erosion and Sea Water Intrusion	Ervadi GP, Kadaladi
GP CWRMP plans	Implementation after approval

Action Plan : CWRMP Road Map for Tiruvannamalai

No of Blocks : 18

Total No of GPs : 860

Total No of RV : 1038



Action Plan for : Tiruvannamalai

Composite Water Resources Management Planning		
S NO	CWMP Level	Target
1	GP level plans	15-Aug-20
2	Block Level Plans	20-Sep-20
3	Watershed / Catchment/ sub basin plans	30-Sep-20
4	District Level Plans	20-Oct-20
Pilot Demonstration of WASCA Hotspots		
S No	Hotspot area	Name of GPs / Coverage
1	Degraded Hills (Greening of Hillocks)	Kattukanallur/ West Arani
2	Catchment Area, Uplands	Pallamarathur/Jawad
3	Naga Kamandala Nadhi River Sub Basin (Cascade Tanks and River Rejuvenation)	Jawad Hills
4	Aquifer and Ground water restoration	Velleri/Arani, Periyakolapadi/Chengam
5	Water use efficiency	Karam/Vandavasi
6	GP CWRM plans	Implementation After Approval
Private Sector Involvement		
1	Identification of private partner with CII support	By 20 June 2020
2	Partnership of Private Sector Partner	By 30 June 2020

Ramanathapuram: 1) River Bank Stabilization and Ground Water Management

Site identified: Urapuli, Paramakudi block

- ❖ River Bank Stabilization: helps to Flood Control, Control siltation through bank stabilization and conserve river ecosystem
- ❖ Approach – Development of Mini forest along the bank with diverse tree species control erosion
- ❖ Nursery for Mini Forest near to the site Helps developing native species and generate employment
- ❖ Possible works leveraged under NREGA - Bund stabilization, nursery, planting & management of trees, Composting degradable wastes etc

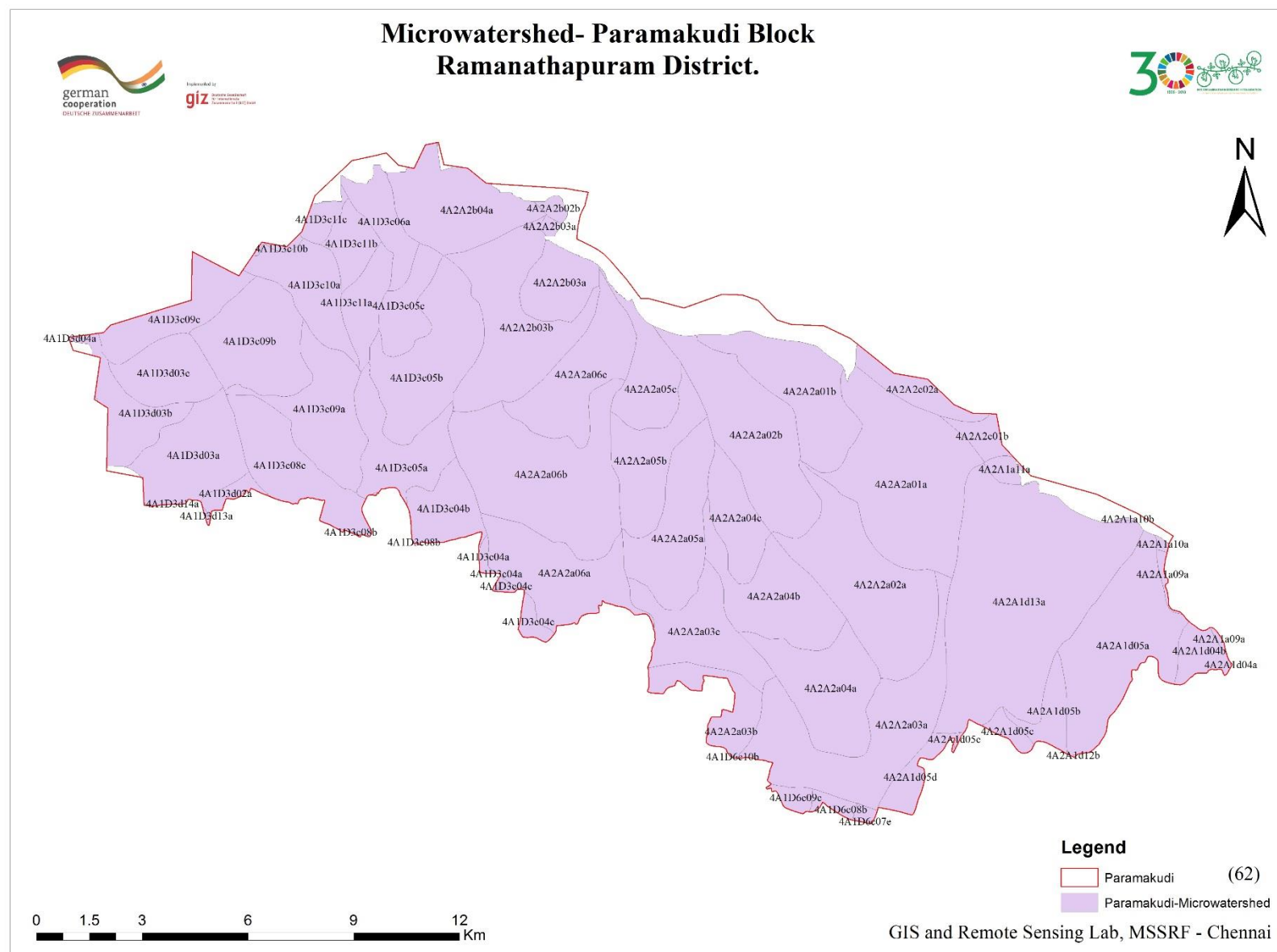


Tying up the maintenance and management of river banks through SHGs or Landless women groups helps to creating livelihoods through inter cropping of mini forest gap area with vegetables, fruits, flowers & medicinal plants

This initiates control encroachment

Ramanathapuram: 2) Groundwater Management

- ❖ Approach: Developing sources for small scale irrigation in marginalised members, along with groundwater augmentation and efficient irrigation management measures
- ❖ Possible works with NREGA – dug wells, farm ponds along with ground water augmentation technologies



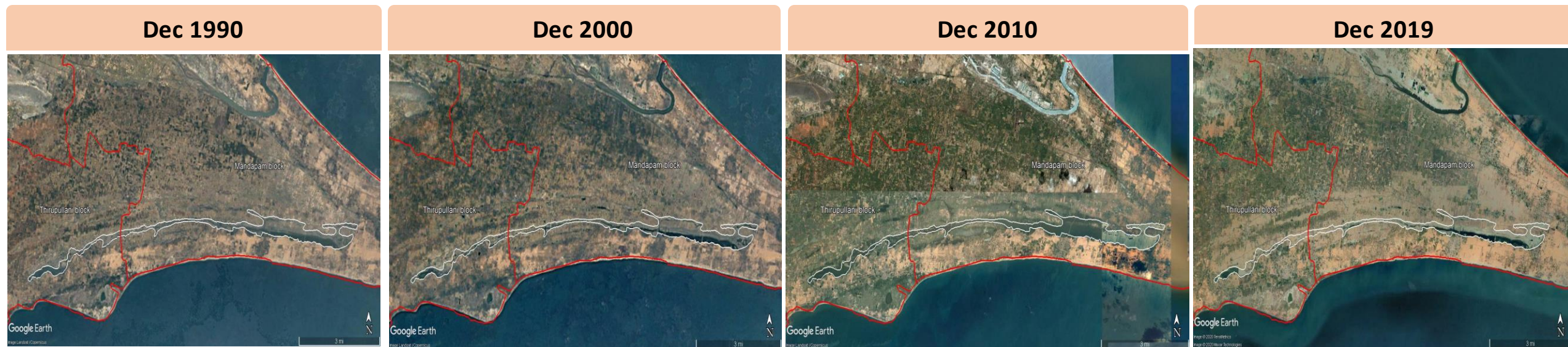


Ramanathapuram: Some of the potential works of Restoration to be considered under MGNREGA ^{giz}



- Collection of mangrove seeds/ propagules,
- Establishing nursery (Community/ SHG/ Individual),
- Clearing the mouth of the inlet feeder canals,
- Digging / desilting the channels,
- Planting the seedlings and Causality replacement

Ramanathapuram: 4) Wetlands Conservation



Prioritized site: Kaaran in Mandapam block

- Increasing rate of degradation is going on Key ecological functions – coastal flooding and erosion protection by building land seawards, water quality, floral and fauna biodiversity etc
- Restoration helps to adapt to the increasing Sea Level Rise linked adverse impacts like coastal erosion, soil salinity etc
- Potential to link with NREGA works – Stream channelization, ditching/desilting, supply and drainage channels aligning with shore line, removing weeds, nursery/planting material, planting etc

Ramanathapuram: 5) Ensuring Drinking Water – TANKA Model

Site identified for action:

- Chithurvadi
- RS Mangalam block

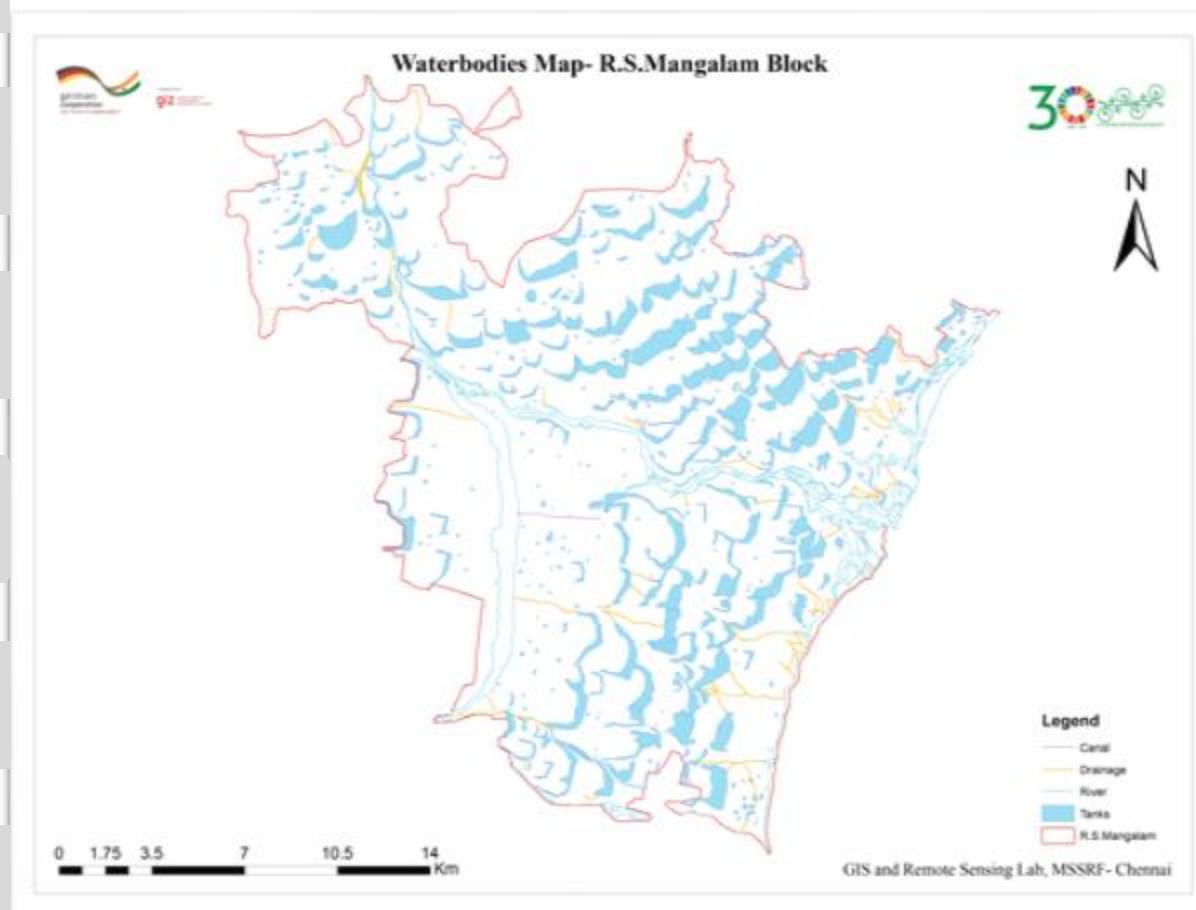


- Piloting Rajasthan Model; Storing the rainwater under ground with a small Catchment area of few square yards to acres

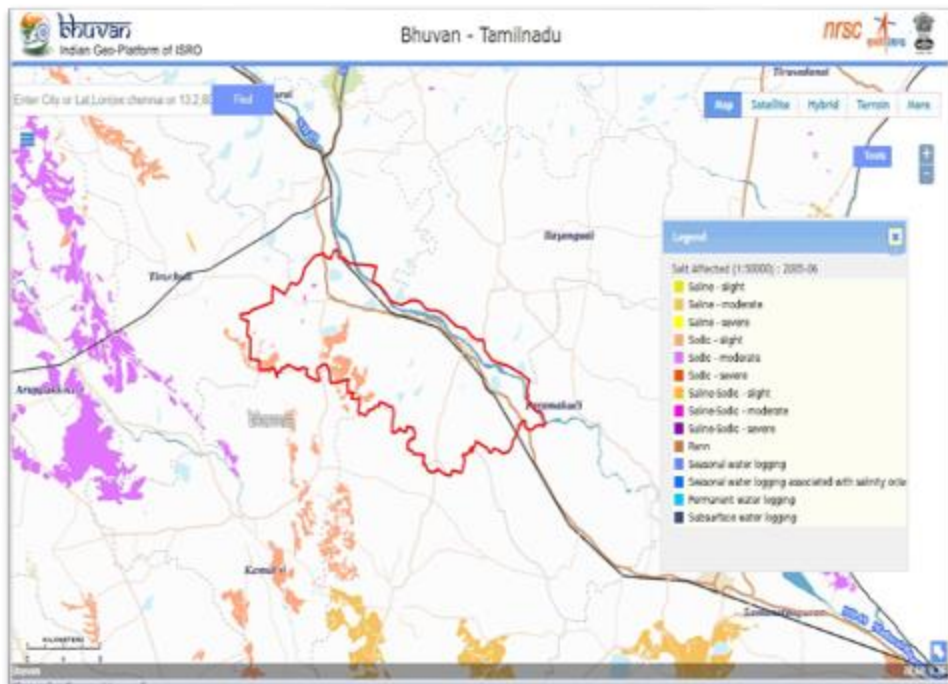
Ramanathapuram: 6) Cascade Tanks & Restoration of Ooranis

- 1 Mapping of System and Non System Tanks
- 2 Mapping of Ooranis
- 3 Linking up of Systems tanks through desilting of supply channels and ooranis
- 4 strengthening bunds
- 5 Plantations
- 6 Non System tanks: watershed approach of treatment to regulate inflows and silt traps

Tanks Map of RS Mangalam



Ramanathapuram: 7) Reduction of Soil Erosion and Sea Water Intrusion

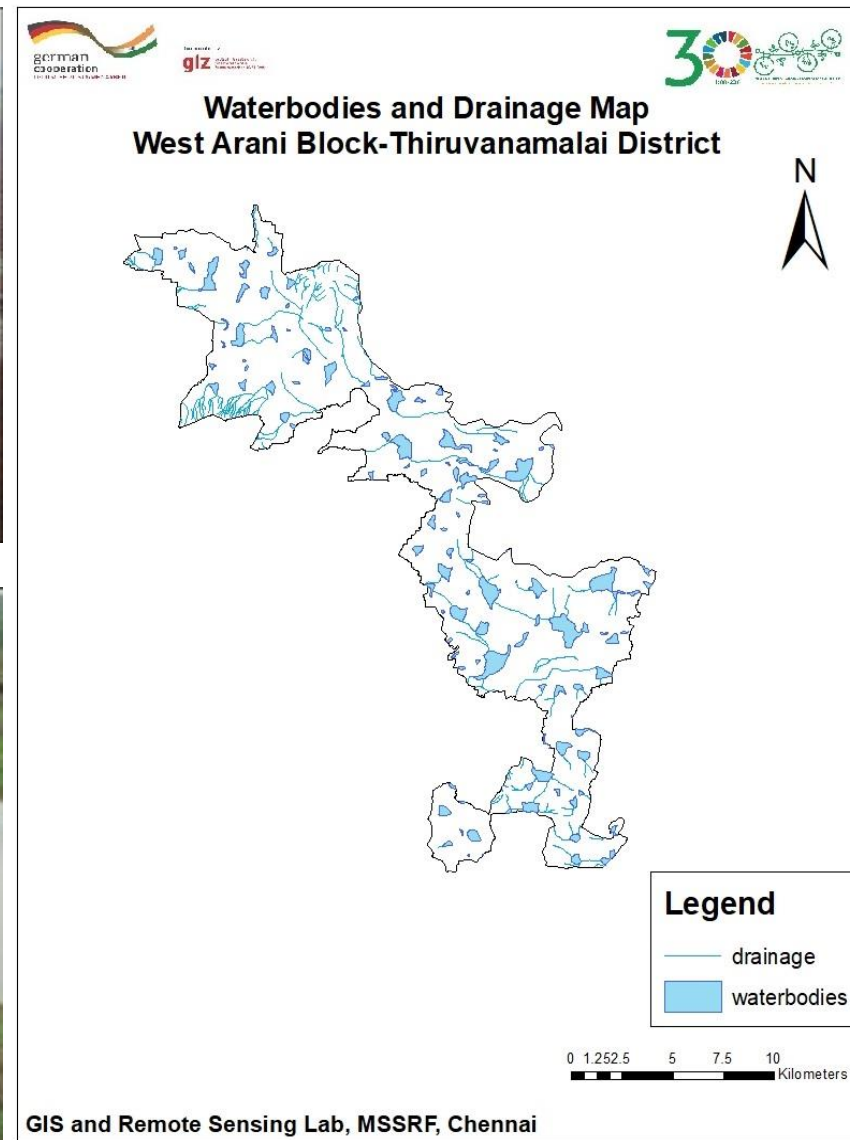


Site identified :

- Ervadi – 2 habitations,
- Kadaladi block

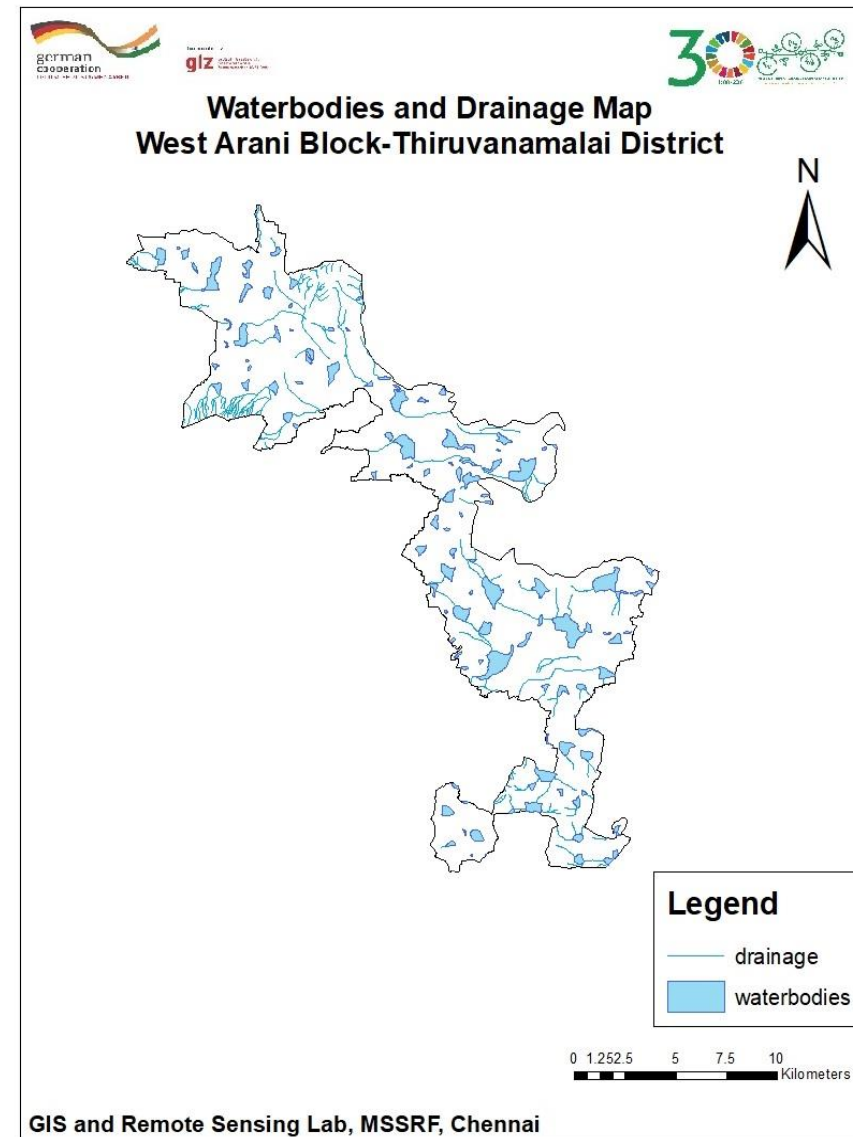
- Leading to sand deposition due to increasing sea level rise and sand erosion
- Approach – Increasing vegetation cover to prevent sand erosion like perennial grass like *Spinifex littoreus* and others
- Possible NREGA work: Plantation of the species and minor land management works an certain works under other government schemes (PWD : Control of sea water erosion)%

Tiruvannamalai: 1) Kattukanallur/ West Arani Block: Four Water Concept

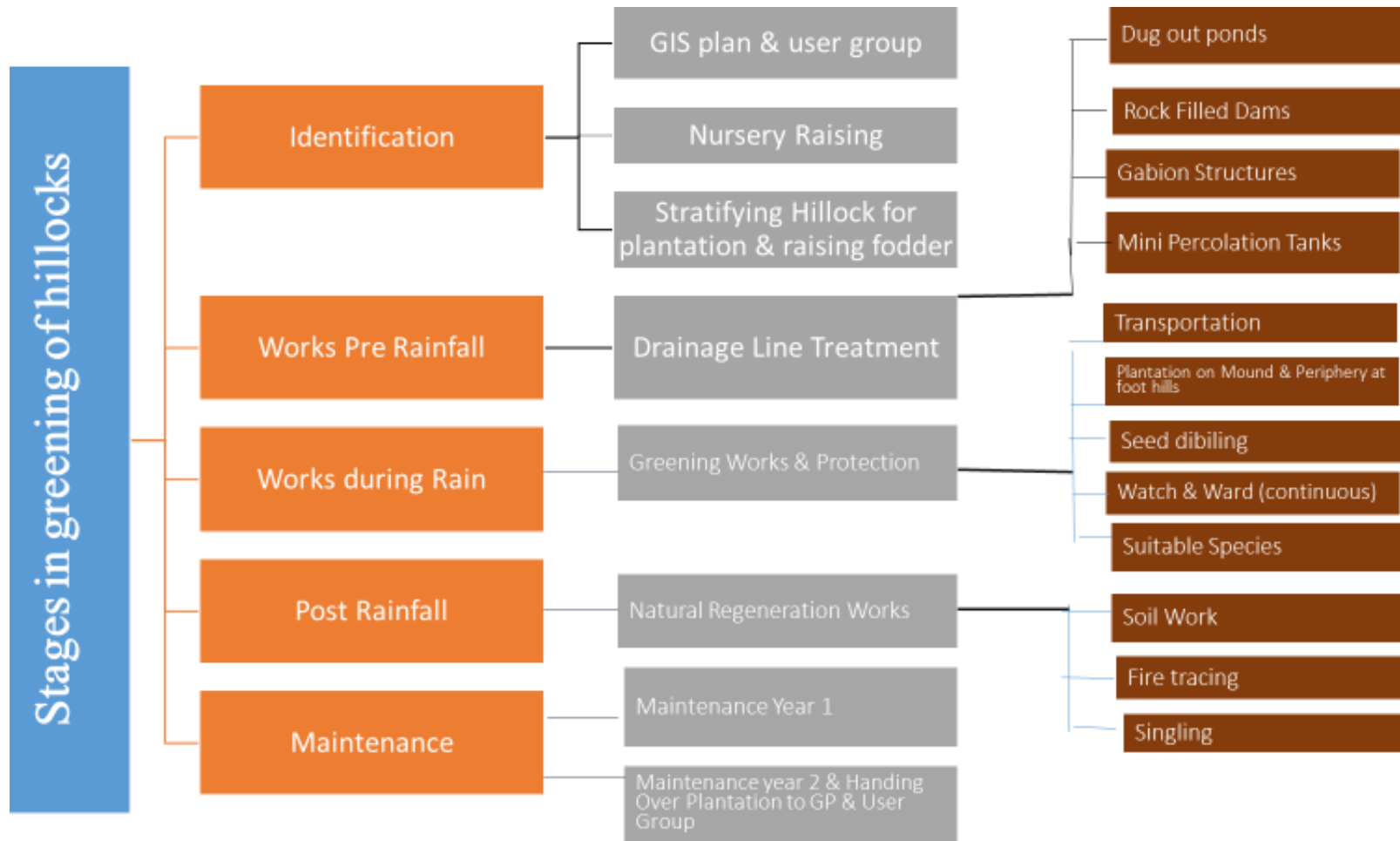
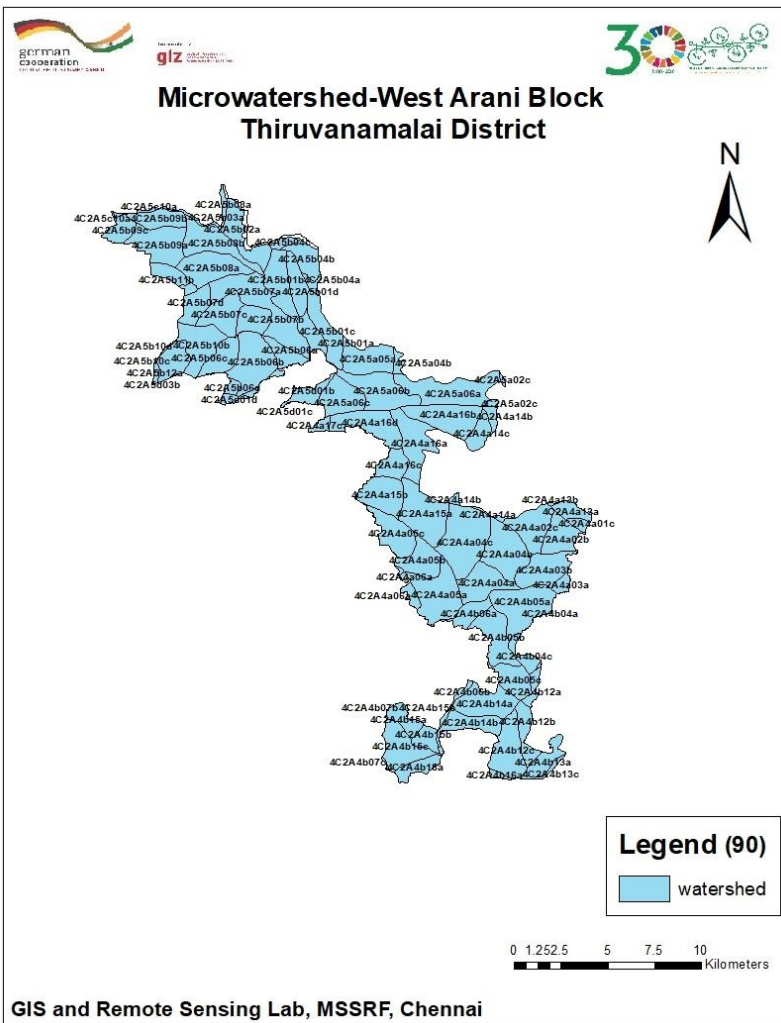


Tiruvannamalai: 1) Kattukanallur/ West Arani Block: Four Water Concept

- 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



Tiruvannamalai: 2) Greening of Hillocks at West Aarani



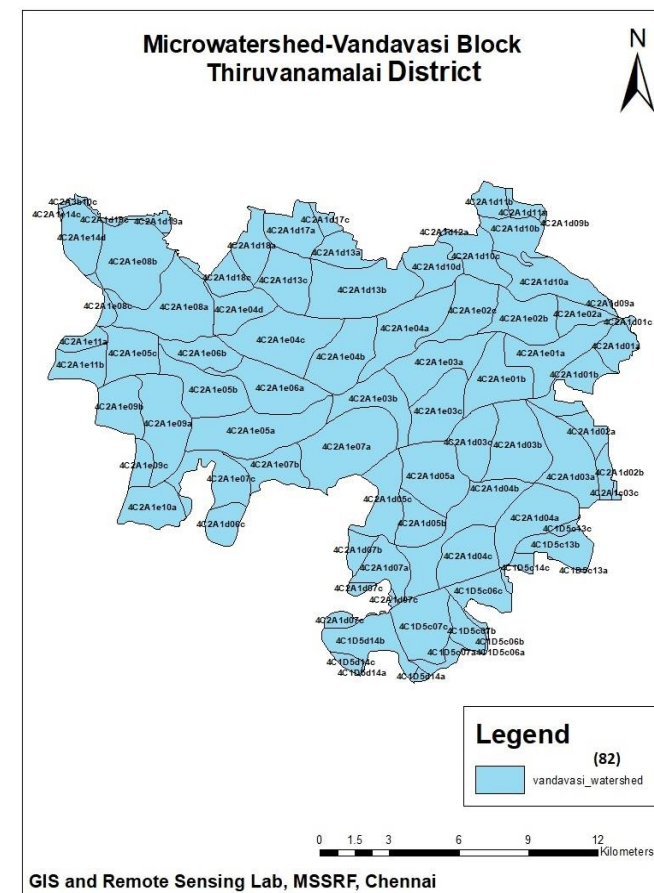
Micro-watershed maps –Arani block

Tiruvannamalai: 3) Water use efficiency: MGNREGS and Sahi fasal Convergence

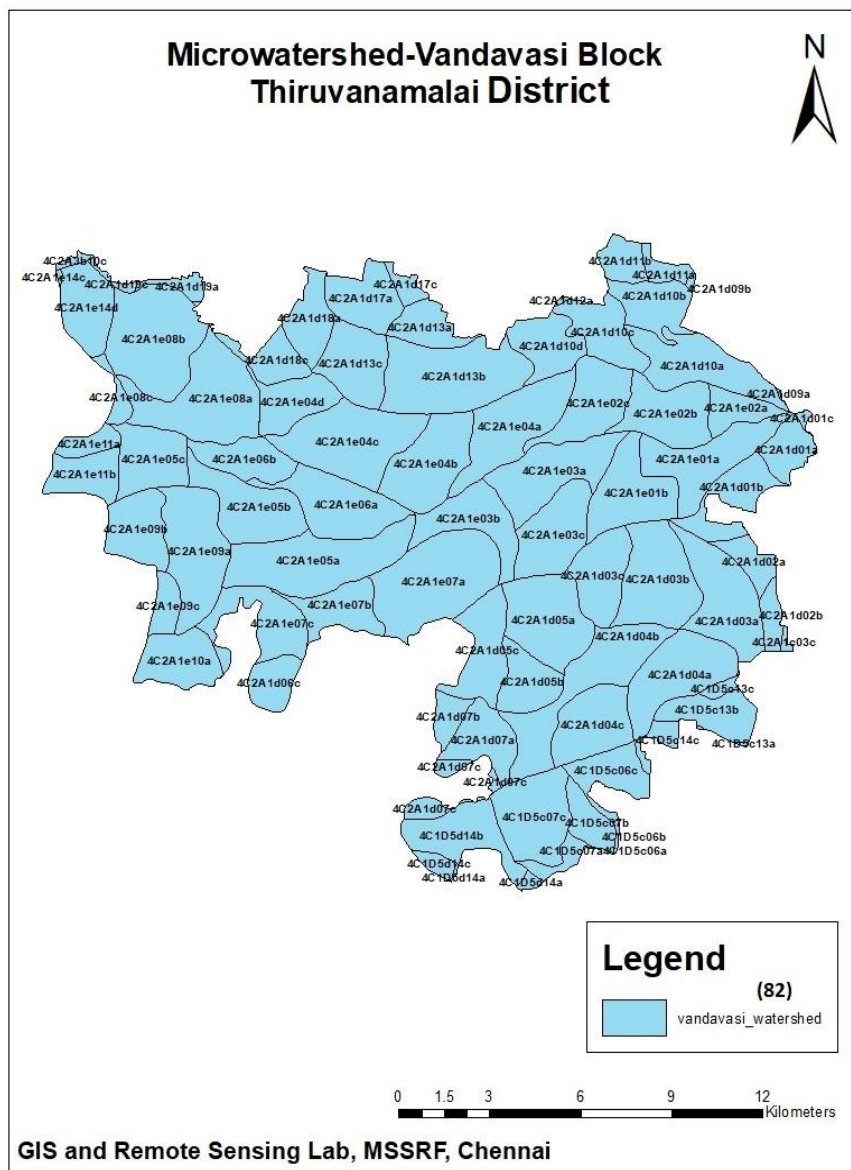
- One of the Over exploited block for the Ground water – 104%
- Paddy is the principal crop followed by sugarcane and vegetables
- The source of irrigation is both surface and ground water
- Method of irrigation is flooding and open surface irrigation
- Water use efficiency is very less.
- Proposed actions - Enhancing water use efficiency in paddy, sugarcane 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 NREGA – individual farm based composting, plantation of green leaf manures, Land development, Farm Ponds, Bund plantations

Site identified :

- Karam GP Vandavasi block



Tiruvannamalai: 4) 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

Studies and Consultations

S No	Topic	Objective	Focus District	Start Time line
1	Sea Water Intrusion	On “reducing effects of seawater intrusion into freshwater resources through vulnerability mapping, assessment	Ramanathapuram	June 2020
2	Surface and Ground Water Assessment of Aquifer, Watershed, Design of innovative models; Training Module preparation	1) Assessment of Surface and Ground Water resources (including technical baseline) 2) Creation of a data base on surface, ground water resources (GIS environment as per CWRM framework) 3) watershed assessment convergence with CWRMP and design of works, training modules	Ramanathapuram and Tiruvannamalai	Proposal development stage
3	Soil Erosion Impacts and Works for reducing impact of soil erosion	Soil moisture, soil conservation leading to water security and climate adaptation	Ramanathapuram and Tiruvannamalai	Proposal development stage
4	Documenting water management practices, climate adaptation, resilient approaches and tradition knowledge systems	Document Climate Knowledge, Systems and Approaches for CR and CA into CWRMP, at all levels (focus at Hydrology, Watershed level)	Ramanathapuram and Tiruvannamalai	Proposal development state

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