



Ministry of Education
Government of India



**Ministry of Housing
and Urban Affairs**
Government of India



MISSION AMRIT SAROVAR

JAL DHAROHAR SANRAKSHAN INTERNSHIP

Institute Name: **KINGS COLLEGE OF ENGINEERING**

Water Body Name: **SEMBIRANKULAM**

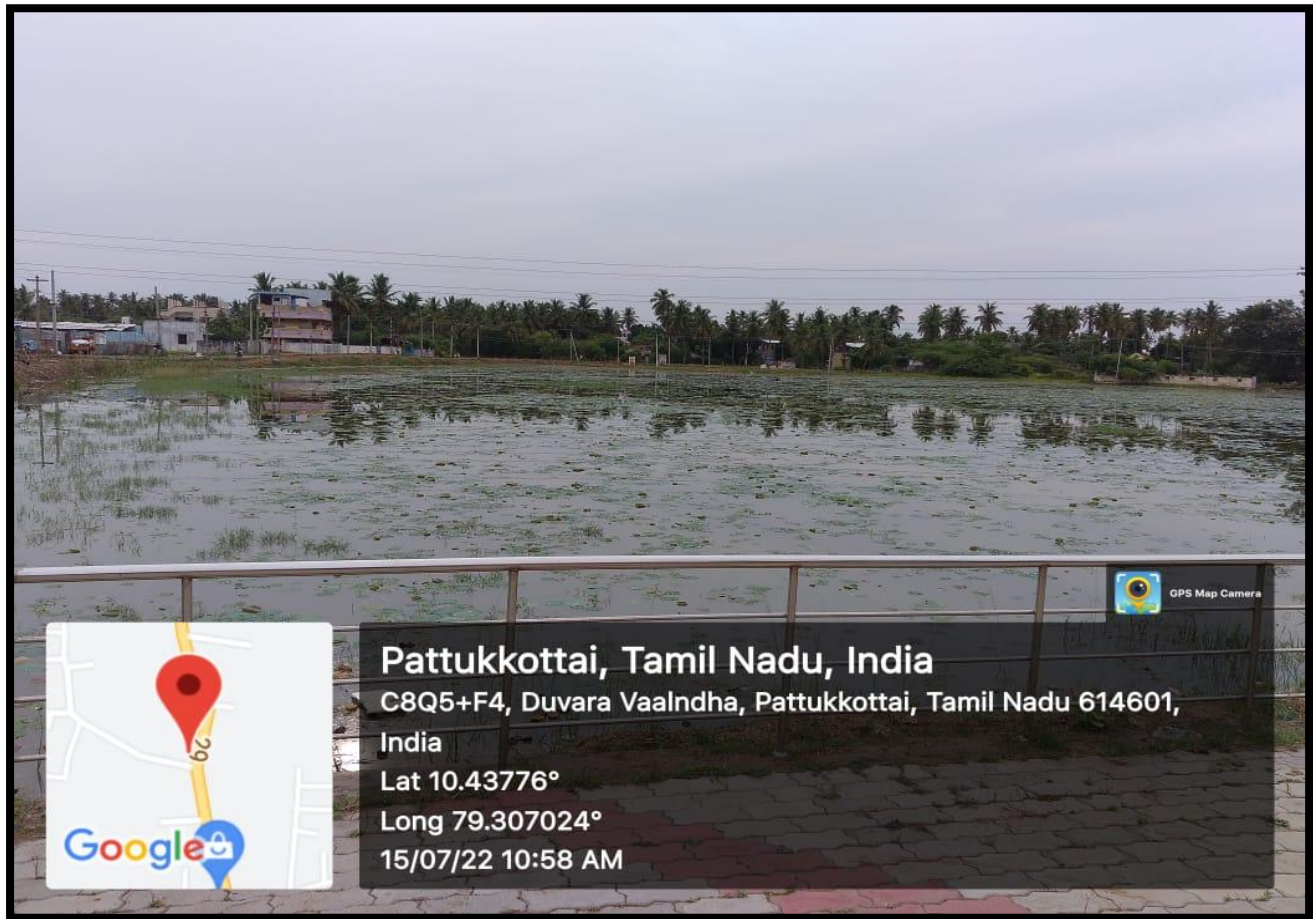
INO Name: **Dr. R.SARAVANAN**

Period of Report: **15th July 2022 – 02nd AUGUST 2022**



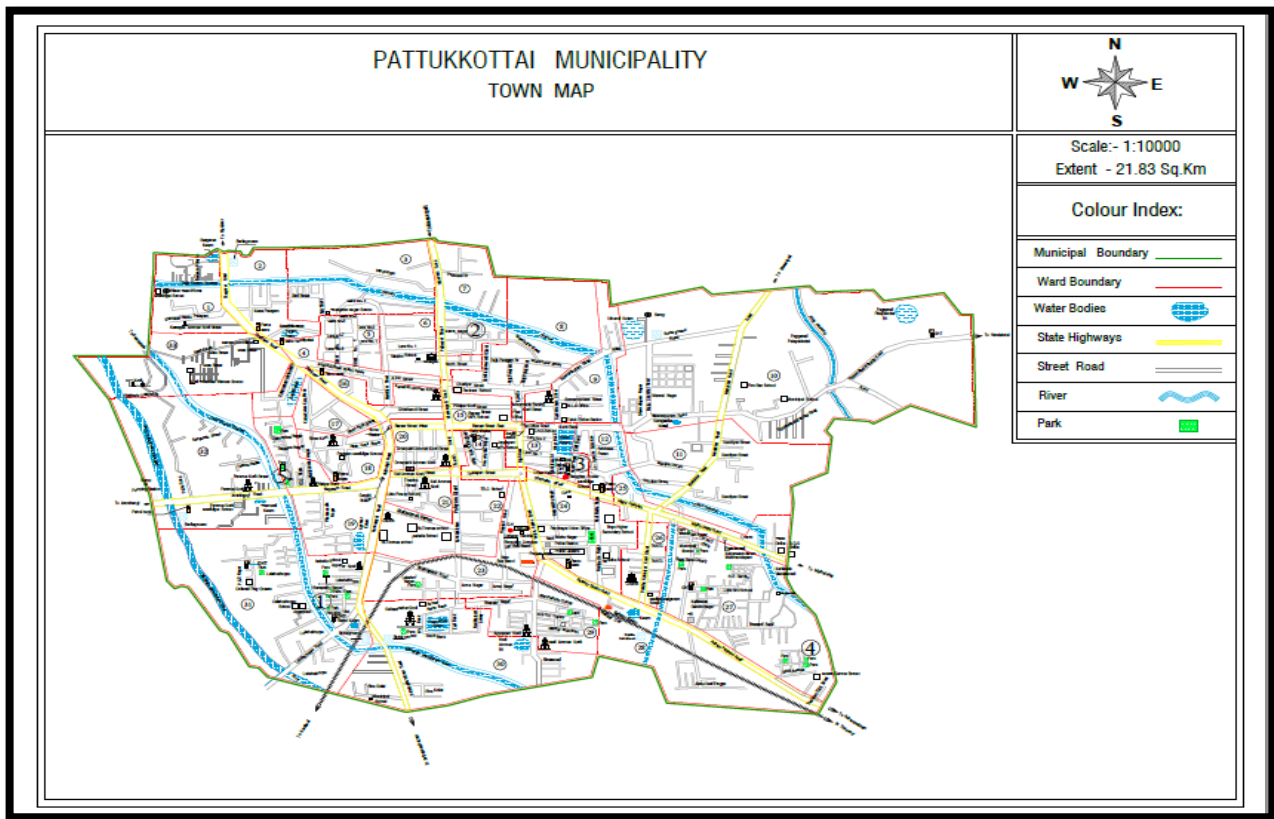
DETAILED PROGRESS REPORT

HISTORY & ORIGIN:



- ✓ **SEMBIRANKULAM** is a water body situated in Pattukkottai block of Thanjavur district in Tamil Nadu.
- ✓ It is situated in rural part of Thanjavur district of Tamil Nadu.
- ✓ It is located in Aladikkumulai, one of the 56 villages of Pattukkottai Block of Thanjavur district.
- ✓ **SEMBIRANKULAM** water body is the ancient water body in Pattukkottai block covering 6 acres (23500 sqm) and maximum depth is said to be 15 feet.
- ✓ It's origin is around 150 years ago. Based on the survey from local people the water body was initially maintained by local Jamin Shri.Muthu Nayakkar,

HISTORICAL CONTENT & GEOGRAPHICAL SETTING:



- ✓ **SEMBIRANKULAM** water body is located at 10.43776° Latitude and 79.307024° Longitude covering an area of 23118 sqm.
- ✓ The area was calculated using total station survey. As per the survey from the local people, the boundary area has been gradually reduced.
- ✓ From the data gathered, it is learnt that, the main source for this water body is the channel from Kattaru river.
- ✓ There are 2 inlets in the water body leading from the sub-channels from Kattaru river.
- ✓ Since the water is untidy and due to the presence of garbage, plastic wastes and algae, physical measurement of depth of the water body was not carried out.
- ✓ But from the people's voice, the depth of the water body is said to be 15 feet.

SPATIAL TEMPORAL ANALYSIS



- ✓ **Spatial temporal analysis was done, to analyze the land-use changes and their impact on the water body and surrounding area.**
- ✓ **Analysis was carried out from the primary and secondary data collected from the Municipal office and Google earth.**
- ✓ **QGIS software is used for performing the spatial temporal analysis. QGIS is used for relating, integrating, and analyzing information of the water body.**
- ✓ **We also observed that, there is a gradual decrease in the boundary of the water body.**
- ✓ **With the help of the spatial temporal analysis we can examine the behavior of the water body.**
- ✓ **Comparison of the calculated area of the water body with the map values and reasons for decrease in area of the water body were identified.**
- ✓ **Student interns actively participated in group discussion regarding the spatial temporal analysis.**

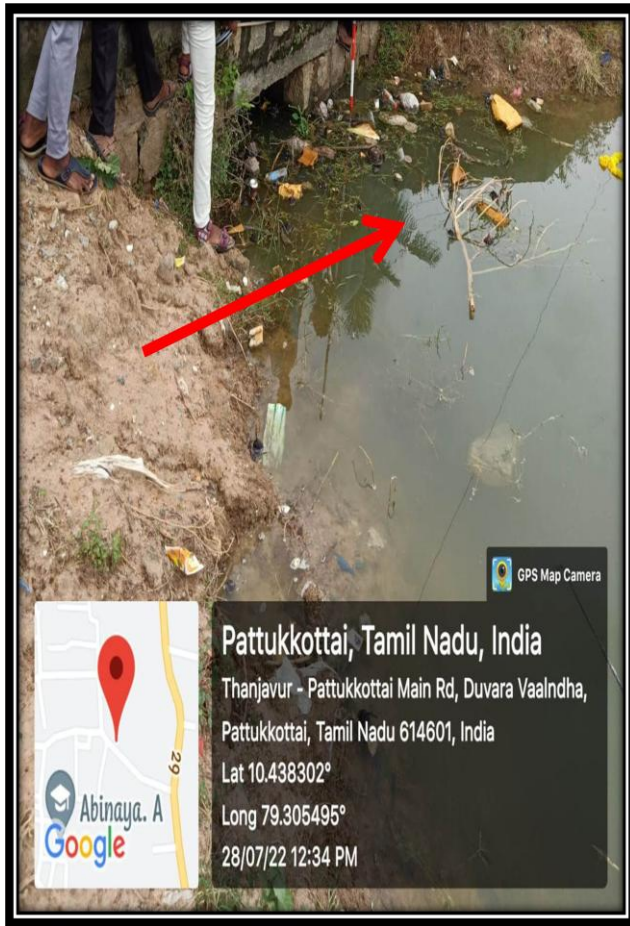
WATER SAMPLING & TESTING



- ✓ **Water samples were collected. Since the depth was more, samples were collected from the boundary areas only, for safety purposes.**
- ✓ **Collected water samples were tested in our laboratory. Various water quality parameters like pH, BOD, COD, Turbidity and Alkalinity were analyzed.**

S.NO	TEST CONDUCTED	RESULT	REMARKS
1	pH	8.5	Water is alkaline in Nature.
2	BOD	250 ppm	High BOD value, because of solid waste disposal into the water body.
3	COD	350 mg/l	High COD value, due to the presence of oxidizable organic matter in the water body.
4	Turbidity	9.5 NTU	It indicates the water quality as BAD.
5	Alkalinity	135 mg/l	Presence of sewage in the water body makes the water more alkaline.

HEALTH OF THE WATERBODY



- ✓ The water body is not clean. It has lot of garbage, plastic wastes and algae spread over it and is not good for drinking.
- ✓ Presence of solid wastes and organic matters in the water body has increased the BOD, COD level.
- ✓ Alkalinity level also seems to be high due to sewage mixing in the water body.
- ✓ Another water quality parameter tested was Turbidity and found to be 9.5 NTU. It indicates the water quality as BAD.
- ✓ From the results of the water sample testing, it may be concluded that, the water from Sembirankulam is not good for drinking. The water body may be utilized for irrigation but proper measures are to be taken for clearing the garbage, plastic wastes and algae spread over the water body.

STATUS OF CHANNEL INFLOW



- ✓ The inlet of the water body was analyzed by our interns.
- ✓ The water body has 2 inlets and both the inlets are surrounded by garbage and plastic wastes.
- ✓ The inlet should have a proper screening to avoid entry of solid particles into the water body.
- ✓ Also because of the garbage, organic wastes & plastic wastes the water quality parameter has also drastically changed.
- ✓ Out of the 2 inlets, screening was available in 1 inlet. But it is damaged and hence garbage, organic wastes & plastic wastes enters the water body.
- ✓ In addition during rainy days water flow might get reduced, due to the presence of garbage, organic wastes & plastic wastes at the inlet, that affecting the level of the water body.

SCOPE FOR REJUVENATION



SEMBIRANKULAM water body can be rejuvenated as a vibrant public place by providing:

- ✓ **Landscape near the water body.** It gives good ambience to the water body thereby attracting the people to visit the place.
- ✓ **Play area for children.** It attracts the kids.
- ✓ **Path-way for walking and exercise.** Youngsters and enthusiastic people will utilize the place for physical training.
- ✓ **Lightings using solar panels.** It gives eco-friendly provision for electricity and safety during night time.
- ✓ **Bio-toilets for public use.** It will keep the place tidy and also acts as a provision for nature calls.

OTHER HIGHLIGHTS OF THE WATER BODY



Our interns conducted a survey among the local people and gathered information about the water body.

- ✓ **The water body is mainly used for fishing and irrigation purposes.**
- ✓ **The boundary of the water body has been drastically reduced.**
- ✓ **The quality of the water body has been dropped because of improper maintenance.**
- ✓ **Proper awareness should be created among the people to avoid littering.**

Things to be prevented:

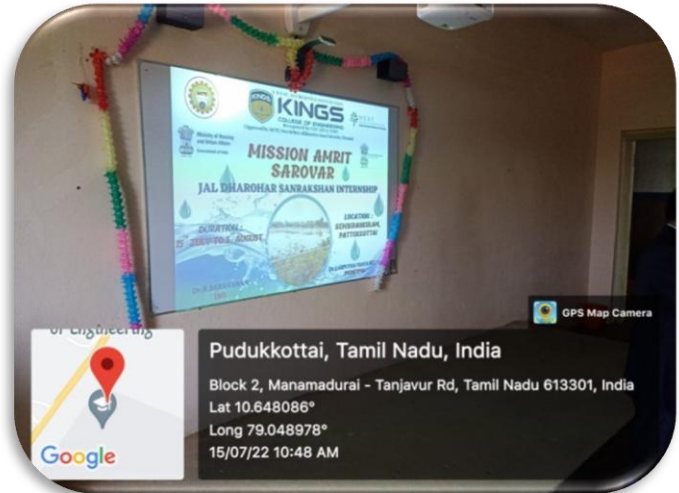
- ✓ **Local people use the water body for washing and bathing, which should be prohibited. Since it will affect the aquatic life of the water body.**
- ✓ **Since the water body is located in a rural area, some people are using it as a toiletry place. It should be strictly prevented.**
- ✓ **Local people should avoid littering near/into the water body.**

CONCLUSION



- ✓ **Conserving water is important because it keeps water pure and clean while protecting the environment.**
- ✓ **Rainwater harvesting should be implemented for aquifer recharge and integrated water cycle management to be adopted.**
- ✓ **Screening should be done at the water body inlet to avoid entry of garbage, organic wastes & plastic wastes into the water body.**
- ✓ **Pathway is provided at one side of the water body. It should be extended on all sides.**
- ✓ **Washing & bathing should be prohibited at the water body and water should be used only for fishing & irrigation.**
- ✓ **Landscaping, kids play area, pathway for walking & exercise, solar lightings, bio-toilets can be provided at the water body for vibrant public use.**
- ✓ **Every drop counts. Hence saving water is necessary. It can be possible only with the help of the public, who are the consumers.**
- ✓ **Let's join our hands to save water together!**

SOME GLIMPSES OF THE INTERNSHIP



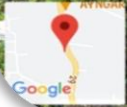
Pre-planning for internship and guidelines to students by INO



Surveying at SEMBIRANKULAM water body using Total station



Surveying at SEMBIRANKULAM water body using GPS

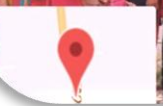


Pattukkottai, Tamil Nadu, India
 C8Q5+F4, Duvara Vaalndha, Pattukkottai, Tamil Nadu 614601, India
 Lat 10.439377°
 Long 79.306894°
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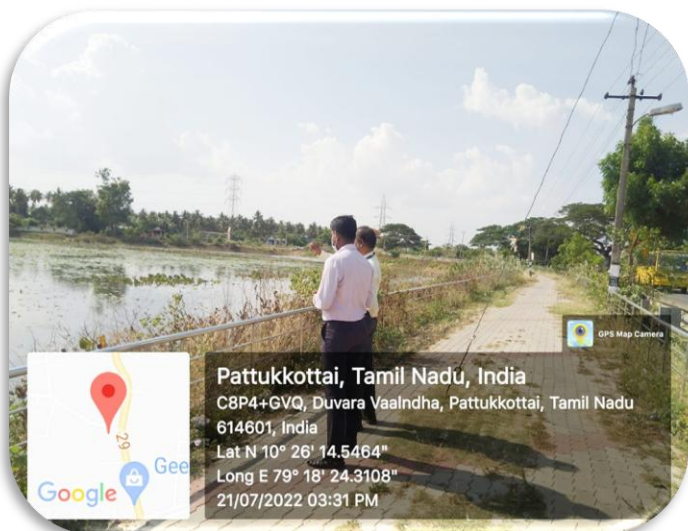
Inlet at the water body, Sembirankulam

MISSION AMRIT SAROVAR
JAL DHAROHAR SANRAKSHAN INTERNSHIP
DURATION : 15TH JULY TO 5TH AUGUST
LOCATION : SEMBIRANKULAM, PATTUKKOTTAI
Dr. R.SARAVANAN INO
Dr. J.ARPUTHA VIJAYA SELVI PRINCIPAL



Pattukkottai, Tamil Nadu, India
 C8Q5+F4, Duvara Vaalndha, Pattukkottai, Tamil Nadu 614601, India

Display of poster at the water body Sembirankulam



Pattukkottai, Tamil Nadu, India
 C8P4+GVQ, Duvara Vaalndha, Pattukkottai, Tamil Nadu 614601, India
 Lat N 10° 26' 14.5464"
 Long E 79° 18' 24.3108"
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Pattukkottai, Tamil Nadu, India
 C8Q5+F4, Duvara Vaalndha, Pattukkottai, Tamil Nadu 614601, India
 Lat N 10° 26' 16.2168"
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Monitoring of Internship progress by INO



Spatial temporal analysis at lab



Comparison of the calculated area of the water body with the map values.



Inspection of the water body inlet



Collection of water samples at the waterbody, Sembirankulam



Water sample testing at lab



Survey among the local people near the water body



**STUDENT INTERNS WITH
PRINCIPAL Dr.J.ARPUTHA VIJAYA SELVI & INO Dr.R.SARAVANAN**



LET'S JOIN OUR HANDS TO SAVE WATER TOGETHER !!!