Auroville Institute for Design, Energy & Water (DEW)
Auroville Centre for Scientific Research (CSR)

Towards Sustainable Water Resources Management

09.3.2010 to 11.3.2010

Regional Water Management

GOAL

The goal of Auroville in term of integrated water management is to create an enabling body at the watershed level involving multifarious stakeholders in rural, urban, peri-urban and industrial areas that will own, manage and maintain the water resources through a comprehensive water resource management plan

OBJECTIVE

The major objective is to fight saline water intrusion and to sustain the water resources with users and stakeholders active participation.

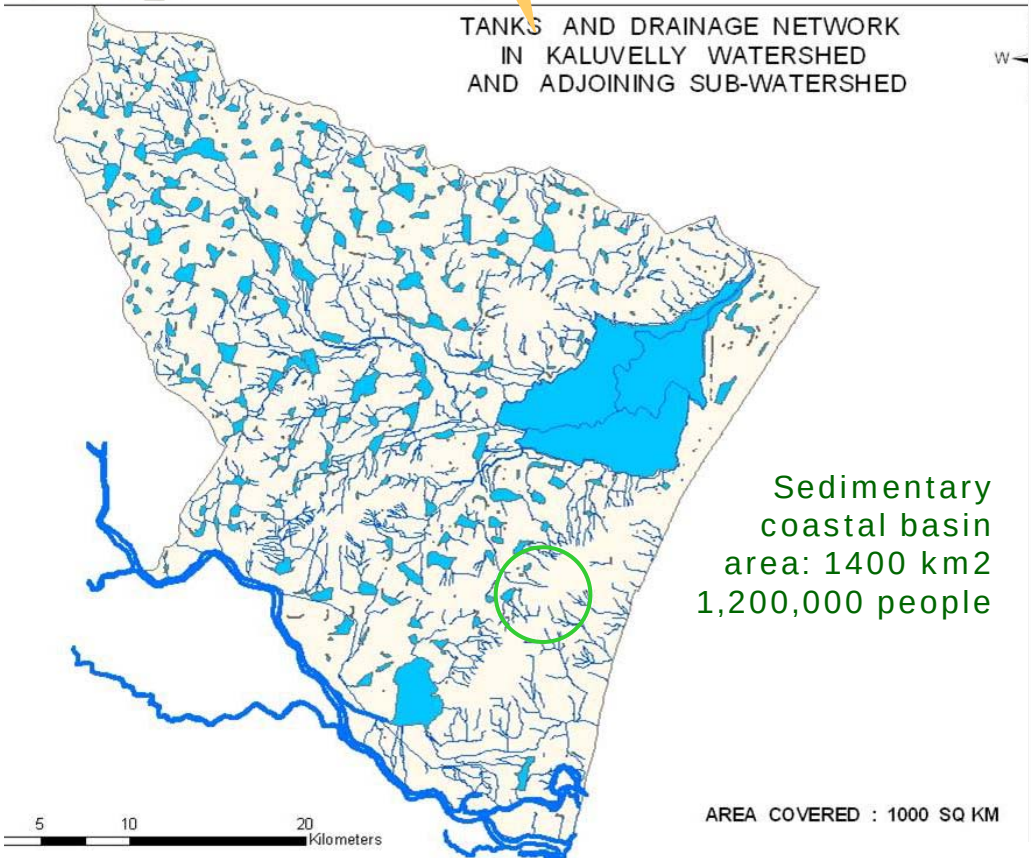
Recognition

- UNESCO endorsed HELP Basin Program in 2004
- International seminar on International Seminar on Sustainable Water management for the bioregion – Sept 2004
- Visit of the President, His Excellency, Dr. A.P.J. Abdul Kalam in November 2004

Main area of operations

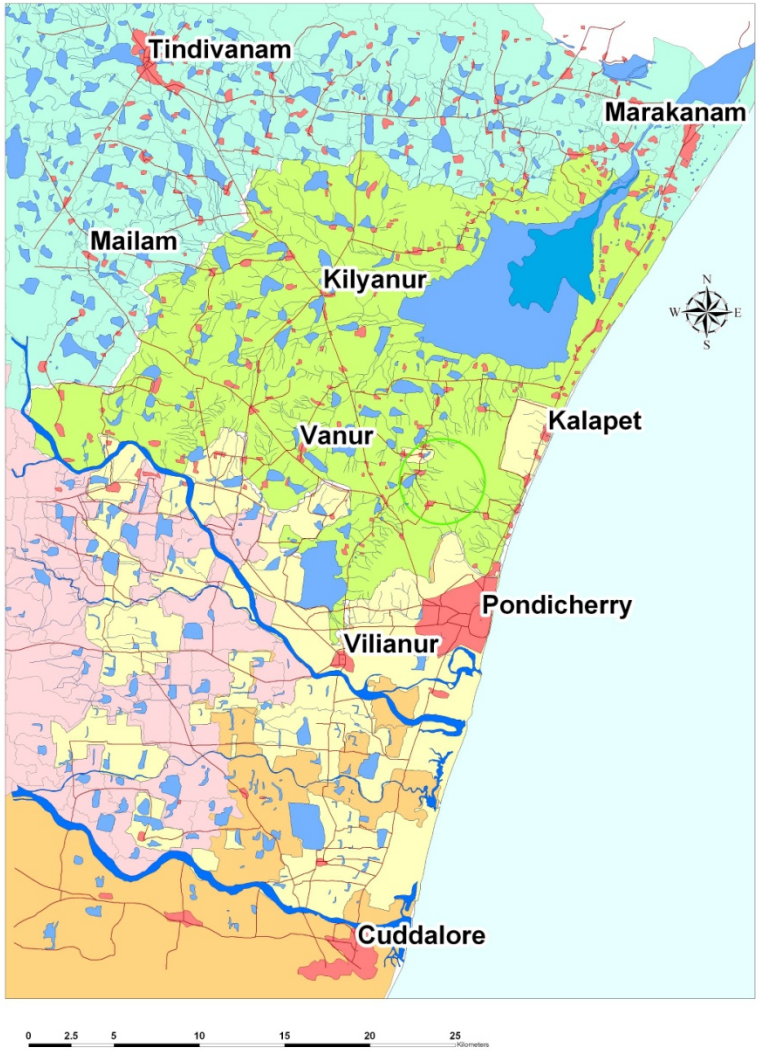
UNESCO HELP Basin Program

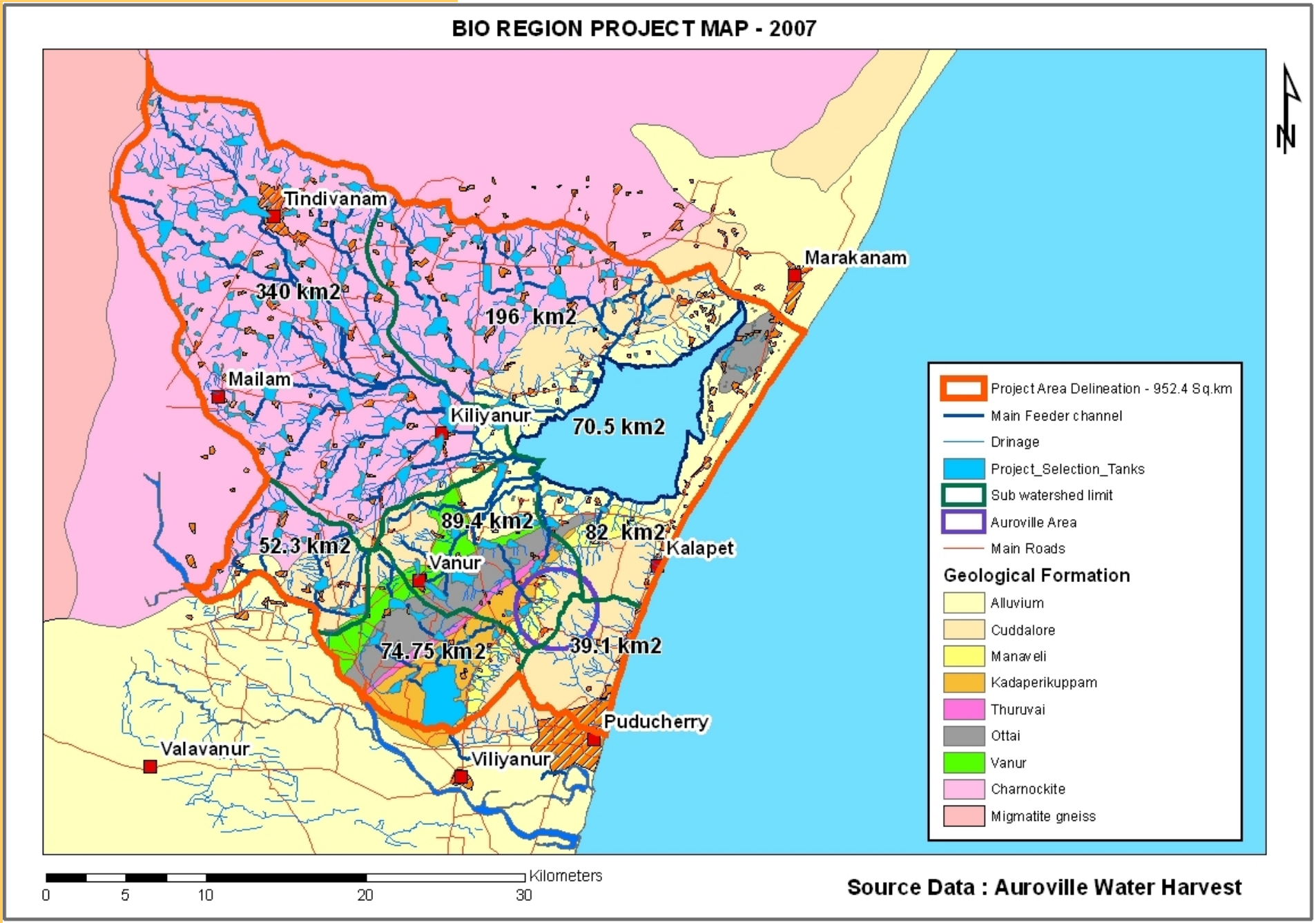
Pondicherry - Kaluvelly Coastal Watershed



Sedimentary coastal basin area: 1400 km2
1,200,000 people

AREA COVERED : 1000 SQ KM

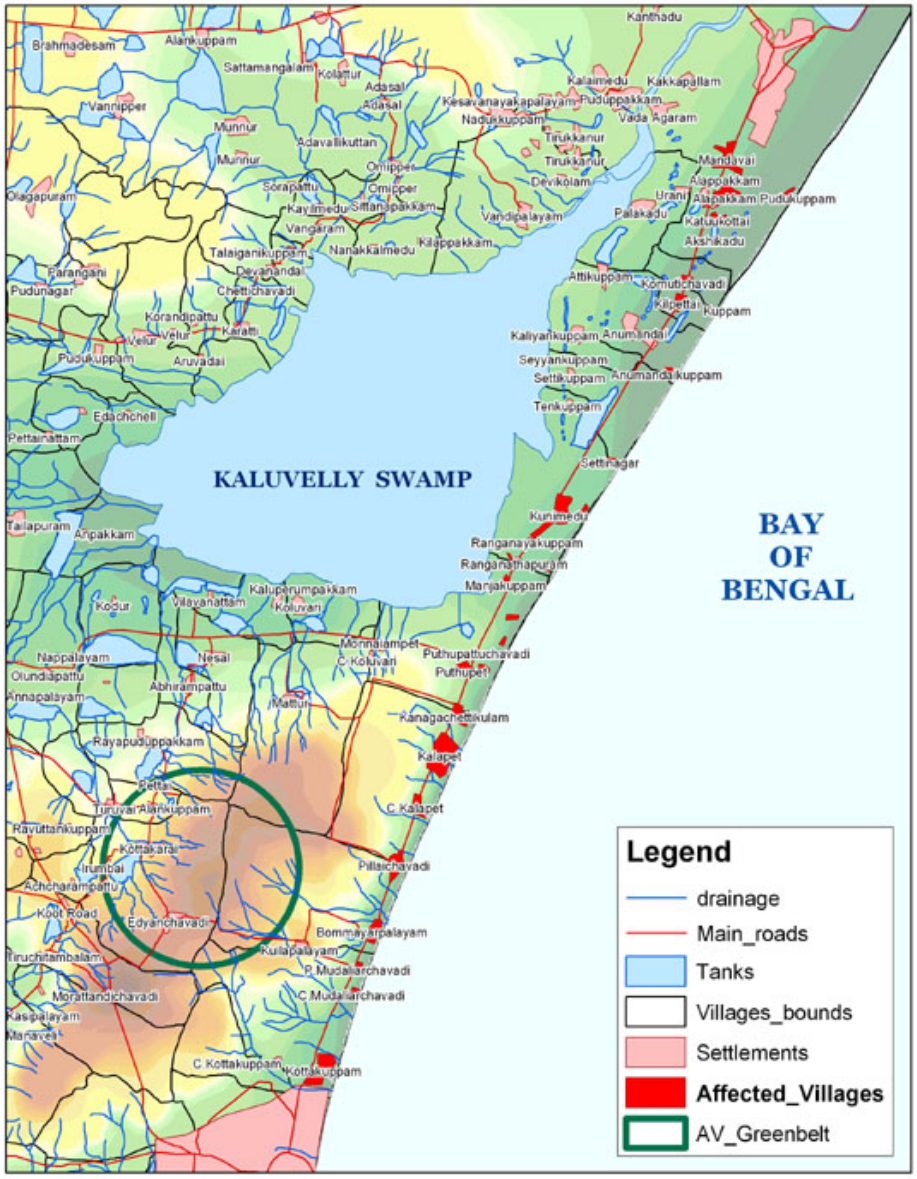



BIO REGION PROJECT MAP - 2007
Tindivanam
Marakanam
340 km2
196 km2
Mailam
Kiliyanur
70.5 km2
89.4 km2
82 km2
52.3 km2
Kalapet
Vanur
74.75 km2
39.1 km2
Puducherry
Valavanur
Viliyanur
Project Area Delineation - 952.4 Sq.km
Main Feeder channel
Drinage
Project_Selection_Tanks
Sub watershed limit
Auroville Area
Main Roads
Geological Formation
Alluvium
Cuddalore
Manaveli
Kadaperikuppam
Thuruvai
Ottai
Vanur
Charnockite
Migmatite gneiss
Kilometers
0
5
10
20
30
Source Data : Auroville Water Harvest

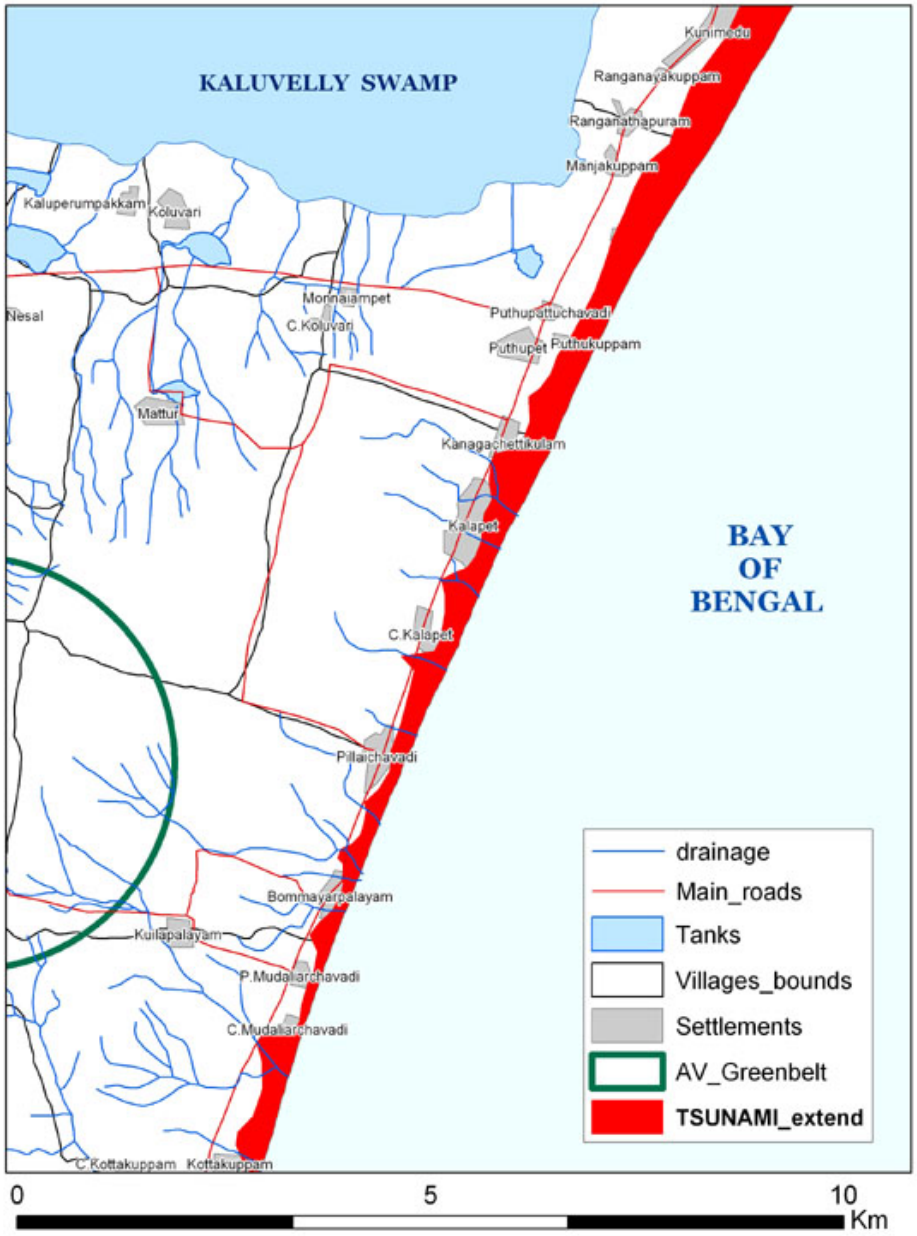
Outline of the HELP programme design and plan

- ***Hydrology:*** Field investigations, equipments, and modeling to assess how the hydrological system (surface and underground) works, and to quantify freshwater resource and its evolution.
- ***Environment:*** Improve understanding of the salinisation processes, in order to be able to prevent it.
- ***Life:*** Physical causes of water resource quantity and quality decrease are deep rooted in the way water is perceived and handled by individuals and society. That's why Harvest is engaged in educational activities toward the local population.
- ***Policy:*** Building of a model and proposition of guidelines usable for water management at a regional scale.

Location map of tsunami affected villages in Auroville bioregion



EXTEND OF LAND COVERED BY TSUNAMI WAVES



Present situation of land and communities

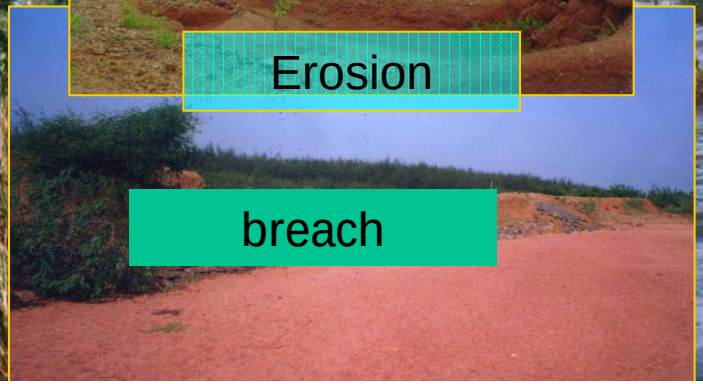
State of Water Structures in the Area

Damaged weir

Erosion

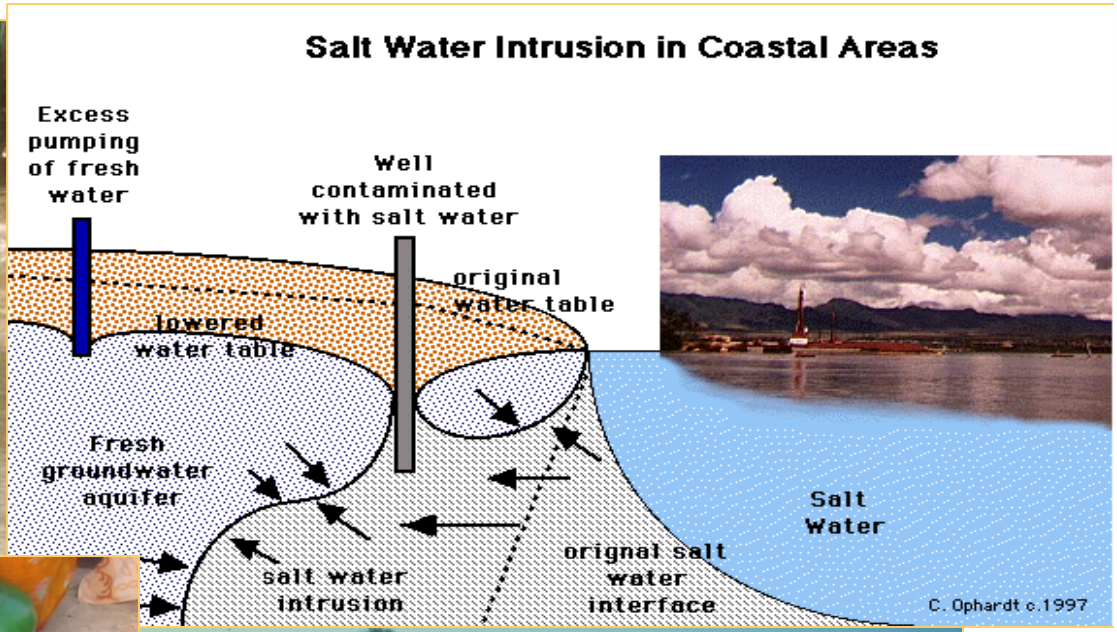
Silted check dam

Weir covered by vegetation

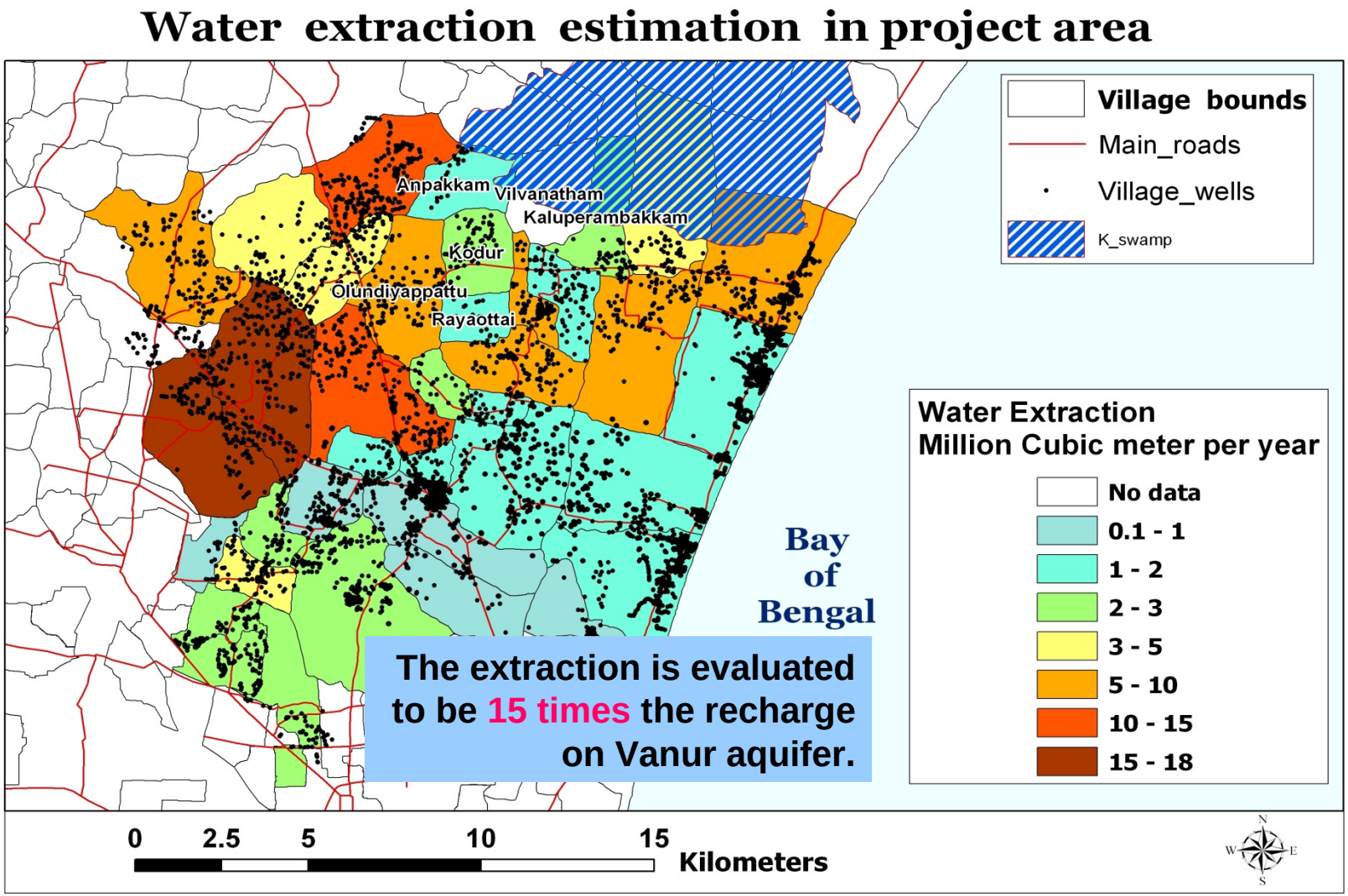


breach

Local resource problems affecting communities



Over extraction



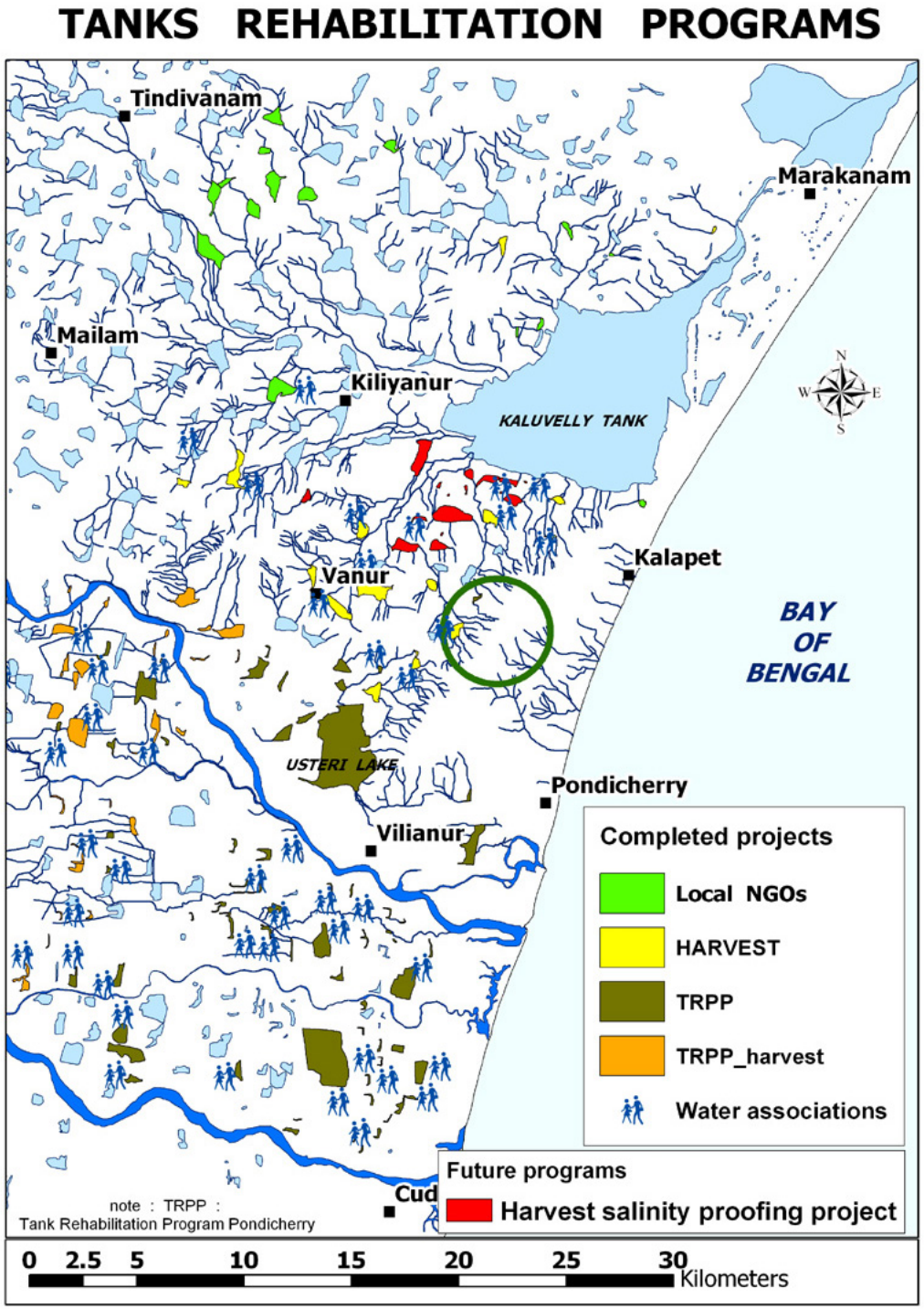
The extraction is evaluated to be 15 times the recharge on Vanur aquifer.

Strategy:

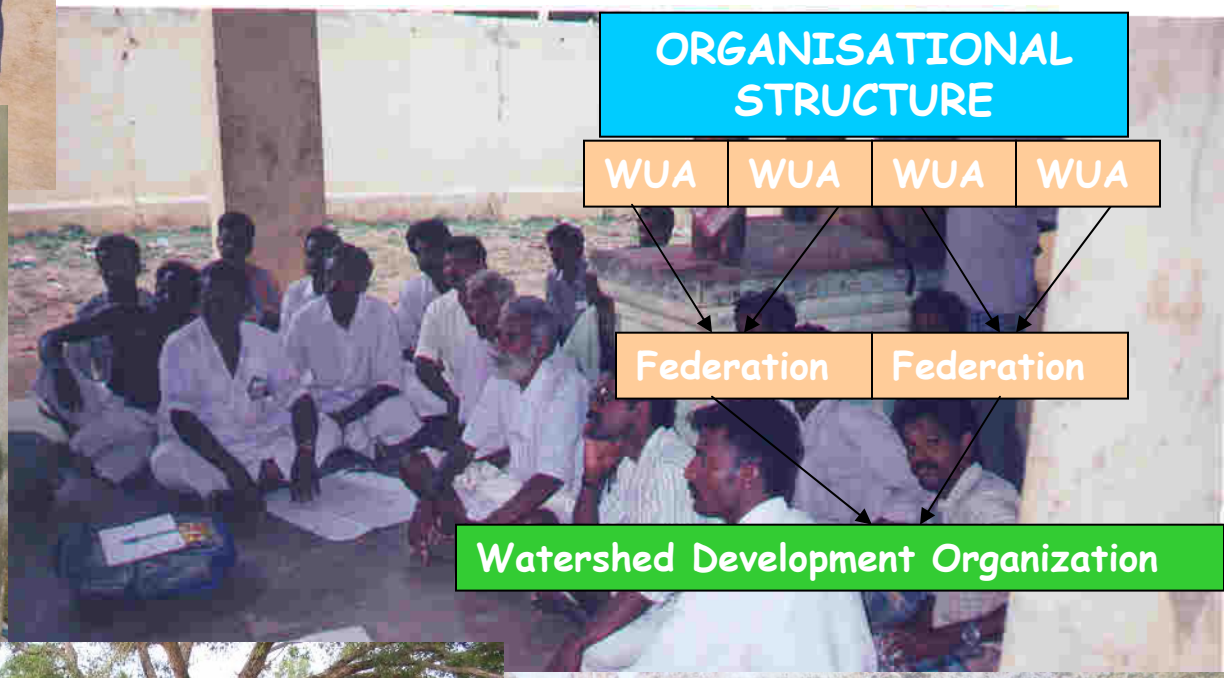
The Ongoing Rem

Capacity building of com
sustainable manner throu

- Rainwater harvesting
- Tank Rehabilitation
- Groundwater recharg
- Sanitation
- Environmental awarer & education
- Community mobilizati
- Social extension
- Capacity building

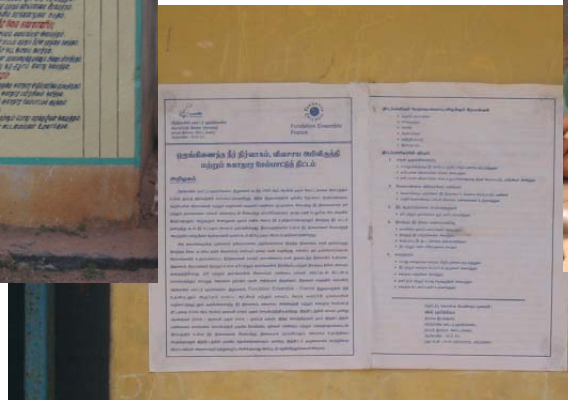


Involving important stakeholders on Water Resources Management through active participation



Meeting with various groups

Awareness creation through drama, pamphlets, notice boards video shows



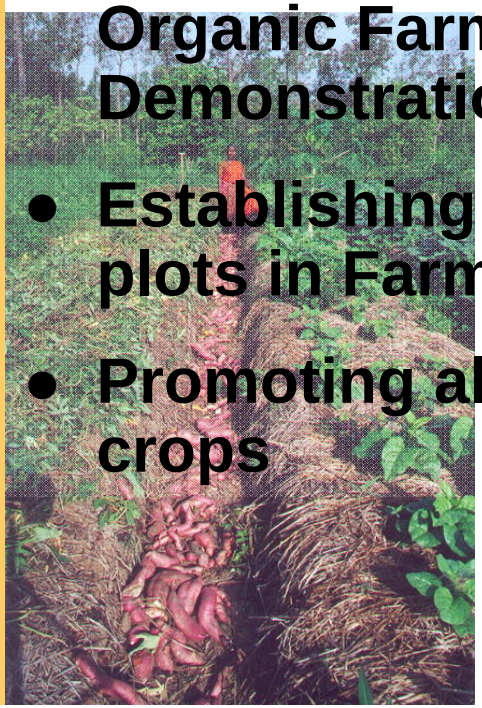
Training programs – with Men, Women and Children

Soil, crop and water management

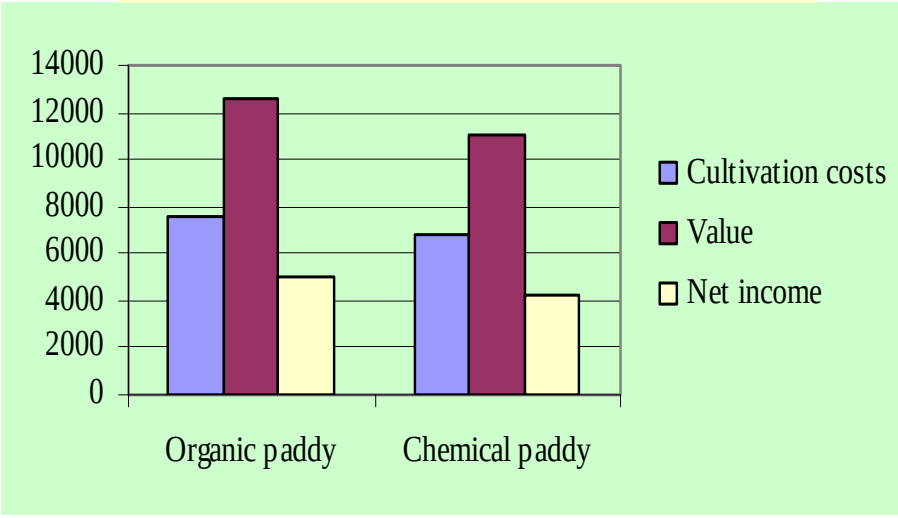
- An attempt to convert the polluted soil into living soil to stabilize the water cycle
- Protecting groundwater overexploitation by regulating the irrigation

Alternative farming – organic and EM

- **Conducting Crop and Water Management Trials in farmers Field**
- **Establishing Integrated Organic Farming Demonstration Plots.**
- **Establishing Fodder plots in Farmers fields**
- **Promoting alternate crops**



Cost analysis (Paddy)

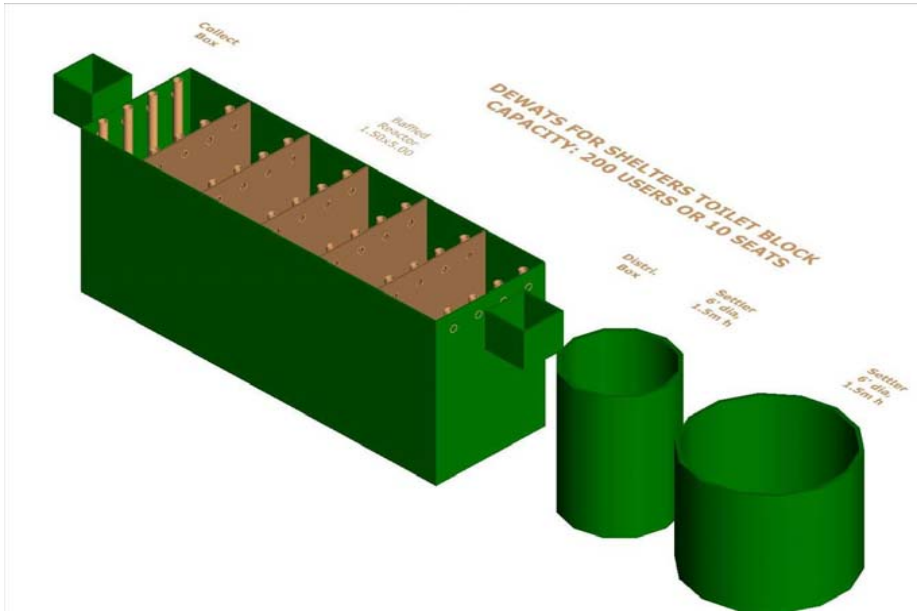


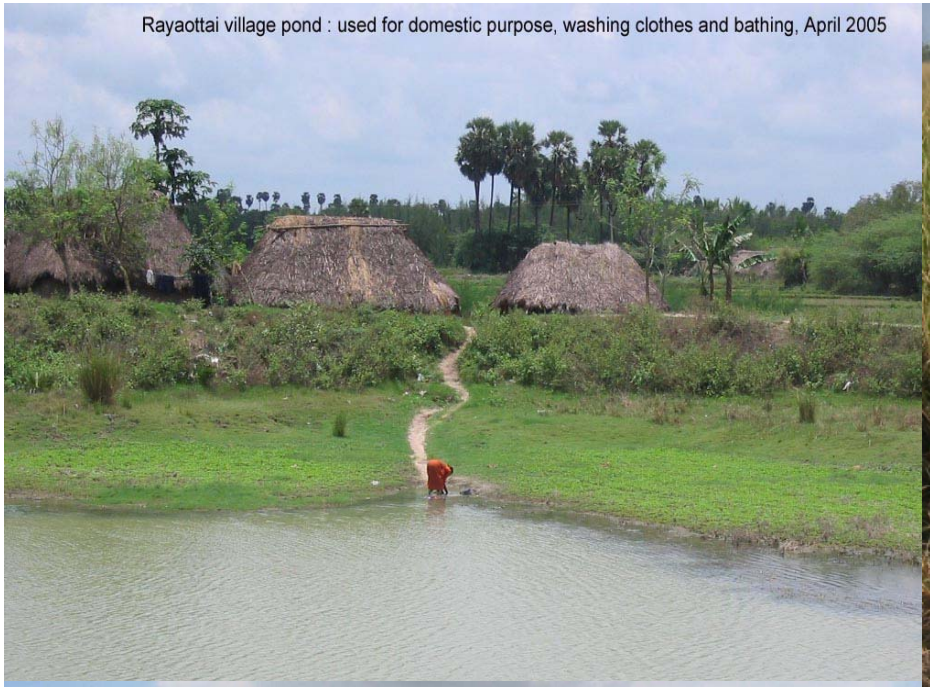
Sanitation & Drinking Water

- **Conducting sanitation and public health awareness programs, exhibitions, street plays.**
- **Conducting competition and exhibition for School children.**
- **Trainings on health, hygiene, sanitation, composting**
- **Formation of water and sanitation committees**

Construction of sanitation facilities

- Solid waste management
- Compost pits
- Improvement of Community Toilets
- Construction of model individual Eco San Toilets
- DEWATS



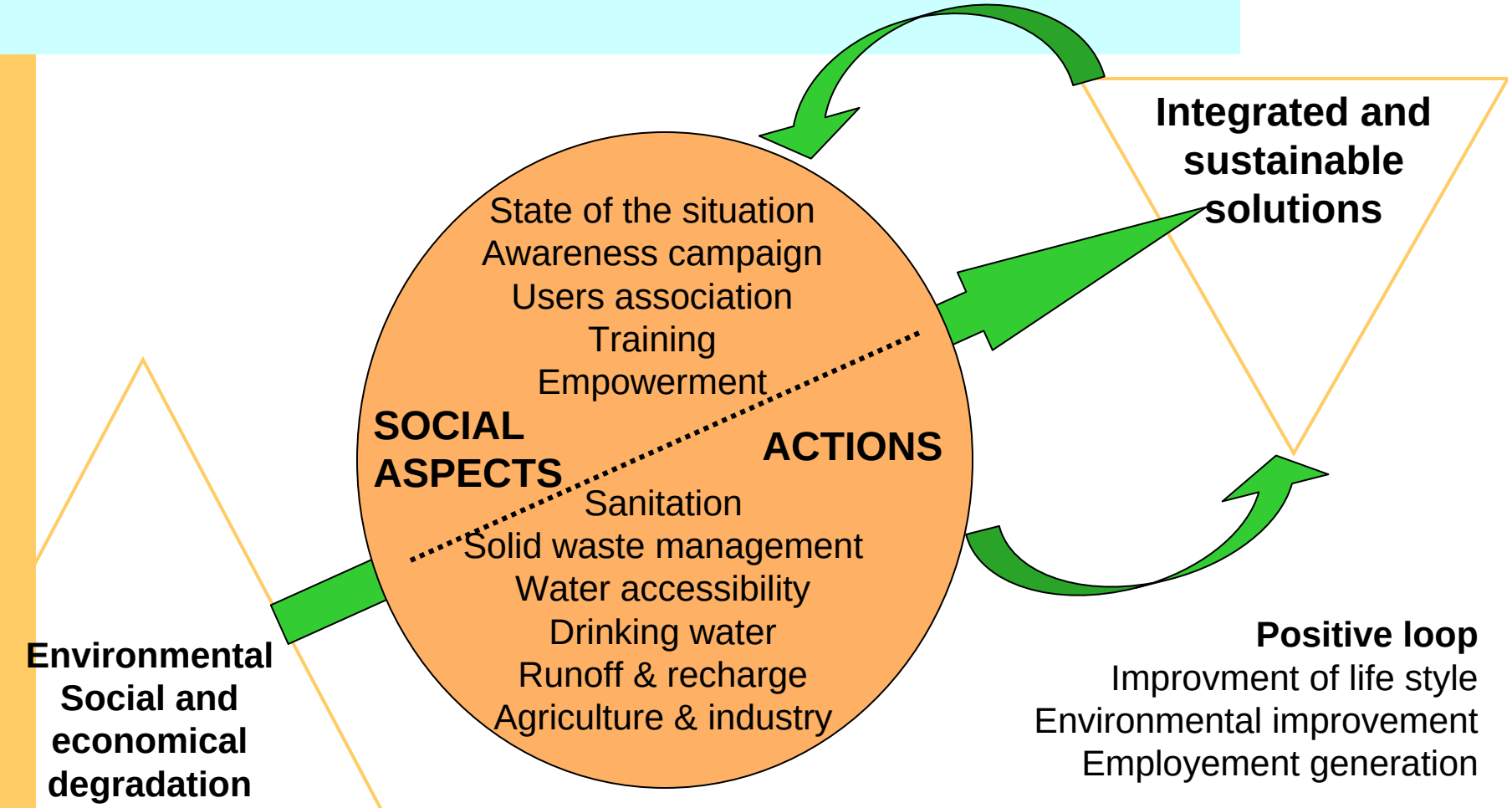


Rayaottai village pond : used for domestic purpose, washing clothes and bathing, April 2005

Vilvanatham tank, western side storage area, highly silted and cover by vegetation, April 2005

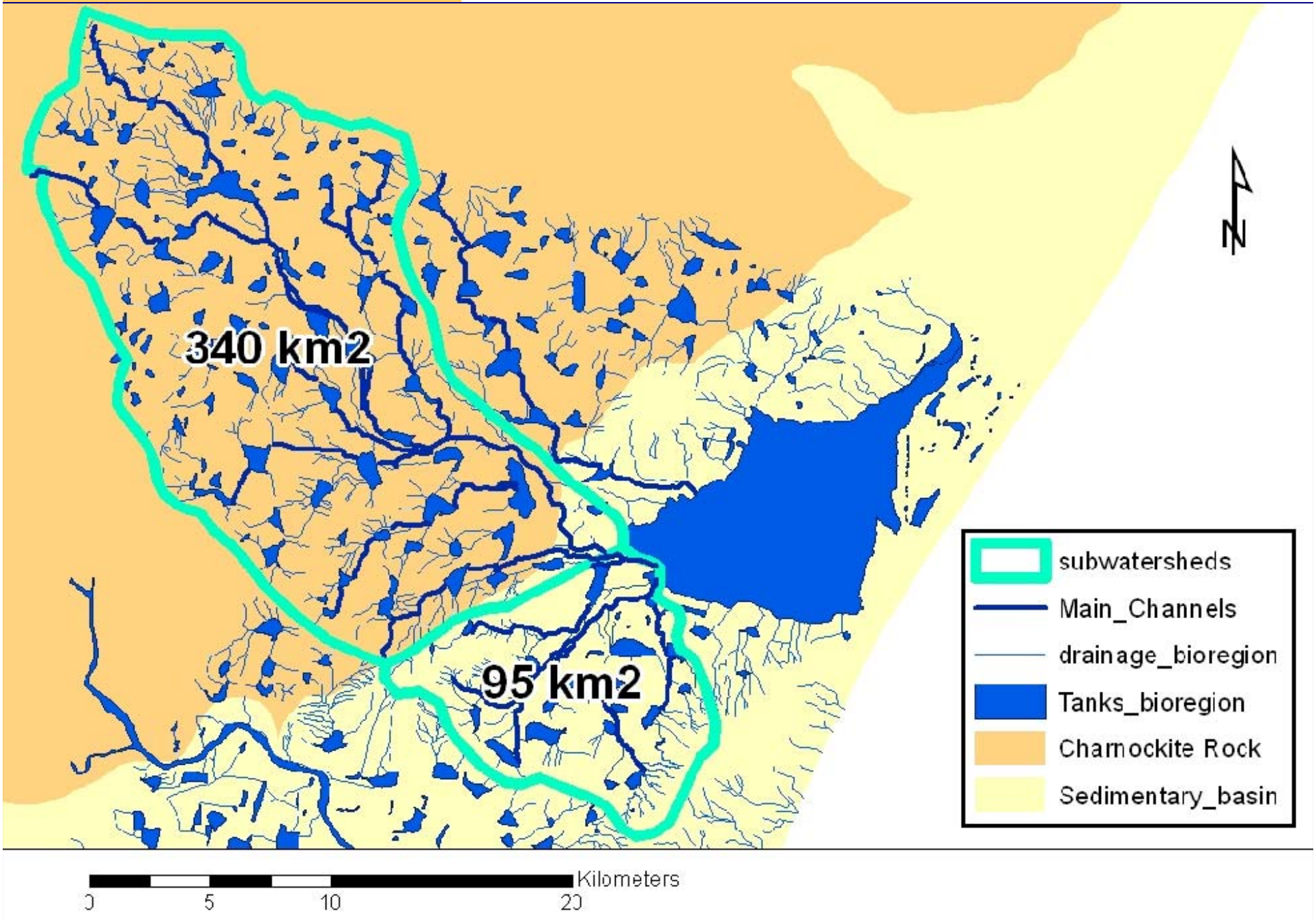
Kodur tank, storage area near bund, April 2005

Sustainable development in practice




Kaliveli infiltration program

nd run-off in kaliveli sub-water-sheds



c particulars of Kaliveli watershed

Total number of tanks in the catchment area	196 numbers
Combined catchment	754.69 km2
Run-off generated from the watershed	232 M cum
Storage of Swamp	33.82 M cu.m
Area of Swamp	70.47 sq.km
Excess run-off from Kaliveli watershed	200 M cum

ential for Water use

- Groundwater recharge
- Waterways
- Diversion to other irrigation structures
- Drinking water storage

Problems for effective management of surplus water

- Run-off event of very short duration
- Existing storage capacity limited
- High evaporation
- Engineering difficulties due to topography for water diversion
- Costs of infrastructures
- Maintenance
- Running cost
- Ecological impacts

Working together for a sustainable future