RANGABELIA PROJECT
INNOVATIVE WAYER USAGE IN THE DELTAS

INNOVATIVE TECHNOLOGY FOR WATER DEVELOPMENT

WATER IS LIFE

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prepared by-
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INTRODUCTION

• The Sunderban Deltas, lapping on the waters of the Bay of Bengal, is the culmination of the great Ganges river
• A veitable delta in the making
• Of late a large migrant population in search of land has settled in these deltas seeking to make a living from a land where water is abundant but salty

• The collection of rainwater in ponds thus becomes a common practice
• The Geology of the Deltas is late Pleistocene
• Sediments of a highly plastic clay 3-5 meters with underlying layers of a salty fine sand (silver sand) and further down coarser sand
• The Rangabelia Project, of the Tagore Society for Rural Development is a well-established intervention to enable self-help among local inhabitants, infusing rudimentary technology and creating a service centre for Socio Economic programmes
THE PROJECT

The Rangabelia Project set out on a broad program of:-

- Organising Para (neighbourhood groups)
- It set out to improve agricultural practice
- Introducing better hygiene particularly better water and waste management
- Experimenting with alternative technologies in a land devoid of basic infrastructure
- Innovative low cost techniques for water purification

- Water is a key to development in the deltas
- Shallow ponds collect the heavy rainfall between 1700-1900 mm in the four monsoon months in June-September
- A rule of thumb is 5% of arable land reserved for collection ponds and, old river channels can readily serve as reservoirs
- Water hyacinth, Duckweed and lilies are endemic varieties and seem to grow naturally in these stagnant waters
- The great cleansing function of this mass bio-filter and actively supported its sustenance
- The pressure on this water resource is not yet excessive, but the burgeoning population could well put things beyond control
WATER UTILIZATION

• Water resource utilization is key to survival and sustainability in this active delta.

• Getting a second crop in this land requires 25% to be dedicated to Rain Water collection—ponds or reservoirs.

• The more intense land use of service areas the ponds account for 30-35%.

• Residential homesteads have to sustain 40% pond area.
This multipurpose project is a sequence of service centres providing much needed social infrastructure at Rangabelia.

The facilities involved are:

- A training centre with auditorium and dormitories and a large canteen with kitchen.
- The hospital has substantial load of both waste/contaminated water and a larger daily requirement in terms of fresh water.
- Alternative technology has been used both for water filtration via slow sand filters and an array of solar collectors provide basic illumination and electricity.
- The third pond – the largest in the series, caters to the guest house and the residences.
- The whole strip of land is densely planted and the use of waste water has proved extremely beneficial.
THE SERVICE CENTRE

• The rainwater reservoir covers a total area of 0.6 hectares, say 30% of the site area.

• The whole pond system collects around 15,000 cu.m i.e. 15 million litres per annum.

• The element of partial recycling contributes a further 5% percent to the storage system.

• The net water demand factor is in the vicinity of 25000 lpd (Litre per day) i.e. 9.25 million per annum and substantially meets the moderate demand.
THE MAHILA SAMITI

• The widows destitute ladies have found a welcome refuge here

• A society that excels in economic activities—dyeing, weaving and tailoring, while addressing pressing social issues of gender equality and education and training.
WATER AS A WAY OF LIFE

• The early mornings are often bathing time and the ghats are a social meeting ground.
• The late mornings see the housewives at selected ghats cleaning the dishes and utensils.
• The afternoon is also bathing time for many and children bathe and frolic in the placid waters.
• The evenings have their small ablution time and the summer nights are enjoyed on the banks of the pond.
• The sequence of ponds is an aesthetic landscaping element as also a tempering factor for the micro climate

• Low impact appropriate technologies to improve sustainability
WATER USE

• Proper and systematic waste water reuse / treatment
• Hygenic waste disposal system including composting and digester technology.
• Solar hot water and electricity generation through photovoltaic cells.
• Biomass cultivation with fuel generation and pyrolysis (main generator).
• Overall water management with rainwater collection ponds and channels using bio-filters
• Low cost and innovative building technology to provide facilities economically.
IMPLEMENTATION

• The Rangabelia Project in close association with Interdesign International has been progressing for the last 20 years old.

• The benefits to the local population is evident in the substantial increase of domestic earnings, literacy, low infant death rate and mobilising the rural poor and women towards self help and economic progress.
STAKE HOLDER’S PARTICIPATION

• There is substantial emphasis on the participation of women through the Mahila Samity (women’s association) started as a widow’s organisation and now a platform for feminine emancipation and economic activity, weaving, cottage industries etc.

• The hospital and health facilities are crucial for the whole delta area and the project motorised boats even cater to isolated islands.

• Agriculture and animal husbandry is of primary importance and here water management is intimately linked with all programmes.
SUSTAINIBILITY

• Sustainability is both a matter of using resources intelligently and eliminating one’s own dependence on Governments, handouts and external munificence

• The project intends to make the best use of the resources at hand in the most viable configuration given the backward setting

• Last but not the least sustainability here also means the joy of participatory work and overall prosperity of the group. It is this contentment that assures the continuity of progress
THANK YOU FOR YOUR KIND ATTENTION