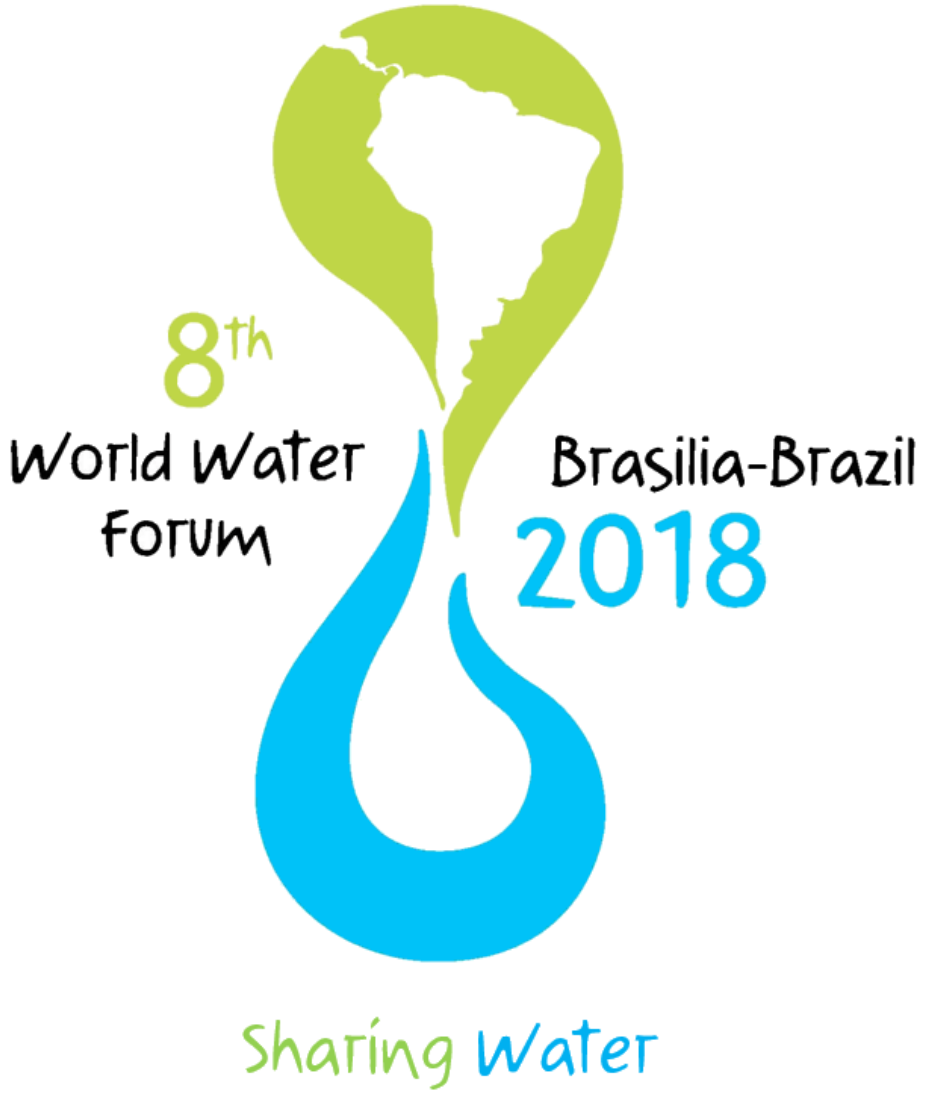

8th
World Water
Forum
Brasília-Brazil
2018

URBAN WATER FOR SUSTAINABLE DEVELOPMENT

SESSION 4.A.1 – Design for Water-Wise Cities

19/03/2018



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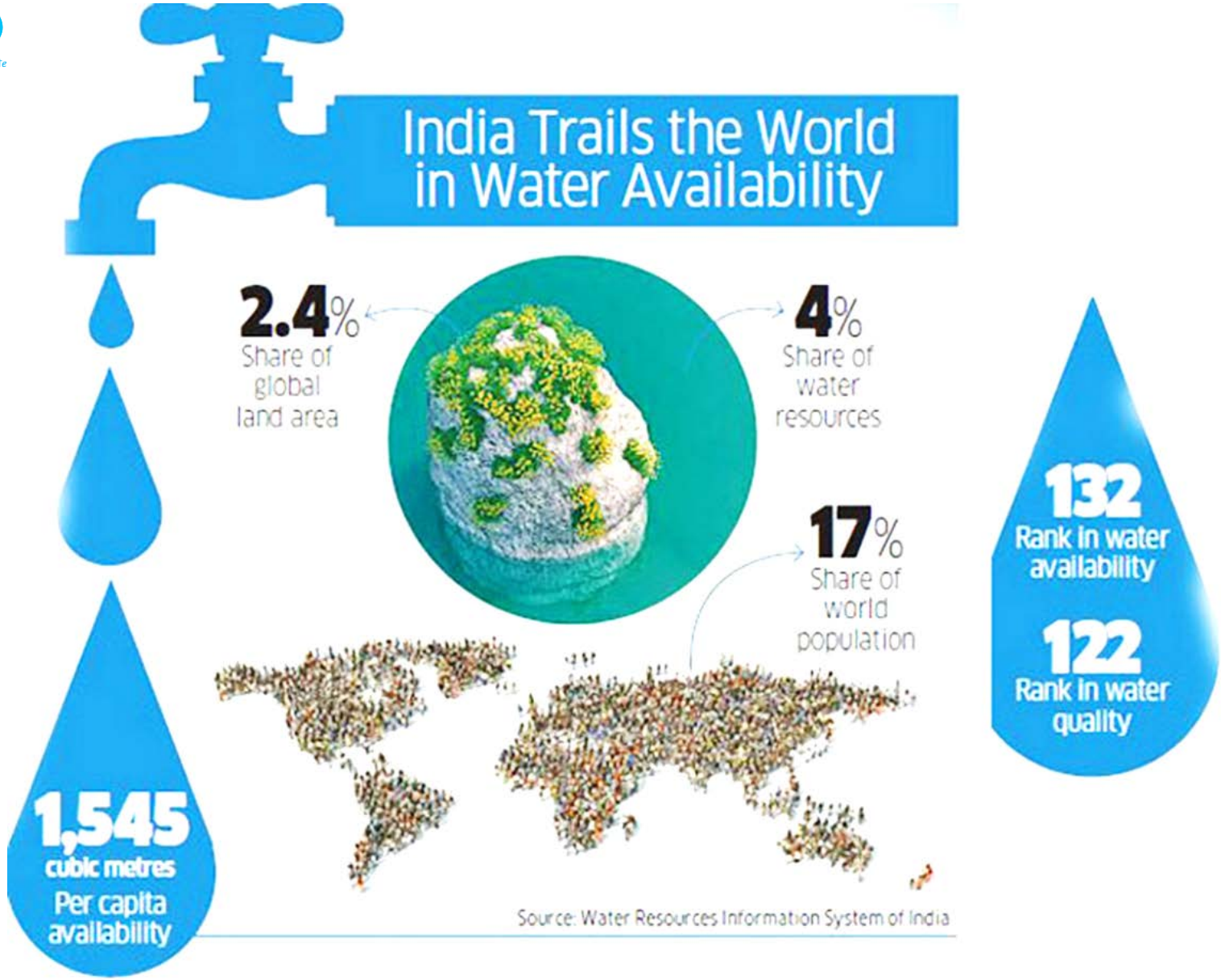
Secretariat of the 8th World Water Forum

Why Are We Talking About Urban Water ?

Water Scenario In India



- 67% Of The Waste Water Disposes Off Directly Untreated
- Water Sources Are Contaminated With Both Bio And Chemical Pollutants,
- Over 21% Of The Country's Diseases Are Water-related.
- Only 67% Of The Country Has No Access To Traditional Sanitation.
- Yet Copious Amounts Of Urban Water In Different Form Is Being Wasted In Every Sphere

A Rain Water Harvesting Project

This Paradox Tells All Us That There Is Something Very Wrong In The Way We Are Dealing With This Natural Source Of Water Which Is

Free Abundant Pure

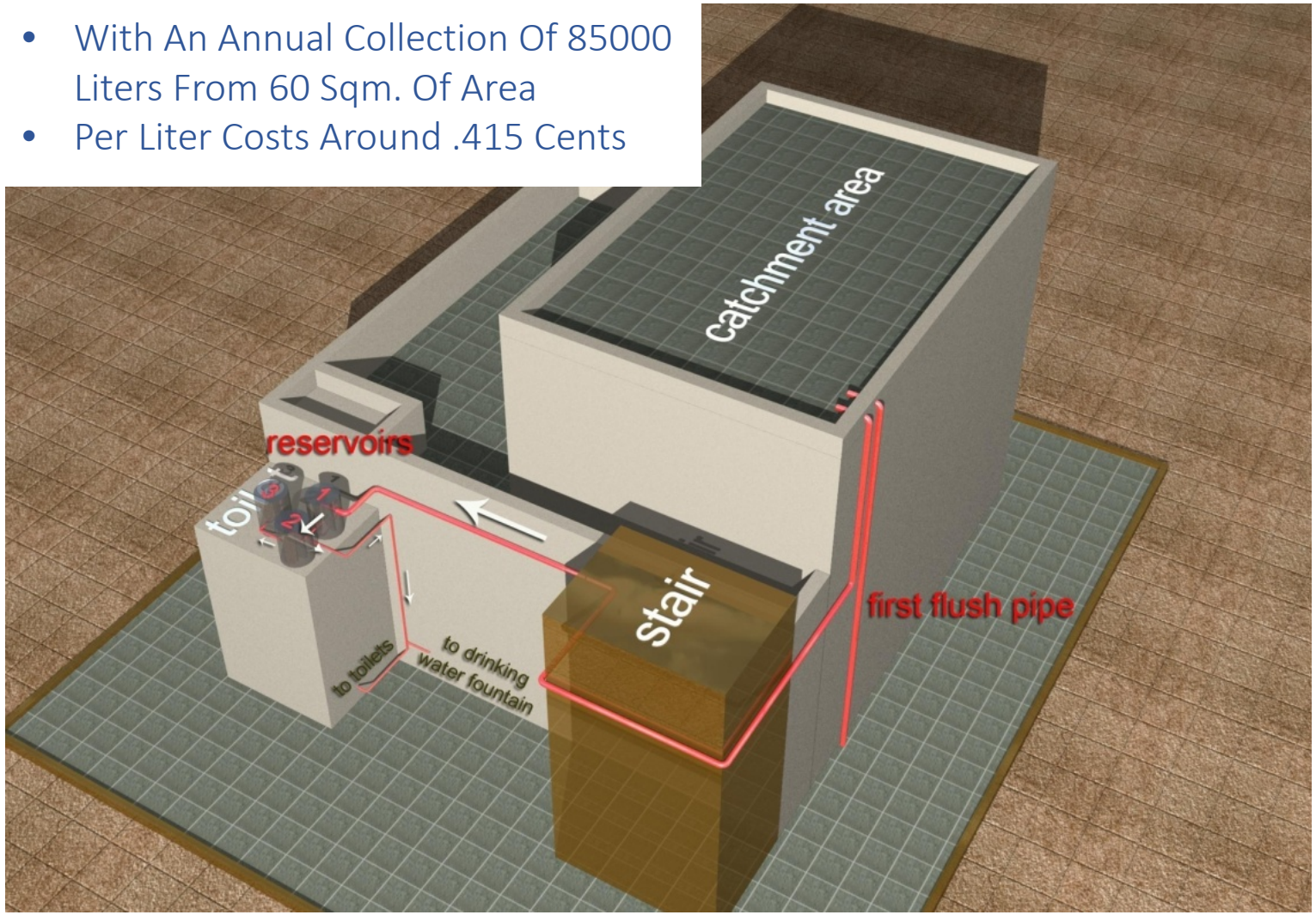
Kolkata City With An Area Of 185 Sq.Km.,
Average Annual Rainfall Of 1600mm And
Population Of 5.1million Would Generate

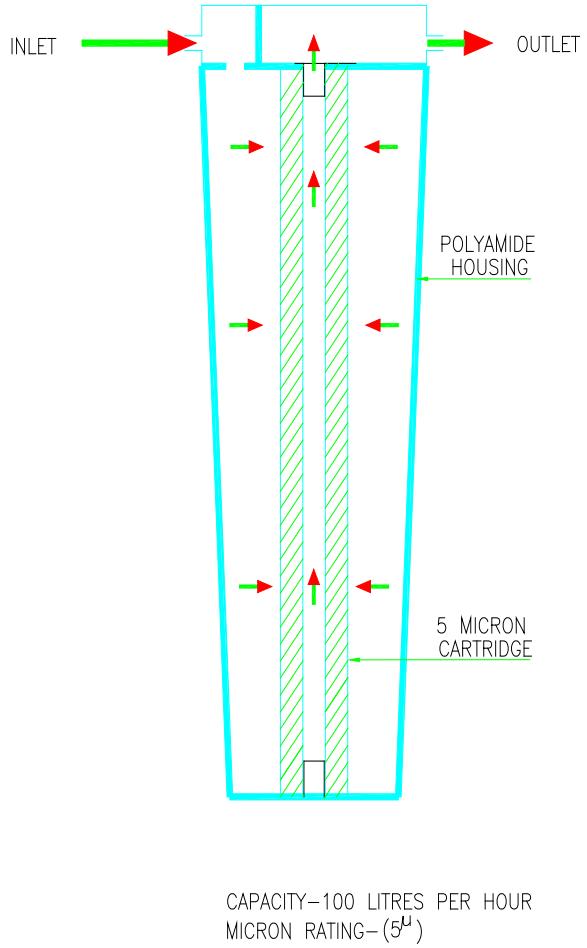
Per Day

Pure Unless In A Heavily Industrialised Area.

'Bhoroshar Borosha'
The Promising Rain
- A Rain Water Harvesting Project
In A Low Income Area Of Rajarhat
Executed By Centre For Built Environment
2/5 Sarat Bose Road, Kolkata 700 020

- With An Annual Collection Of 85000 Liters From 60 Sqm. Of Area
- Per Liter Costs Around .415 Cents





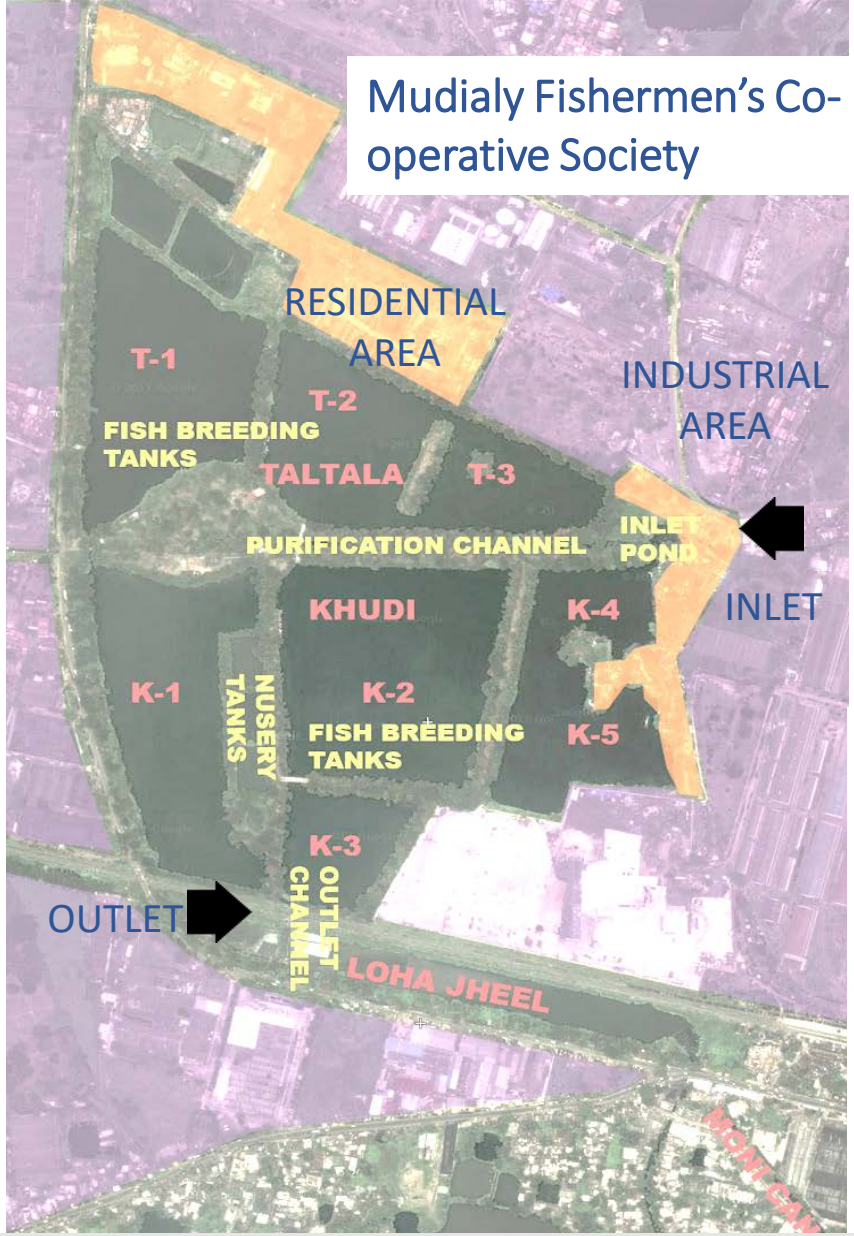
A Rain Water Harvesting Project

Santimoynagar Prathomik Vidyalaya
Model Rain Water Harvesting Project

Filtration System
For Drinking Water

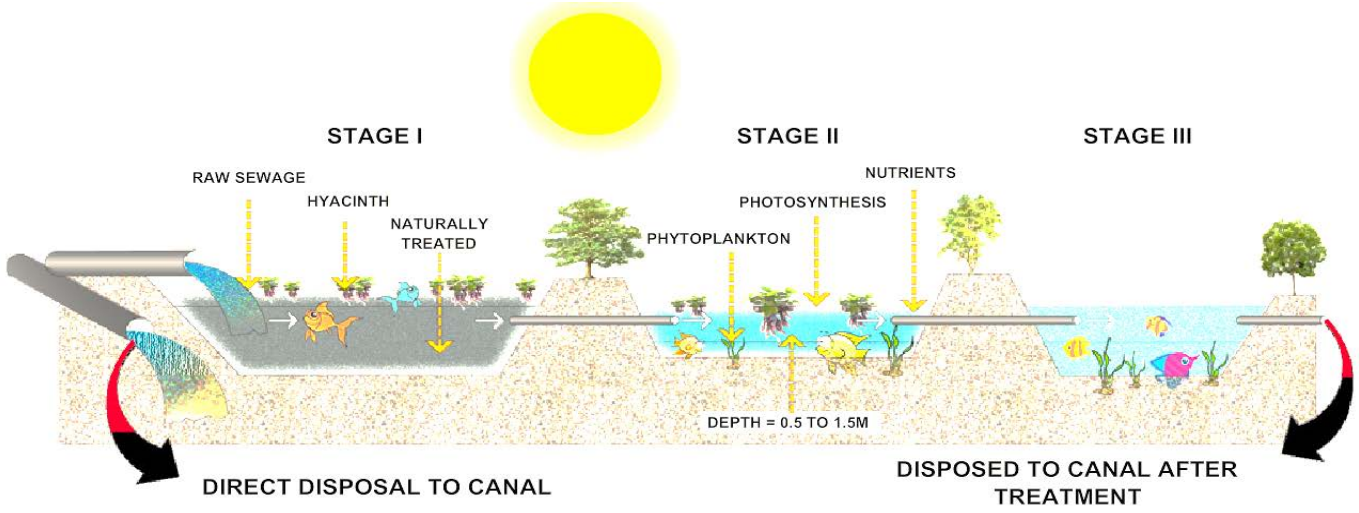
A Waste Water Based Sustainable Community Development-model Study

Mudially Fishermen's Development Co Operative Society-
Case Study From Kolkata
By Centre For Built Environment
2/5 Sarat Bose Road, Kolkata 700 020



Total 82.5 Ha. Of Which

Effective Water Area	: 55.0 Ha
Nursery Pond	: 3.5 Ha
Forestry	: 13.0 Ha
Embankment	: 11.0 Ha
Loading Capacity:	
Industrial Waste Water	: 70%
Residential Waste Water	: 30%



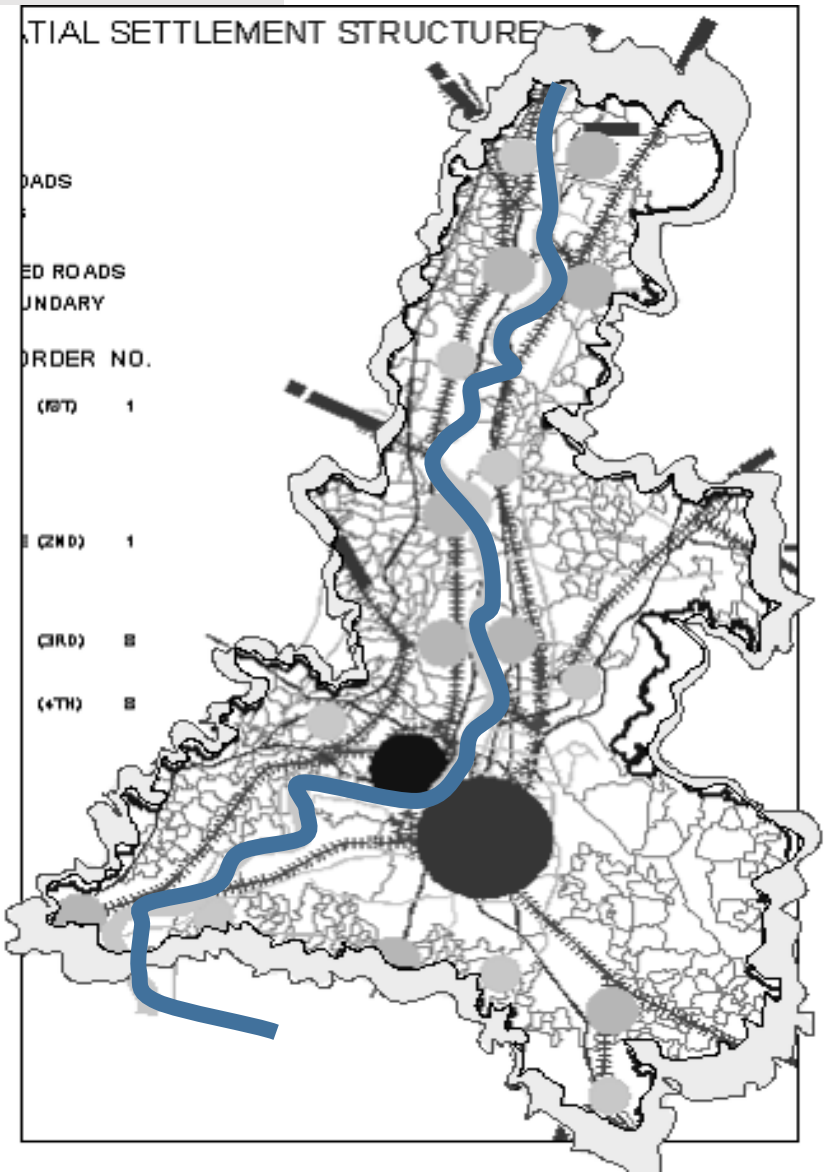
A WASTE WATER BASED SUSTAINABLE COMMUNITY DEVELOPMENT-MODEL STUDY

The Bigger Picture

The Potential Of The Regional Interface

- A Unified Regional Development Plan
- ‘Waste Recycling Districts’ On The City's Edge.
- A New Kind Of Urban Facility That Ensures,

(A) Food Security, (B) Job Security (C) Better Sanitation (D) Healthy Life Style



Replicability And Site Selection Criteria

✓Optimum Quantity/Flow Of Water Into Wetlands/Ponds
✓Adequate Slope Of Pond Bed,
✓ Appropriate Soil And Depth Of Pond
✓ Present Land Use Of The Project Site
✓ Location Of Potential User Region

A Waste Water Based Sustainable Community Development-project

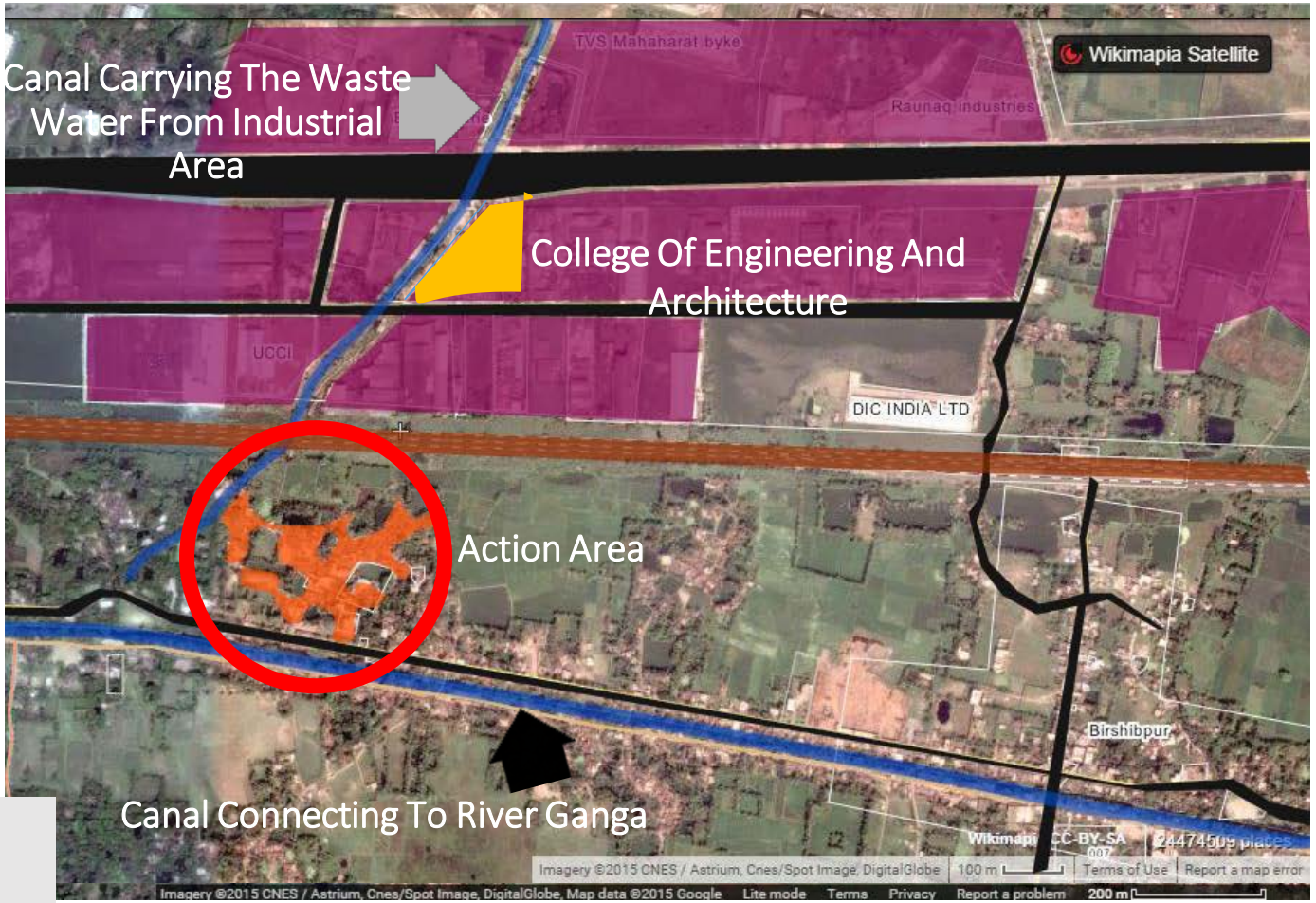
‘A Proposed Water Based Model Community Development Project - Mandalpara, Chandipur’
At The Fringe Area Of Kolkata , West Bengal India
By Centre For Built Environment
2/5 Sarat Bose Road, Kolkata 700 020

- Area : 80,000 Sq. Mt. (Approx.)
- Land Use Pattern

Industrial | Residential | Water Channels

Railway Track | Major Road Network | Institutional

- 1700 (Approx.) People Living In 400 Families
- 90% Below Poverty Line
- Mostly Laborer/Jari Workers/Vegetable And Poultry Sellers
- Limited Source Of Potable Water Mostly Contaminated
- Very Poor Sanitation Condition
- Release Of Untreated Effluent Directly Into The Fresh Water Bodies Or To River Ganga Though A Water Channel



A Waste Water Based Sustainable Community Development-project

Road To The Village
The Ponds

Canal Carrying Industrial Effluent Water To The Village Ponds

A Waste Water Based Sustainable Community Development-project

Design Sequence For The Project : Phase 1

- Introducing New Toilet Systems With Improved Hygienic Standards

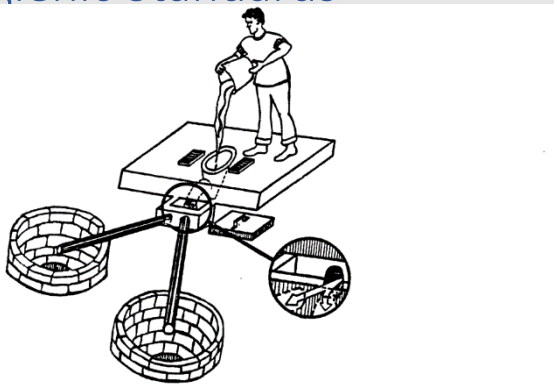
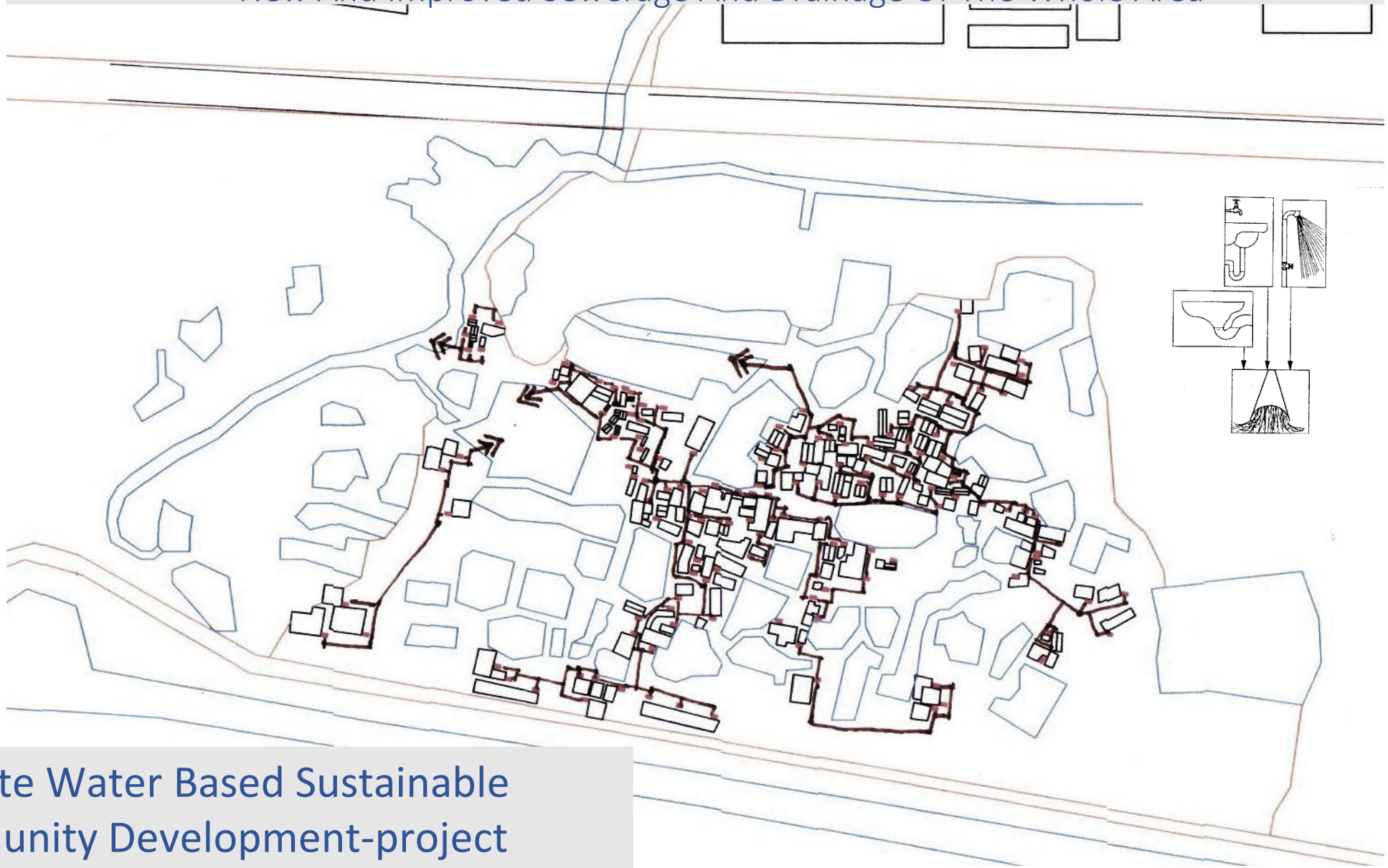


Figure 2. Double pit latrine (the covers to the pits and the shelter are not shown)

A Waste Water Based Sustainable Community Development-project

Design Sequence For The Project : Phase 2

- New And Improved Sewerage And Drainage Of The Whole Area



A Waste Water Based Sustainable Community Development-project

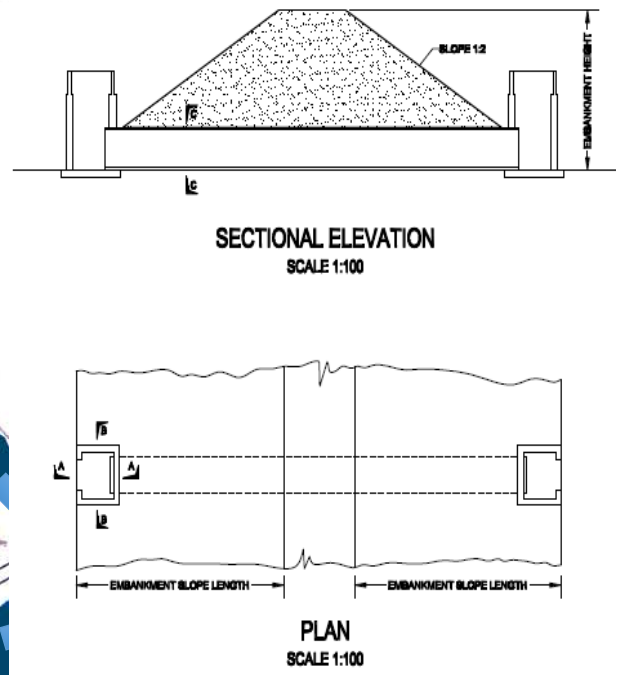
Design Sequence For The Project : Phase 3 & Phase 4

- Reconnecting And Reshaping Water Bodies For Aqua Agriculture Process & Introduction Of Water Purification System

- Introducing Educational Facility
- Introducing Recreational Facility
- Yield Development Programme
- Integrating The Project In Urban Planning Process

Treated Water To Be Released For Irrigation/ Agriculture

Treated Water Finally To Be Released In The Canal Connecting To River Ganga



Water Purification System

A Waste Water Based Sustainable Community Development-project

Conclusion

- This Is A Model Development.
- This Prototype Is To Be Repeated In The Other Communities Adjacent To This Village And Surrounding Area.
- The Project On Its Initial Stage Has Got Immense Response From The User Region
- It Started With Nss Projects In The Primary School In This Area, And Slowly Influenced The Women Community, Related To The Children.
- Besides Working On Creating Proper Sanitation System In This Area By Installing Toilets, A Proposal For Constituting A Body Of Women Self Help Group Is Also On Its Way Of Taking Shape Into Reality.
- The Community Is Now Being Trained On Traditional And Authentic Indigenous Fresh Water Aqua-agriculture, Poultry, Piggery, Horticulture And Agriculture.
- Thus We Are Taking Small Steps Towards A **Sustainable Future Of Urban Water Management In Design Of Cities By Recycling, Remodeling, Rethinking**

A Waste Water Based Sustainable Community Development-project

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Sharing Water

Organization

WORLD WATER COUNCIL

GOVERNO DE BRASÍLIA

MINISTRY OF THE ENVIRONMENT

BRASIL BRAZILIAN GOVERNMENT

Support

ABDIB

Adasa
Agência Reguladora de Águas, Energia e Saneamento Básico do Distrito Federal

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AGÊNCIA NACIONAL DE ÁGUAS