

SARVESH ENGINEERING

WASTE WATER (GREY) TREATMENT

BY

INNOVATIVE BIO-TECHNOLOGY

(DOES NOT REQUIRE ANY CHEMICAL CONSUMABLE).

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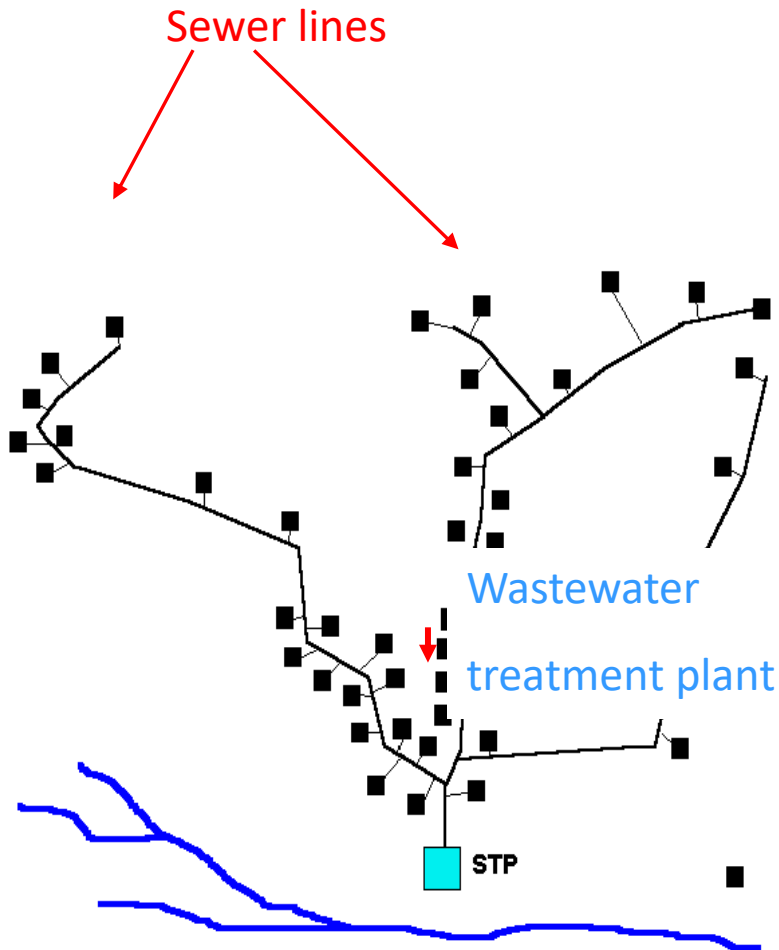
THE ISSUE

- Not every waste water is “connectible to central waste water treatment facility.
- Current in situ treatment is either not efficient enough or extremely efficient but difficult to maintain.
- To provide centralised waste water processing in newly developed/developing areas require lot of capital investment.

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WHAT IS WRONG?

Unsustainable current approach : Centralization cost very high.



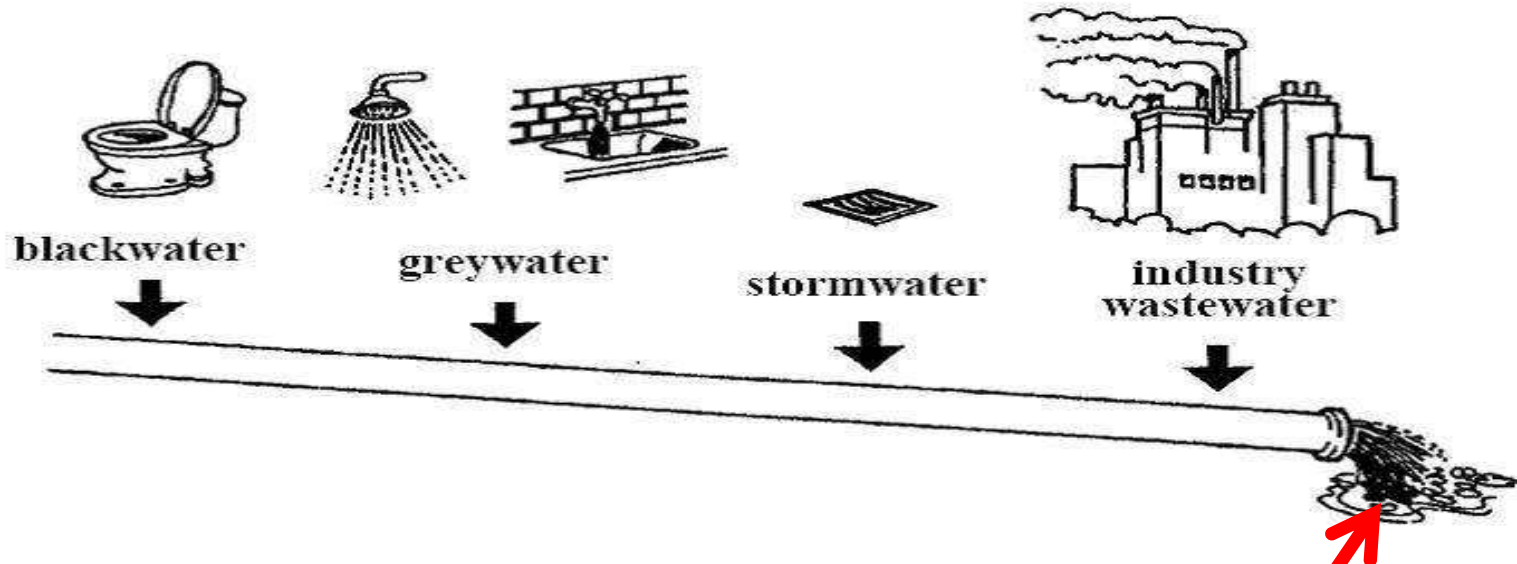
Initial investment costs for centralised sewage collection system make up for the largest part, i.e. 70 to 90% of the total cost of sewage treatment.

- Collection system 70 - 90 %
- Treatment 10 - 30 %

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WHAT IS WRONG

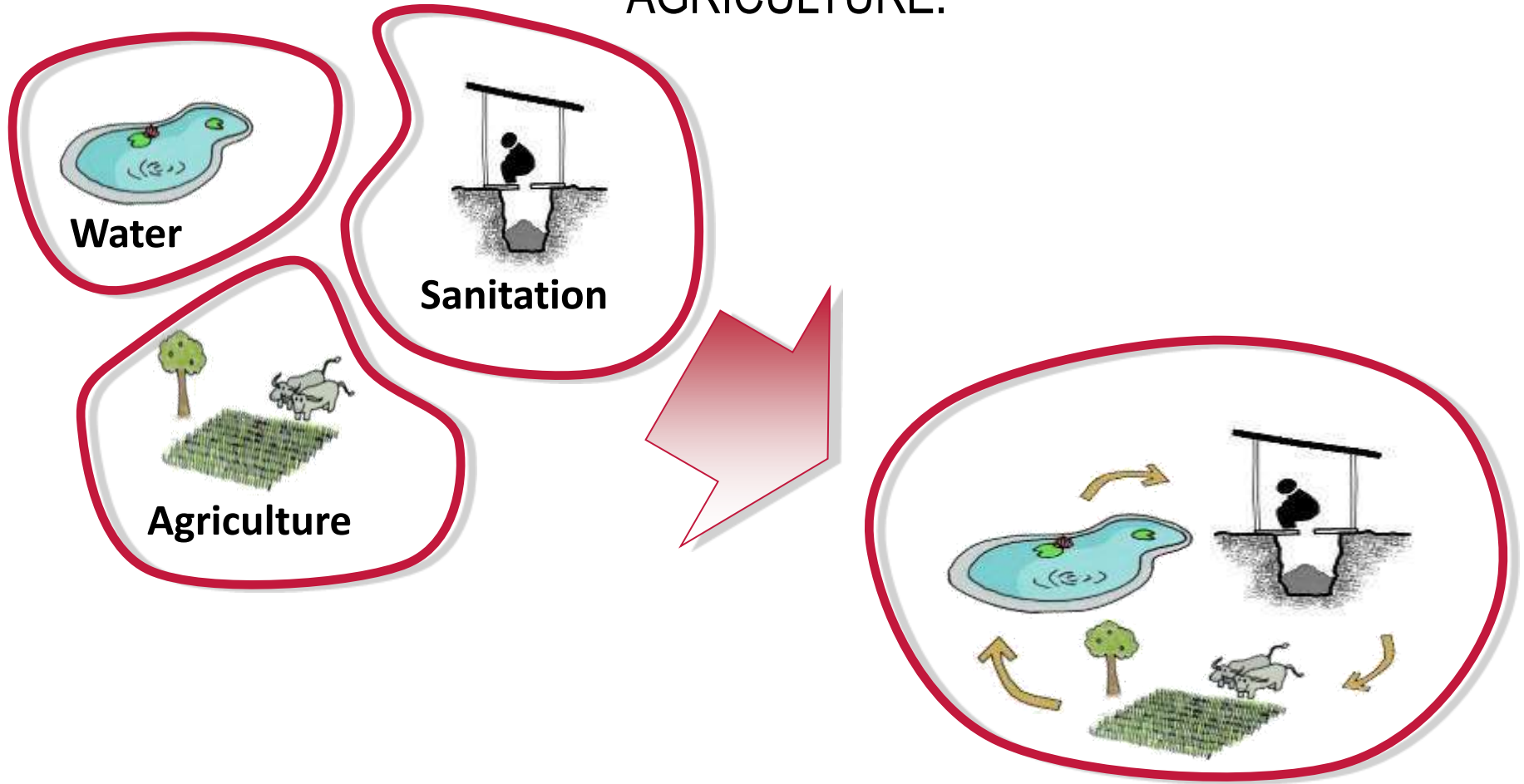
Unsustainable current approach- mixing different types of waste water.



What happened at the end of pipe ?

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FOR SUSTAINABLE APPROACH LINK WASTE WATER, SANITATION & AGRICULTURE.



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THE SUSTAINABLE SOLUTION

Waste water (grey water) from house hold, Food and Beverage industry, Mechanical industry, pharmaceutical and other industries can be treated **without using chemicals** and using **minimal of energy**.

The process does not require compressed air for aeration so the treatment is without odour.

The equipment is modular, multiple no can be connected in case of higher capacity requirement.

Requires very low foot print and low skill level.

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THE TECHNOLOGY

The technology is a compact simple, modular system combining three biological waste water treatment processes in one. Moving bed biological reactor (MBBR), Rotating Biological Contact (RBC) and Trickling filter.

Rotating cage is filled with biological carriers for enhancement of bio-film development. The rotating cage housed in a structure, filled with primary effluent and can be partially or fully submerged to obtain aerobic (for COD reduction and nitrification) or anaerobic (for de-nitrification) conditions. COD reduction and nitrification takes place as the carriers are cyclically submerged and exposed to air.

Since the system is not using compressed air the energy consumption is between 10 to 20 % of the comparable system.

Systems are modular and can be easily connected and run by a single drive motor.

The plastic carriers are of irregular shape and size, as they slowly rotate they interact to form different shapes, which effects in

- 1) High diversity of ecological niches for bacteria to inhabit,
- 2) Variation in the residual time of the waste water in the system.

These two features create an unusually diverse biological ecosystem within the process, providing excellent treatment capabilities.

The system does not use any Chemical and completely green and sustainable process.

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APPLICATION OF SYSTEM

This system can replace any existing conventional activated sludge tank waste water system.

These systems are most idle system for processing waste water (grey) from –

- Residential complex, independent houses,
- Small villages in rural areas, farm houses,
- Variety of industry where process water is used, like food and beverage, Brewery, Pharmaceutical, Textile, Chemicals, Automobiles, etc.

Water treated is practically suitable for all secondary applications like –

- Gardening,
- Agricultural,
- Car washing,
- Toilet flushing,
- Construction, etc.

Treated water is suitable to release in the water streams like river or sea, as it does not pollute the water bodies.

Treated water is generally free from odor, and reduce the TSS up to 90%, COD up to 90% and TN 60 to 90%.

Treated water can be further processed biologically to re-fine for high end applications.

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ADVANTAGE OF THE TECHNOLOGY

- No recurring cost of chemicals and consumable materials.
- Low energy consumption.
- Maintenance free system.
- Simple and easy, does not require skilled person for operation.
- Very high life expectancy – over 25 years.
- Quick installation. Does not require long waiting period for start up.
- Compact foot print.
- Saves 50-60% Of fresh water requirement.

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END USE OF PROPOSED SYSTEM

- Small communities in remote areas. Ideal for rural areas as it does not require high skill for operation, maintenance free and self starting system.
- Industrial waste water, prior discharge in water bodies.
- Military bases and camps at remote locations.
- Farm house, Food processing parks, wineries, etc.
- Areas where central waste water processing facilities are not available.

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UNIQUE SELLING POINT

- Savings of about 50 to 60% fresh potable water.
- Does not require any chemical, so no recurring expenses, and completely green process.
- Operating cost at Minimal, as it does not require compressed air, Energy consumption only 10 to 20% compared to the conventional systems of same capacity.
- Modular systems, additional units can be integrated easily for additional capacity required with in short time.
- Maintenance free,
- User friendly, does not require high skill level to operate.
- Compact, requires low foot print. Can be mounted on existing septic tank.
- Treated water is beneficial for farming and gardening.
- Treated water can be released in to the water bodies without harming water body.

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Characteristics of input water

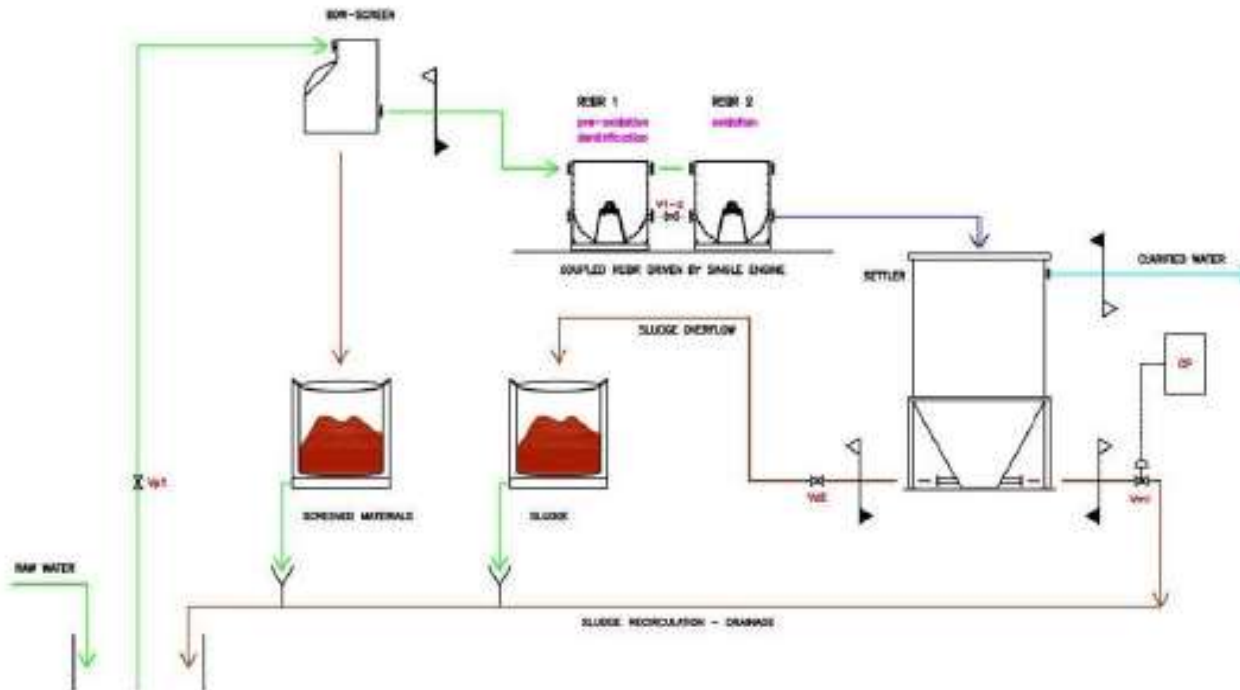
BOD – 300-350 mg/ltr

COD – 350-450 mg/ltr

TSS – 350-450 mg/ltr

PH – 7 -8

Oil & Grease – 100-150 mg/ltr



SCHEMATICS OF PROPOSED SYSTEM INSTALLATION

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STRENGTH –

- No chemical used, completely green process.
- Very low maintenance required
- Low capex required
- Operating expenses very minimum.
- Quick installation
- Modular system
- Low foot print
- Sustainable system, can use recycled plastic carriers
- Can be used on domestic premises
- Skill level required for operation low

WEAKNESS –

- No data to back up
- No installation & test results
- Disposal of solid waste & sludge

OPPORTUNITIES –

- Small communities & rural area.
- Developing areas near tier 2 & 3 cities
- Small scale treatment for individual house or complex.
- Remote military establishments, Colleges, universities & hospitals.
- Food process, Food & beverage industry.
- Automobile, Pharmaceutical industry etc.

THREATS –

- In put Effluent quality can not be controlled
- Behaviour of cyclic input and effect on the treatment specially in case of domestic waste water need to study.

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PRESENT STATUS

Manufacturing drawings are ready for the commercial development.

We are looking for a trial order to fabricate, & take extensive trials on line at a prospective customers premises.

Once the system is operational it will be proved as a turning point in waste water treatment area.

Expected cost of manufacturing prototype 10 KLD equipment, Rs. 2,500,000/- (Rs. Twenty five lakh only).

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WHY SHOULD ONE INVEST FOR THIS SYSTEM WITH US?

We have studied and analyzed the problem of waster water treatment in the city and fast developing clusters around the major cities.

We also have given considerable time and finance for selecting the suitable low cost, sustainable model which individuals, builders, societies can install without financial aid.

In and around major cities there is a very big problem of waste water treatment, installing low cost, efficient system is need of the day.

We all have witnessed the odor coming from existing effluent treatment plants, as well the water polluting rivers and water bodies.

We are Mechanical engineer having in-house capacity and capability of design, development and commercialization of technology.

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MAIN PROMOTERS BACKGROUND

MR. Nandkishor Sarolkar is a Mechanical engineer, backed up with post graduation in Management (Production and Marketing management, two principle subjects), having wide experience of over 40 years in industry of repute (20 years over seas experience).

Mr. Sarolkar is well aware of Mechanical, Hydraulic, Pneumatic and electrical systems. Having hands on experience in power generation and power distribution (LT side).

Mr. Sarolkar is nominated member of Kenya Bureau of standards.

Last designation as a CEO/Managing director of Bericap India Pvt. Ltd., MNC with head quarters at Germany, having 21 manufacturing plants world wide, with in house tool development and R & D centres. "Bericap" is well known name in plastics caps and closures. "Bericap" is preferred supplier of major brand owners world wide.

Mr. Sarolkar is owner of eight no of design registration (IP) in India.

Mr. Sarolkar has successfully implemented more than 24 projects in India, Kenya, Tanzania, Nigeria, South Africa, Kuwait, etc.

Mr. Sarolkar has made strategic alliance of Pune based co. with established European manufacturer for manufacturing Solar Modules in Pune, India.

Mr. Sarolkar is registered independent (private) director.

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