

# Johkasou-STP

Johkasou is Packaged Sewage Treatment Plant from Japan

**-Contribute for 'Swachh Bharat'-**

**How to Treat waste water at site & Reuse at site**

PROTECT x CHANGE



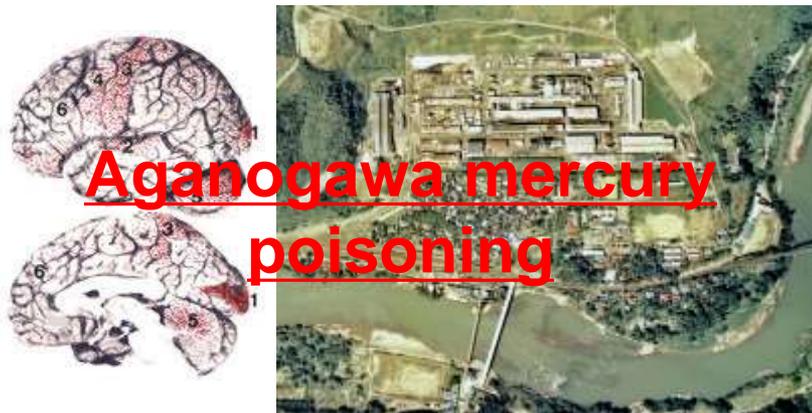
# Japanese water treatment history\_ in 1960' to 1970'

- Japan was most polluted country in the world in 1960' to 1970'



# Japanese water treatment history\_ in 1960' to 1970'

- Four major pollution diseases occurred in Japan in 1960' to 70' and Three causes were water pollution in 4 industrial disease



# Daiki Axis Japan

- Daiki Axis established 1958 and focus water & environment industries



PROTECT x CHANGE



# Daiki Axis\_ Johkasou-STP

- Johkasou is a de-centralized STP for domestic wastewater treatment, Daiki-Axis Manufacture, Sale, Install & Maintain it in Japan & All over the world

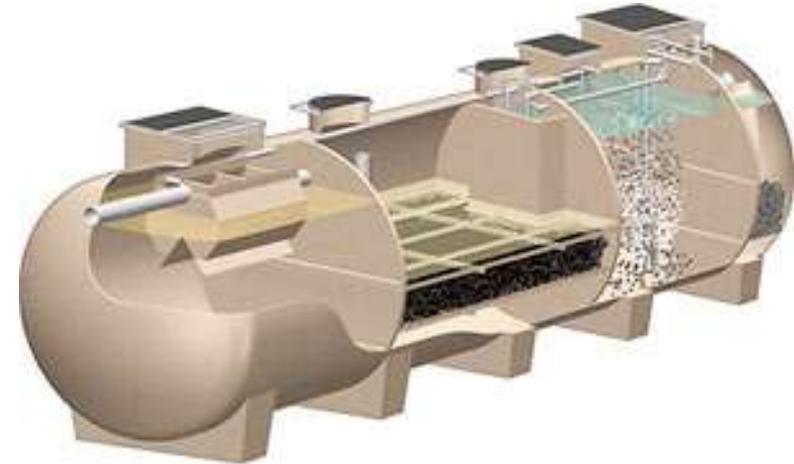
Capsule Type: 1KLD



Capsule Type: 3~25KLD



Cylinder Type: 20~50KLD



LOW energy consumption  
(50-75% less)

No need Operator  
(Auto work)

Quick Maintenance  
(Monthly 15 min)

Nitrogen Treatment

No Leak Smell  
No noisy Sound

No need Equalization Tank

LOW sludge generation  
(50% less)

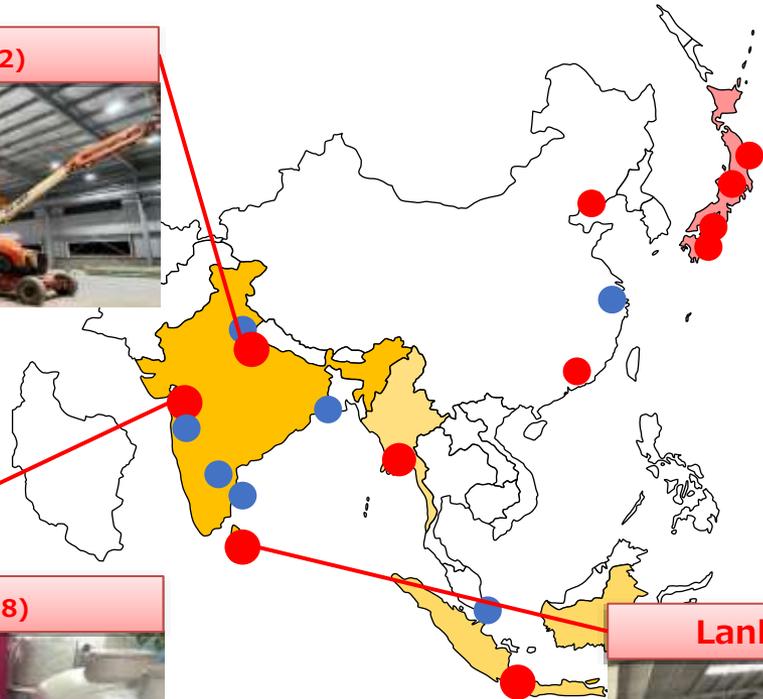
1 day Installation  
(Plug in play)

Performance guarantee

Inlet Parameter		AI Outflow	AIJ Outflow	AIM Outflow
6 - 8	pH	6 - 8	6 - 8	6 - 8
300	BOD	<b>20</b>	<b>10</b>	<b>5</b>
450	COD	100	50	10
240	SS	50	20	5
50	O & G	10	10	5
50	T-N	45	<b>20</b>	<b>10</b>

# Daiki Axis\_ Company profile

- Daiki Axis focus on onsite treatment system for waste water & drinking water business. And Daiki Axis always try to localize our manufacturing facility & design

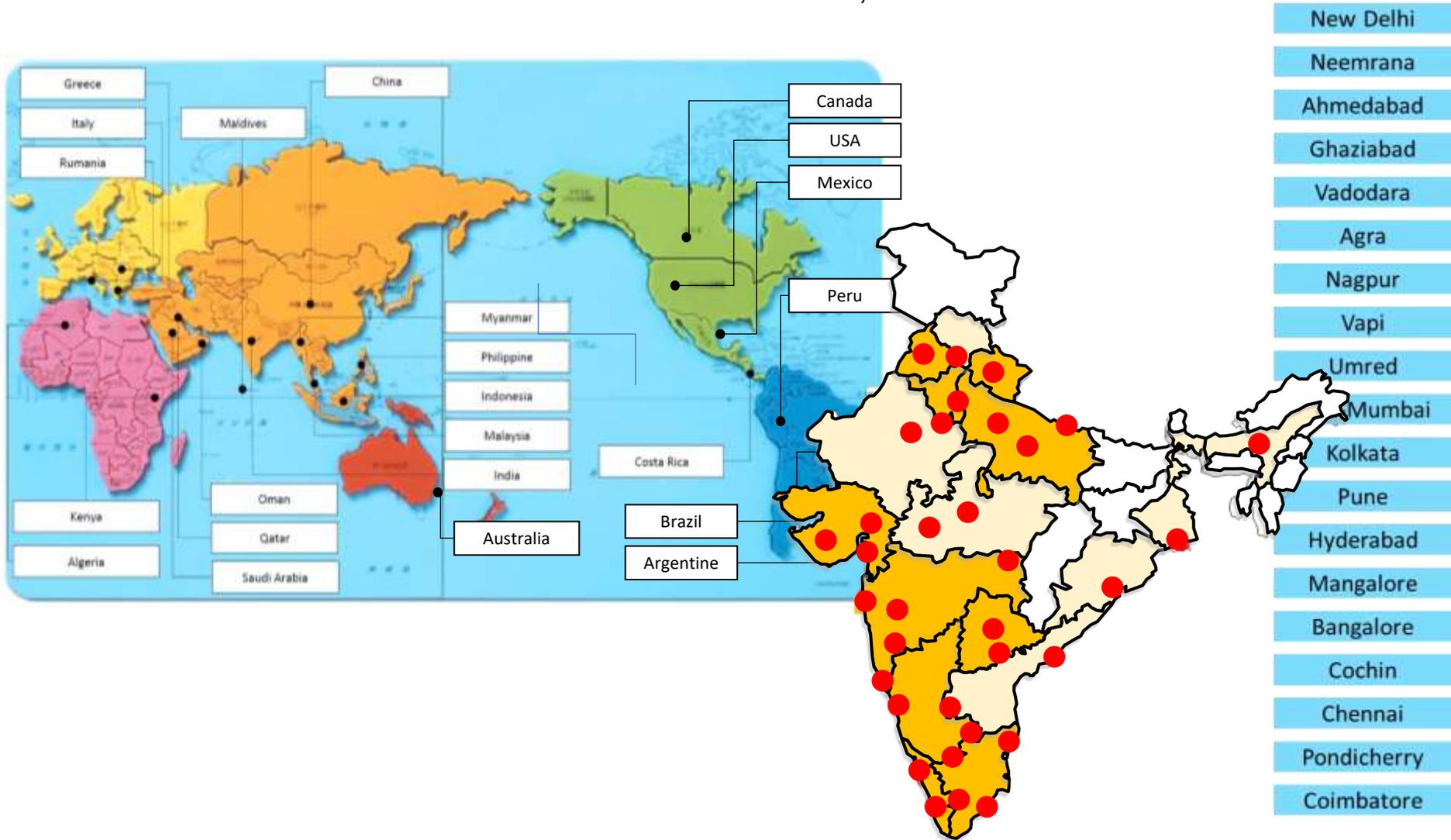


## Company Profile:

Establish: July 12, 1958  
Turnover: Rs. 3,000cr  
Employees: 1,000  
Headquarter: Matsuyama & Tokyo  
Factory: 4 Factory in Japan  
Office: 36 sales offices  
Group Turnover: Rs.38,000cr

# Daiki Axis\_ sales in the world & India

■ We installed over 20 Lakhs units all over the world, and 850 units in India



# Site references \_ above the ground



# Site references \_ under car parking



# Site references \_ under the Green area



# CAPEX ROI from Running cost\_50KLD unit

- ROI point of view, CAPEX will cover with in 1 year from Less electric consumption compared to Conventional STP

## Electric Consumption

		Daiki Axis	Conventional
Units	kW/h	0.744	6.00
	kW/h·day	17.86	144.00
Price	Daily	116.1	936.0
	Yearly	42,363	341,640
Total Units		6.5	Rs/kwh

	DaikiAxis	Conventional
Pump	0.00	2.25
Blower	0.74	3.75

Rs.1=	1.7 JPY
\$1=	115 JPY
\$1=	68.0 Rupees

## Chemical Goods

		Daiki Axis		Conventional			
		Chlorine	FeCL	NaOH	Methanol	NaOCL	FeCL
Quantity	Daily Kg/day	0.350	0.070	0.071	0.028	0.558	0.015
	Price Rs./kg	23.5	52.9	29.4	88.2	88.2	52.9
Cost	Daily	8.2	3.7	2.1	2.5	49.2	0.8
	Yearly	3,005.9	1,352.6	757.4	901.8	17,970.9	288.6
Total			4,359				19,919

## Maintenance Cost

		Daiki Axis	Conventional
Maintenance	Frequency	1	1
Cost	Price	1,000	2,000
	Yearly	12,000	24,000
Desludging	Frequency	2	4
Cost	Price	2,000	2,000
	Yearly	4,000	8,000
Total		16,000	32,000

## Total

		Daiki Axis	Conventional
Electric Consumption		42,363	341,640
Chemical Goods		4,359	19,919
Maintenance Cost		16,000	32,000
Total		62,722	393,559

Yearly Difference	-330,837
5 year Difference	-1,654,184
10 year Difference	-3,308,367



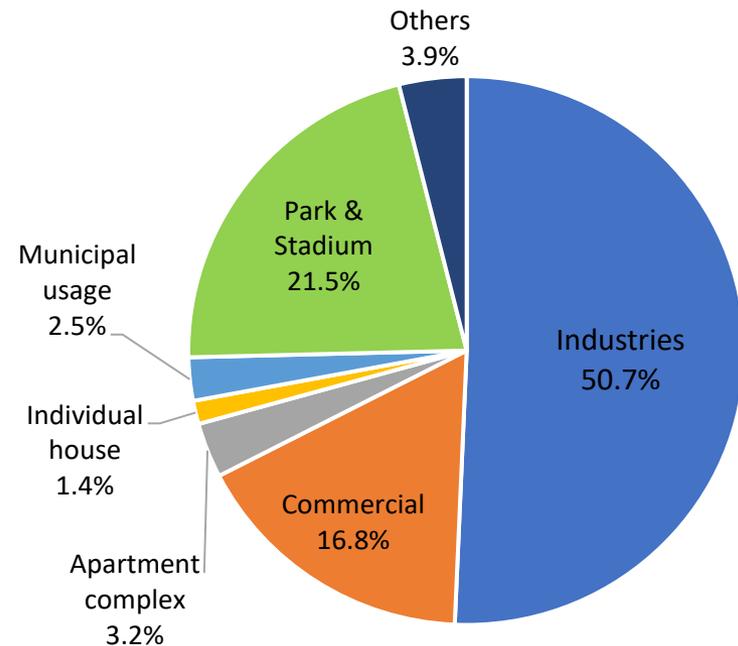
# Area where use Johkasou-STP

- From economical & regulation point of view, more than 50% of our sales happen from Industrial client in India

	Sales	Installed
2017年	6	6
2018年	21	21
2019年	51	51
2020年	110	108
2021年	222	214
2022年	337	295
2023年	340	161
	1,087	856

Using Area	Sites	%
Industries	577	53.1%
Commercial	171	15.7%
Apartment complex	33	3.0%
Individual house	14	1.3%
Municipal usage	26	2.4%
Park & Stadium	219	20.1%
Others	47	4.3%
Total	1,087	

Using area of Johkasou-STP in India

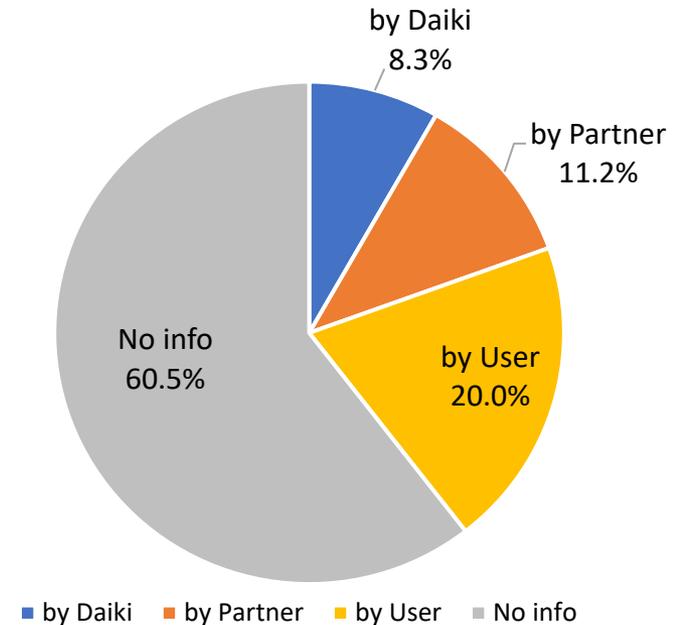


# Maintenance status in India

- Maintenance ratio of de-centralized STP in Japan is more than 90%, but same in India is still 40%

	Sales	Installed
2017年	6	6
2018年	21	21
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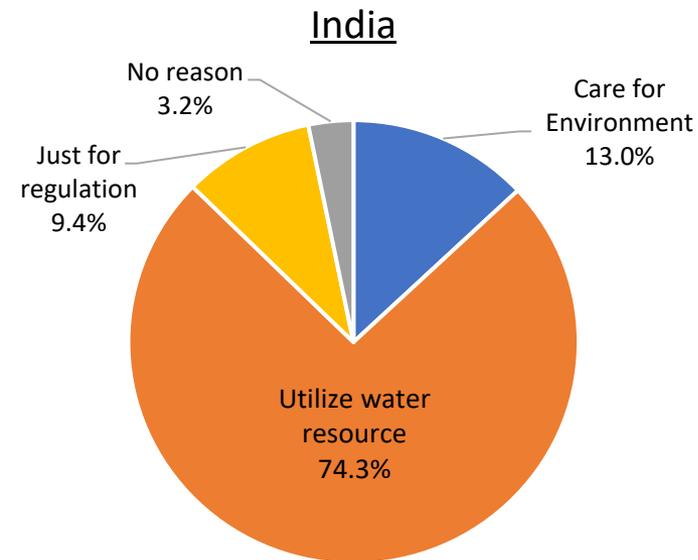
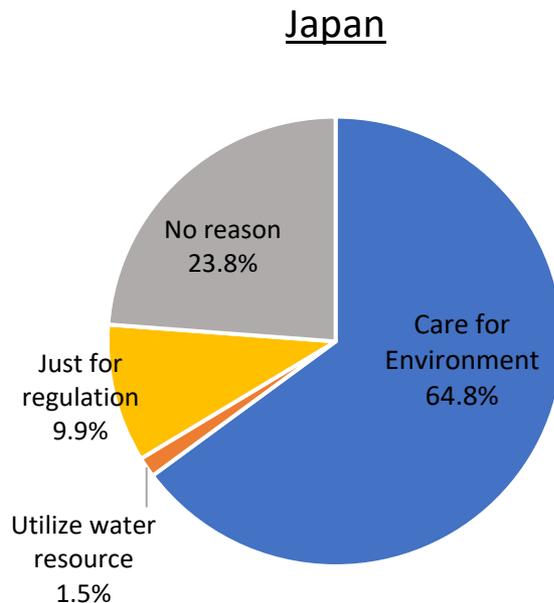
Maintenance				Total
by Daiki	by Partner	by User	No info	
71	96	171	518	856



# Purpose of water treatment

- Primary purpose of water treatment in Japan is just for environment care, but same as in India is re-use of treated water

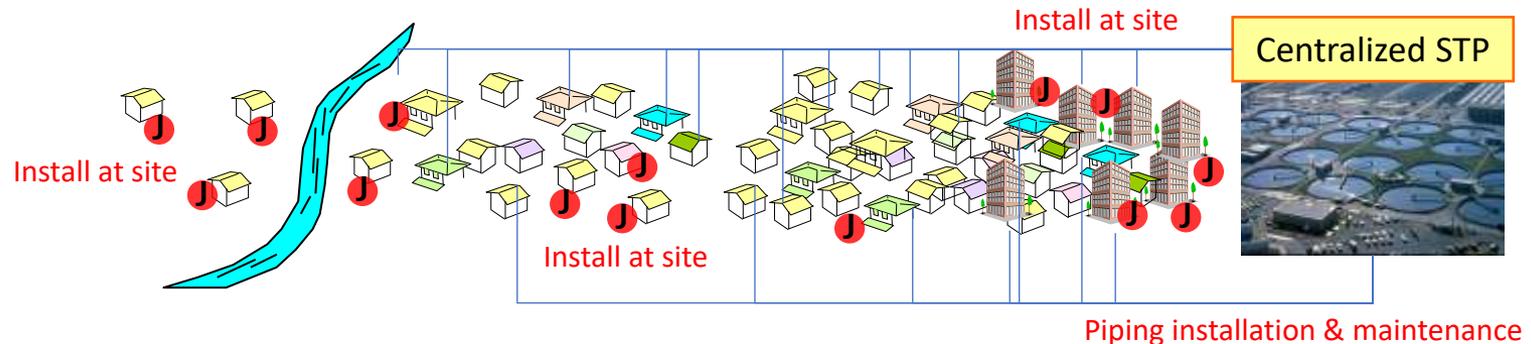
	Japan	India
Care for Environment	4,641	109
Utilize water resource	104	622
Just for regulation	711	79
No reason	1,704	27
<b>Total</b>	<b>7,160</b>	<b>837</b>



# Main concept of Johkasou-STP

- 'Treat at site, reuse at site' is main concept of Johkasou-STP, and most suitable concept for Indian demand & circumstances

'Treat at site, reuse at site'



Johkasou  
STP

- Treat at site, reuse at site
- Following development speed, it can install & increase
- Building by building, block by block it can install
- Small CAPEX

Centralized  
STP

- Piping cost from house to STP & STP to discharge location
- Based on Long years city development plan
- Pipe maintenance & replacement
- Big CAPEX

# Government & municipality activities in India

## Delhi govt makes 100% recycling of water mandatory in all its schools

### Delhi Govt bans use of groundwater in city parks

Authored By: Swati Bansal

Posted By: swati

Policy matters this week



Posted Date: Tue, 2015-04-28 11:03

0 Comments

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Jal Board.



■ The proposal for the system has been approved and is likely to be notified later this month.

HT ARCHIVE/REPRESENTATIONAL

The government plans to extend the model to public-private schools if it takes off well in government-run schools, he said. "Schools will be given 90 days' time to install the system. This is to ensure that only waste and recycled water is used in the compound and usage of fresh water be limited to basic requirements," Mohaniya said.

The ZLD system pertains to installation of facilities (equip-

ment) for recycling waste water which could be used for purposes other than human consumption. In 2016 the Centre had proposed introducing the ZLD system for industries generating hazardous liquid discharge.

While the National Green Tribunal (NGT) had earlier directed all educational institutions in the national Capital to install rainwater harvesting

(RWH) systems in their premises, Delhi chief minister Arvind Kejriwal had recently announced that the cabinet had directed for RWH to be made mandatory for all government buildings.

According to experts, recycling water is the way forward for the future and it cannot not be done effectively without RWH.

Also, the efficiency of the various systems has to be ensured from time to time for saving water.

"This is a good beginning. There is no escape from recycling used water as sources of water are becoming scarcer day by day. There are different techniques to install ZLD systems such as constructed wetlands or small, mechanised plants. Depending on the level of treatment, the water could be used for groundwater discharge or horticulture, among others. However, the government needs to ensure implementation of both, rain water harvesting and recycling at the same time, to achieve ZLD," said Manu Bhatnagar, principal director, natural heritage, INTACH.

80,000 parks using 360 MLD water everyday

# Government & municipality activities in India



## Delhi Jal Board focuses on decentralised sewage treatment plants

Paras Singh | TNN | Updated: Aug 25, 2018, 7:36 IST



Picture used for representational purpose

NEW DELHI: In a major push towards conserving water and replenishing alarmingly dropping groundwater levels, Delhi Jal Board (DJB) has approved a policy for enforcing decentralised waste water treatment systems across the capital.

"Bulk users such as parks, schools, commercial complexes, industries and

bigger institutions will be required to install decentralised sewage treatment plants (DSTPs). We will initially provide economic incentives but eventually it will be made mandatory," a senior government official said. DJB will now give 90% rebate on sewer charges for those using such plants for water recycling.

# Reference for Reuse\_ Greening & Horticulture



# Reference for Reuse\_ Agriculture



# Reference for Reuse\_ Construction



# Reference for Reuse\_ Building usage



# Reference for Reuse\_ City cleaning



# Green certificate in India

- Johkasou-STP is the first Green certificated product in water treatment in India. And awarded many prizes



# Skill Development

- Skill development program for water treatment professionals. Education will base up for water industry in India and save the environment



# F-STP (Fecal Sludge Treatment)

- Next step of De-centralized STP, India also need Sludge treatment system very soon, so we suggest basic but low energy consumption process

## Step 1

Sample Check  
(Labo test)

BOD, COD, SS  
Fluctuation of  
the FS Quality

## Step 2

Evaporation  
test

Understand  
Organic &  
Inorganic ratio

## Step 3

Coagulation  
test

Understand  
matching the  
type of polymer  
& density

## Step 4

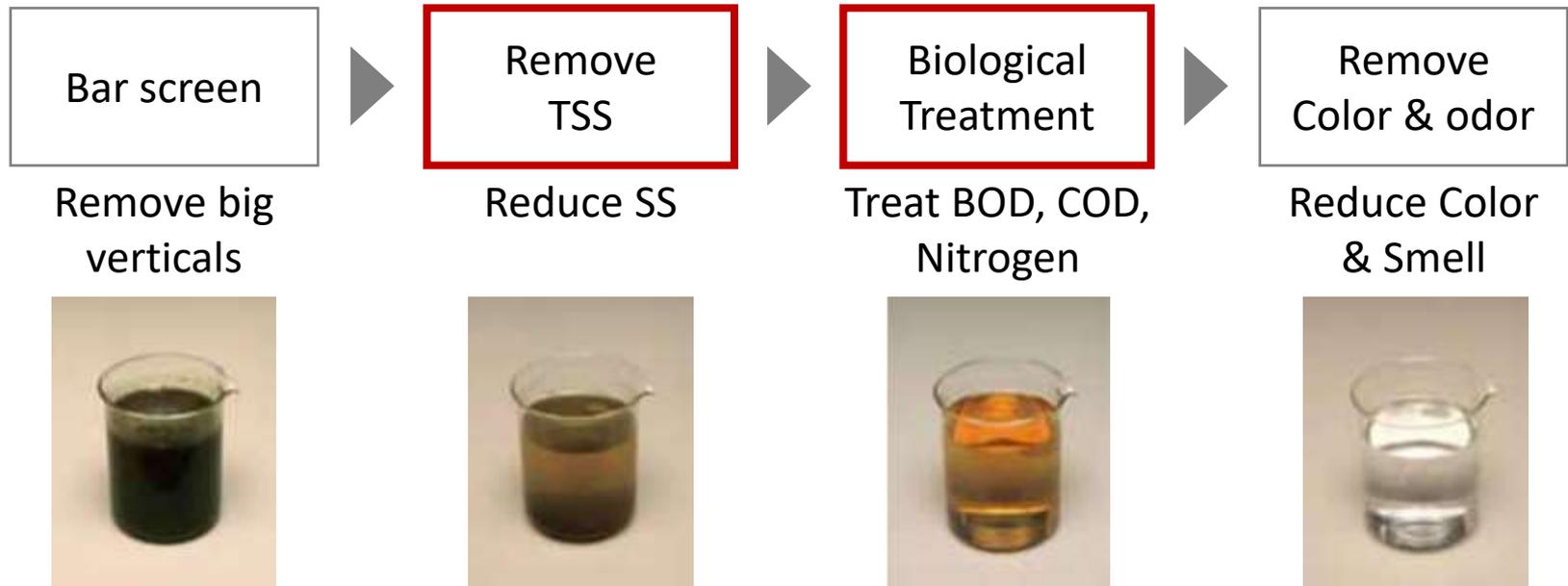
Demo  
machine

Dehydrated  
water goes to  
Labo. And check  
water quality



# Main Process of Fecal Sludge Treatment

- Main Process and treatment level of each stage in Fecal Sludge Treatment. Important and Unique stage is Screw Press and Johkasou-STP



BOD	1,000~2,000	250~350	10~20	Less than 10
COD	4,000~6,000	400~600	50~75	30~50
TSS	10,000~20,000	300~600	20~30	Less than 10



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Thank you