

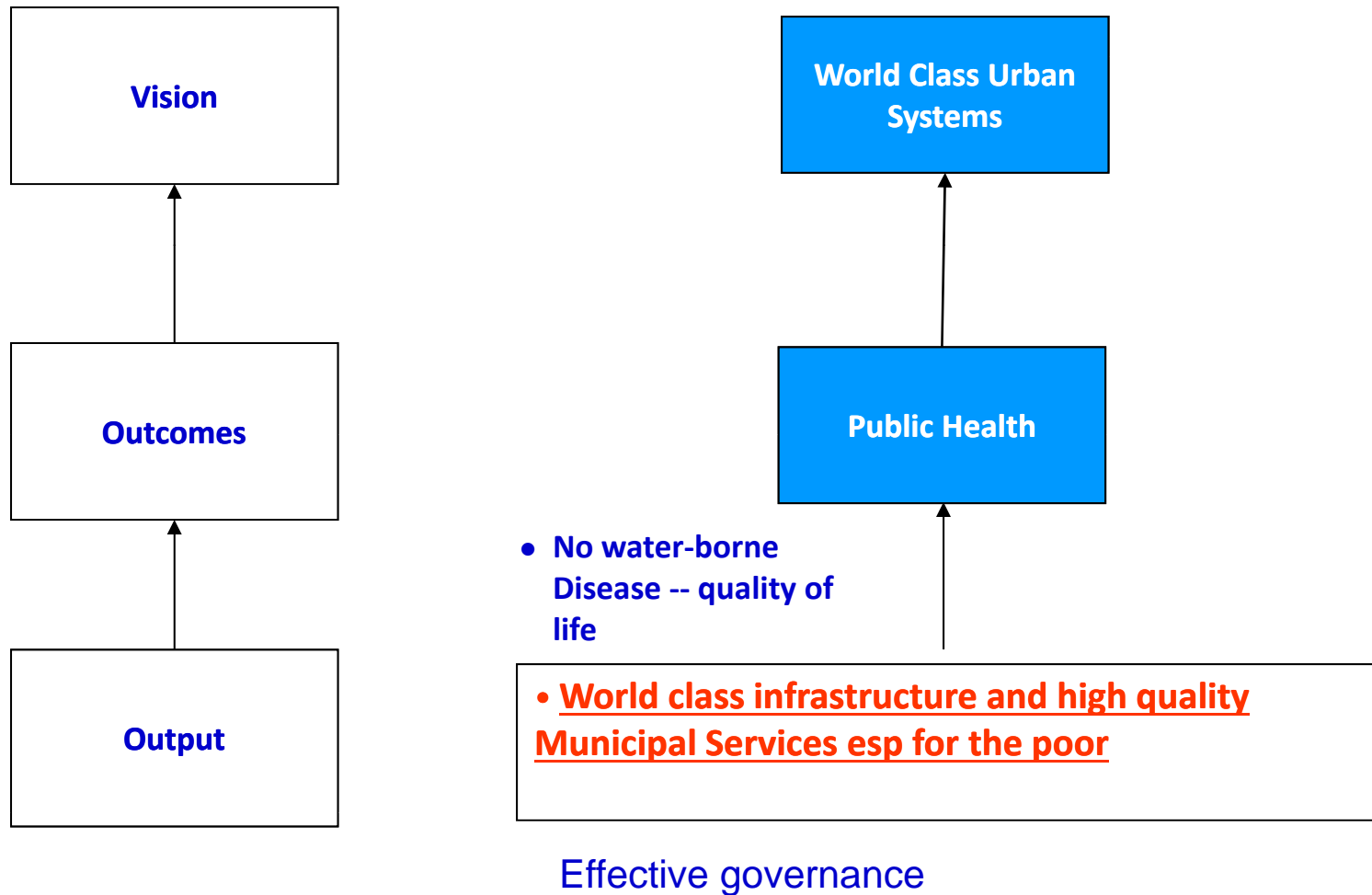


Urban Sanitation : Experiences and Lessons

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Livable and Productive Urban System



Approaches for safe disposal – excreta and black waste water

1) Reticulated systems (sewerage system)

- Collection and treatment and disposal

2) On site sanitation

- I. Leach pits – individual
- II. Septic tanks – individual
- III. Community toilets –
 - commercial/floating pop
 - Low income areas

Benchmarks : Water Supply

Proposed Indicator	Benchmark
<i>Coverage of Water Supply Connections</i>	<i>100%</i>
Per capita availability of water at consumer end	135 lpcd
Extent of metering of water connections	100%
Extent of non revenue water	20%
<i>Continuity of Water Supply</i>	<i>24X7</i>
Efficiency in redressal of customer complaints	80%
Adequacy of Treatment and Disinfection and Quality of Water Supplied	100%
<i>Cost recovery in water supply services</i>	<i>100%</i>
Efficiency in collection of water supply related charges	90%
Number of persons receiving less than 70 lpcd	0%

Benchmarks : Sewerage

Proposed Indicator	Benchmark
Coverage of Waste Water Network Services	100%
Collection Efficiency of Waste Water Network	100%
Adequacy of waste water treatment capacity	100%
Quality of waste water treatment	100%
Extent of reuse and recycling of treated waste water	20%
Extent of cost recovery in waste water management	100%
Efficiency in redressal of customer complaints	80%
Efficiency in collection of sewerage charges	90%
Extent of Sewer House Connection	100%
Coverage of Toilets	100%

Water Supply - Median Analysis

S.no	Indicator	Unit	Benchmark	Median Value
1	Coverage of water supply connections	%	100	67.5
2	Per capita availability at consumer end	Lpcd	135	93
3	Extent of metering of water connections	%	100	0
4	Extent of Non Revenue water	%	20	30
5	Continuity of Water Supply		24 X 7	1.3
6	Efficiency in redressal of customer complaints	%	80	90
7	Adequacy of Treatment and Disinfection and Quality of Water Supplied	%	100	70
8	Cost recovery in water supply services	%	100	25
9	Efficiency in collection of water supply related charges	%	90	60

Sewerage – Median Analysis

S.no	Indicator	Unit	Benchmark	Median Value
1	Coverage of Toilets	%	100	70
2	Coverage of Waste Water Network Services	%	100	23.5
3	Collection Efficiency of Waste Water Network	%	100	0
4	Adequacy of waste water treatment capacity	%	100	0
5	Quality of waste water treatment		100	0
6	Extent of reuse and recycling of treated waste water	%	20	0
7	Extent of cost recovery in waste water management	%	100	0
8	Efficiency in redressal of customer complaints	%	80	0
9	Efficiency in collection of sewerage charges	%	90	0

Sanitation Options

Hoshangabad

Population (2011) – 1,38,000
% dependent on Septic Tanks –
74%

Nashik

Population (2011) –
15,00,000
% dependent on Sewerage
System – 89%

Kochi

Population (2011) – 6,01,000
% dependent on Septic Tanks –
90%

Shimla

Population (2011) – 1,69,000
% dependent on Septic Tanks –
70%

Varanasi

Population (2011) – 14,35,000
% dependent on Sewerage System –
43%

Raipur

Population (2011) – 10,10,000
% dependent on Septic Tanks –
62%

Vikarabad

Population (2011) – 54,852

Sanitation options

- Sewerage system (with or without STP) – 20-23 %
- Onsite sanitation options – primarily septic tanks – 60 %
- Open Defecation – 17-20%

Allandur Municipality

- Demand led approach
- Equity participation of ULB, Citizen, Financial institution
- Build own operate contract of sewerage treatment
- Leadership driven initiative –Emphasis on awareness creation, visible impact

- *Capital intensive & high O & M*
- *Poor may not be benefited.*

CSPs - Lessons

- Sewerage (reticulated) system is expensive; and it is not the only way to achieve public health outcomes
 - City of Brussel and Milan (Famous European cities) till recently discharged untreated effluents to water bodies.

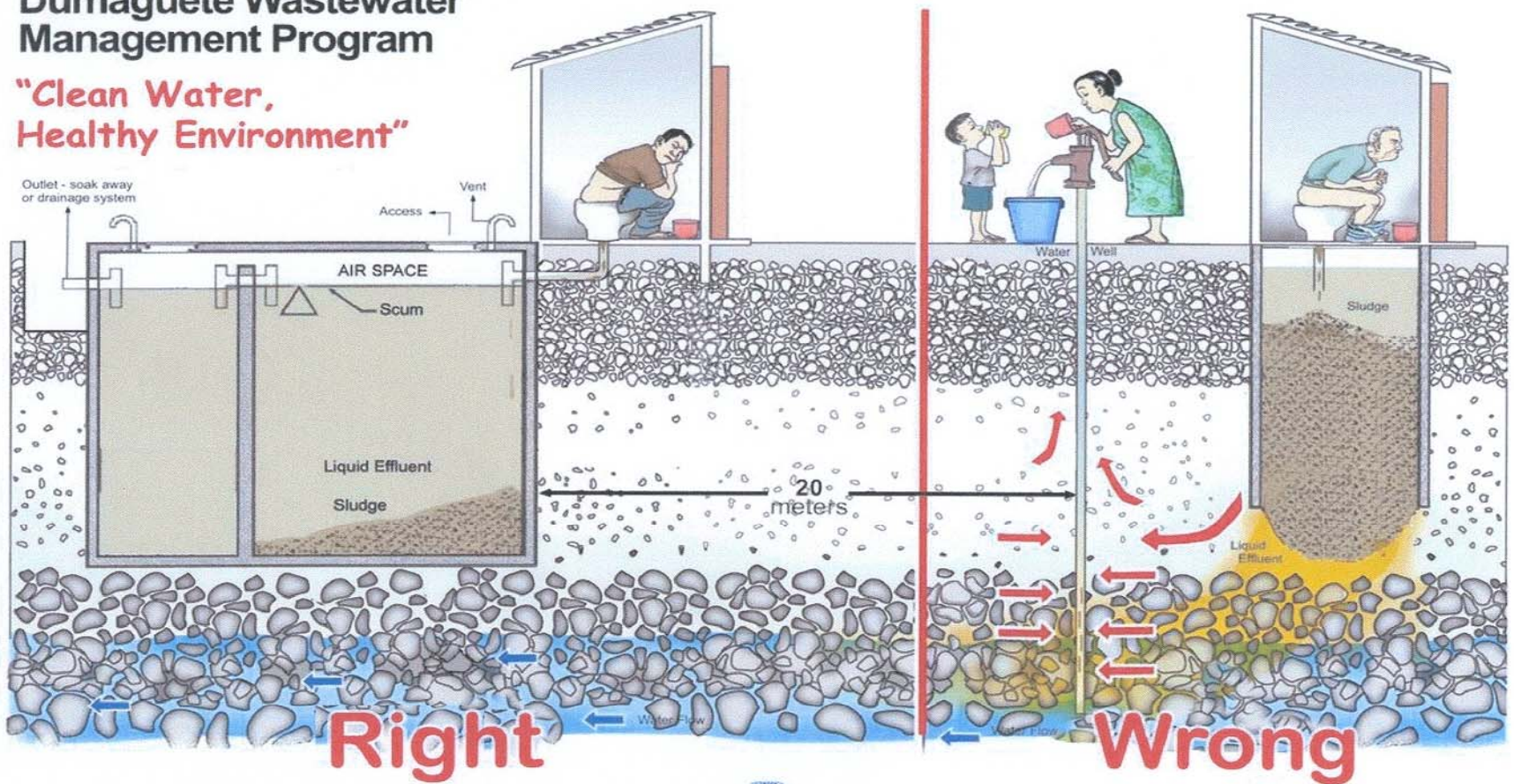
On site sanitation

- Low cost leach pits – ILCS
 - Suitable in specific conditions
 - Potential to contaminate G.Water
- Household septic tank
 - Popular & expensive
 - potential to contaminate G.W, unsafe disposal of septage is a concern

The Correct Septic Tank

Dumaguete Wastewater Management Program

"Clean Water, Healthy Environment"



If in doubt call the
SAFE septic
FREE
helpline
4443 4535

Call this helpline if...

- smelly water is ponding below your trenches
- excessive smells are emanating from your tank or trenches
- your tank is constantly overflowing sewage
- your tanks solids levels have not been checked for more than three years
- your tank has not been pumped out for more than 5 years

www.shoalhaven.net.au/~pumpouts



The official sewage contractor for the Shoalhaven City Council
 Post Box 89 Saxeo Hill
 Office: Wondwan
 Wondwan

Shoalhaven CITY COUNCIL
 Shoalhaven Water: 4429 3343
 Safe Septic Helpline: 4443 4535

MORE TIPS FOR A HEALTHY SEPTIC SYSTEM

Avoid the use of bleach, whiteners, nappy soakers, highly alkaline detergents (the ones with the blue/green beads), - instead use biodegradable septic safe disinfectants & detergents.
 Never pour oil or grease down the drains.
 Do not plant trees or shrubs near the absorption trenches - sunshine is needed on trenches not shade or tree roots.
 Mow the grass regularly for maximum transpiration.
 Antibiotics will kill off the micro-organisms.
 Avoid excessive water use, call our hotline for advice on disposal of grey water.
 Don't let solids build up and clog your trenches. Have your system checked every 3 years by a professional. Call our help line for a free tank inspection.
 Don't wait for your system to fail. CALL OUR FREE HELP LINE

is your septic system **SAFE** ?

Problems with septic tanks have been brought to Councils attention. If your septic is not functioning correctly it can cause serious health risks to you or your family. Please use this free brochure to check the health of your septic system.



Don't

- ✗ Don't put bleaches, disinfectants, whiteners, nappy soakers and spot removers into the septic tank via the sink, washing machine or toilet.
- ✗ Don't allow any foreign materials such as nappies, sanitary napkins, condoms and other hygiene products to enter the system.
- ✗ Don't use more than the recommended amounts of detergents.
- ✗ Don't put fats and oils down the drain and keep food waste out of your system.
- ✗ Don't install or use a garbage grinder or spa bath if your system is not designed for it.

Reducing Water Usage

Reducing water usage will lessen the likelihood of problems such as overloading with your septic system. Overloading may result in wastewater backing up into your house, contamination of your yard with improperly treated effluent, and effluent from your system contaminating ground water or a nearby river, creek or dam.






Conservative water use around the house will reduce the amount of wastewater which is produced and needs to be treated.

Your septic system is also unable to cope with large volumes of water such as several showers or loads of washing over a short period of time. You should try to avoid these 'shock loads' by ensuring water use is spread more evenly throughout the day and week.

Warning Signs

You can look out for a few warning signs that signal to you that there are troubles with your septic tank. Ensure that these problems are attended to immediately to protect your health and the environment.

Look out for the following warning signs:

-  Water that drains too slowly.
-  Drain pipes that gurgle or make noises when air bubbles are forced back through the system.
-  Sewage smells, this indicates a serious problem.
-  Water backing up into your sink which may indicate that your septic system is already failing.
-  Wastewater surfacing over the land application area.

Trouble Shooting Guide

If there are odours check the following areas:

- ◆ Greasetrap (if installed), is it full or blocked?
- ◆ Absorption field, is it wet or soggy?
- ◆ Has there been recent heavy rain?

Odour problems from a vent on the septic system can be a result of slow or inadequate breakdown of solids. Call a technician to service the system.

Help Protect Your Health and the Environment

Poorly maintained composting toilets can be a serious source of pollution and may present health risks, cause odours and attract vermin and insects.

By looking after your composting toilet you can do your part in helping to protect the environment and

If you would like more information please contact:

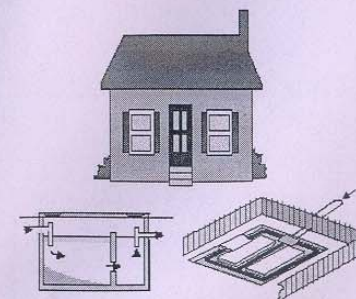
The Development and Environmental Services Group

**Sewage Management Unit
Telephone: 4429 3114**

council@shoalhaven.nsw.gov.au • www.shoalhaven.nsw.gov.au



Your Septic System



Information Brochure

Lessons from CSPs

- Unlike provision of UGD and STP, *onsite sanitation and septage management* is viewed as a 'private provision' with limited role for ULBs.
- *Septage is not perceived as a public health concern.* It is not perceived as an integral component of 'sanitation' and doesn't feature in the sanitation improvement ladder.
- States have *not articulated clear policy on onsite sanitation* particularly related to septic tank regime. Some states have made a beginning post NUSP.
- Septic tank design, construction, operation and maintenance as well as septage handling and disposal is *unregulated* in most ULBs and provisions of the *national building code are not practiced.*

Lessons from CSPs

- The definition of septage is *not clearly established* and *regulatory regime is weak*. Safe disposal of septage is not on the radar of the Pollution Control Boards. They do not perceive this issue as an environmental concern.
- Coping costs for septage management is high (over Rs 2500 per year)
- Septage handling and disposal is often undertaken by unregulated private sector. Tariff, service quality and disposal are not regulated by the ULBs /PCBs.

Lessons from CSPs

- *No organization structure* for on-site sanitation and septage management function.
- *Multiplicity of agencies* without role clarity.
- No separation of service delivery, policy making and regulation leading to diffused accountability
- *Database* on onsite sanitation and septage handling, treatment and disposal is *non-existent*. Credible information with regard to quantity, quality, type of arrangements, tariffs etc is missing.
- *Evidence of health and environmental impacts* (ground water pollution, contamination of open / bore wells) due to bad management of septic tank regime and septage management in India *is limited*.
- *Capacity building* and training related to onsite sanitation *is limited*.

Way forward

- Recognize onsite sanitation as a solutions (under State Strategies)
 - *‘Integrating’ the management of the ‘on-site sanitation’ facilities into the overall sanitation & specifically ‘centralized sanitation/sewerage systems’ of the cities*
- Establish design guidelines, construction practices and regulatory regime for onsite sanitation.
- Promote septage Collection, treatment and disposal systems.

Way forward

- Developing an '*adequate & efficient institutional and governance framework*' to ensure the clarity of roles and responsibilities as well as the accountability mechanisms
- Developing the '*operational and legal & regulatory support framework*' for sustenance of Onsite Sanitation and ISM
- Service level benchmarks for onsite sanitation and ISM
- Database and health evidence
- IEC and advocacy