

OPEN DEFECATION FREE TAMIL NADU



State Planning Commission
5th July 2013

Tamil Nadu State Planning Commission

The State Planning Commission was constituted in Tamil Nadu on 25th May 1971 under the Chairmanship of the Hon'ble Chief Minister as an Advisory body to make recommendations to the Government on various matters pertaining to the development of the State. The Chairman of the Commission is assisted by a team of Members, Consisting of Vice Chairman, Full Time Member & Part Time Members who are experts in various fields. The Additional Chief Secretary to Government, Planning, Development and Special Initiatives and the Principal Secretary to Government, Finance Department are the ex-officio members. The Member Secretary is responsible for administration in the Commission.

The Commission has the following technical divisions:

1. Agricultural Policy and Planning
2. Industries, Power and Transport
3. Land Use
4. Education and Employment
5. Health and Social Welfare
6. District Planning and Rural Development
7. Plan Co-ordination.

Main activities of State Planning Commission :

The major functions of the State Planning Commission are as follows:

1. Preparation of Five Year and Annual Plans based on the policies and priorities of the Government;
2. Undertake Mid Term review of the Five Year Plan, other special reviews on the Economy and advise the Government on appropriate modification and restructuring of the schemes;
3. Monitor development indicators that influence the Human Development Index, Gender Development Index, etc., at a disaggregated level and suggest correctional measures;
4. Undertake special studies as required for formulation and implementation of plan projects and programmes;
5. Tamil Nadu State Land Use Research Board (TNSLURB) is functioning under the chairmanship of Vice Chairman, State Planning Commission as a permanent body in the State Planning Commission. This Board is intended to promote interaction and study in the vital areas of land use. The State Planning Commission organizes seminars/workshops and undertake studies.
6. Human Development Reports (HDRs) were prepared for Dindigul, Sivagangai, Tiruvannamalai, Cuddalore, Nagapattinam, the Nilgiris, Kanyakumari and Dharmapuri districts. The concept of Human Development has been disseminated to all districts through workshops organized in the concerned districts. Proposal for preparation of District Human Development Reports (DHDR) for the remaining districts is under process.
7. State Balanced Growth Fund (SBGF) is operated to bridge the regional imbalances among the districts.

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Workshop Team

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Workshop Sessions

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Inaugural Address	Tmt. Santha Sheela Nair, I.A.S.,(Retd) Vice Chairman, State Planning Commission Chennai – 600 005.
Presentation Session – I Causes for failures and lessons to be learnt	Ms. Uma Maheswari Department of Media Science Anna University, Chennai – 25.
Presentation Session – II Promotion of Sanitary Marts, Production Centre and other alternative mechanisms	Thiru.S.Krishnamurthy, Director, Integrated Development Initiatives Foundation, Mogapair, Chennai
Presentation Session – III Ecological Sanitation and other Technological Options and Designs	(i) Ms.Meera Srikant, Specialist (ii) Thiru.M.Subburaman, Director, SCOPE, Trichy
Strategies for achieving ODF	Dr.Satishkumar UNICEF office for Tamil Nadu & Kerala
Interactive Session	Participants

Profile of Tamil Nadu

Tamil Nadu is located in the southern most part of the Indian Peninsula between the Bay of Bengal in the east, the Indian Ocean in the south and the Western Ghats and the Arabian Sea on the west. Tamil Nadu is one among the fifteen major states in India and fares well in terms of area, economy, literacy, education, health parameters etc.

The total population of the State is 72 million which accounts for 5.96 per cent of the total population of the country. The population density of the State is 555 as per the Census of India 2011. Tamil Nadu is one of the highly urbanized states with 48.45 per cent of the population living in urban areas.

The literacy rate of Tamil Nadu is 80.33 per cent which is higher than the national literacy rate of 74.04 per cent. Similarly, the State fares well in terms of the male and female literacy rates, which are above that of the country. The State's initiatives in health sector reflect in its Infant Mortality Rate, which is 28 (Sample Registration System, 2009). The State has made considerable strides in reducing malnutrition among 0-3 year old children. The life expectancy at birth of 66.2 years is higher than that of the national average 63.5 years.

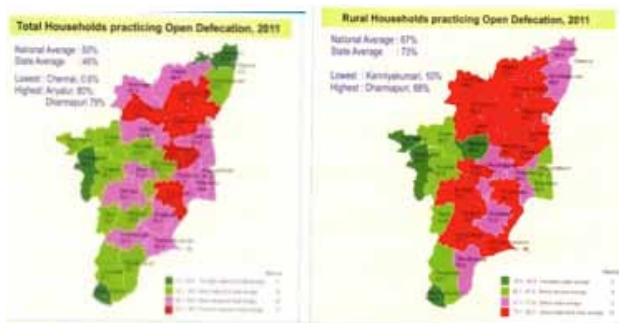
The State has also ensured universal enrolment of children upto 14 years. The State ranked 3rd in terms of human development index among the 15 major states as per the National Human Development Report published by the Union Planning Commission, Government of India (2001). The State is one of the fore front states in attainments of Millennium Development Goals.

The State is the third largest economy next to Maharashtra and Uttar Pradesh. The State's economy is mostly driven by tertiary sector. Agriculture is the mainstay of the rural population. But its declining share to the economy is a concern to the State.

The State boasts of skilled workforce, which is a reason for its industrial development. The State is one of the industrially well developed states in the country. Tamil Nadu witnessed the growth of the new knowledge based industries such as Information Technology (IT), Information Technology Enabled Services (ITES) apart from consolidating its position in the automobile industry.

Present Scenario

As per the Census 2011 report, in Tamil Nadu, 48 per cent of the households have access to latrine facilities within premises and 5 per cent of households use public latrines against the all India average of 47 per cent and 3 per cent respectively. But in the State as high as 45.72 per cent households resort to open defecation against the average 49.84 per cent households in all India. In rural areas, this proportion is 73.27 per cent which is higher than the rural India average of 67.33 per cent. In urban areas too, Tamil Nadu's share of households practicing open defecation is 16.21 per cent against 12.63 per cent in India.



Source : UNICEF /Census 2011

Tamil Nadu which had achieved considerable progress in the household access to sanitation has been ranked among the worst 10 states in India and is the worst performing state in southern India. The State contributes to six percent of Open Defecation in the country and the state may not achieve the MDG target.

While the access to household amenities like vehicles, television, mobile phone is better, the poor access to sanitation is a cause for concern.

Vision for Tamil Nadu 2023

The heart of Vision 2023 is provision of world class infrastructure to all the residents of Tamil Nadu irrespective of their economic status, which include the social infrastructure in terms of universal access to Housing, Water & Sanitation, Energy, Transportation, Irrigation, Connectivity, Healthcare, Education. Vision Tamil Nadu 2023 avows to provide piped and pressurised 24x7 water supply to 100% of its residents and ensure that all of them have access to safe sanitation including **open defecation free** and garbage free environment.

The other themes aimed to make the State the best in Health, Human Development depend on the outcomes of ensuring best sanitation infrastructure in the State.

Vision Theme on Water & Sanitation

Vision 2023 Tamil Nadu identifies ten themes for the State as follows:

1. Tamil Nadu will be amongst India's most economically prosperous states by 2023, achieving a six-fold growth in per capita income (in real terms) over the next 11 years to be on par with the Upper Middle Income countries globally.

2. Tamil Nadu will exhibit a highly inclusive growth pattern – it will largely be a poverty free state with opportunities for gainful and productive employment for all those who seek it, and will provide care for the disadvantaged, vulnerable and the destitute in the state.
3. Tamil Nadu will be India's leading state in social development and will have the highest Human Development Index (HDI) amongst all Indian states.
4. Tamil Nadu will provide the best infrastructure services in India in terms of universal access to Housing, Water & Sanitation, Energy, Transportation, Irrigation, Connectivity, Healthcare, and Education.
5. Tamil Nadu will be one of the top three preferred investment destinations in Asia and the most preferred in India with a reputation for efficiency and competitiveness.
6. Tamil Nadu will be known as the innovation hub and knowledge capital of India, on the strength of world class institutions in various fields and the best human talent.
7. Tamil Nadu will ensure Peace, Security and Prosperity for all citizens and business, enabling free movement and exchange of ideas, people and trade with other Indian states and rest of the world.
8. Tamil Nadu will preserve and care for its ecology and heritage.
9. Tamil Nadu will actively address the causes of vulnerability of the state and its people due to uncertainties arising from natural causes, economic downturns, and other man-made reasons and mitigate the adverse effects.



10. Tamil Nadu will nurture a culture of responsive and transparent Governance that ensures progress, security, and equal opportunity to all stakeholders.

The Honourable Chief Minister has announced that the State would achieve Open Defecation Free Status by 2015. A multi-pronged strategy is needed at this juncture to achieve the Chief Minister's Vision.

Executive Summary

The State Planning Commission organized a Workshop on "Achieving Open Defecation Free Status" with an objective to formulate strategies achieve the Chief Minister's Vision by learning from the past experience, explore various technology options to suit local conditions, involvement of local body leaders in the initiative so as to hasten the pace.

In the workshop, the findings of a Study by the Department of Media Sciences,

Anna University under the aegis of UNICEF and Department of Rural Development & Panchayat Raj was presented. The aim of the study was to find the status of the individual household latrines constructed earlier, to find out the causes for failures so as to formulate future strategies.

The study was conducted in 3 districts. The study employed a household survey by canvassing an interview schedule with the beneficiaries under TSC in these districts. Focused Group Discussions were also held with the community.

Many reasons could be attributed for failure of toilets. The first and foremost is lack of awareness among the people on safe sanitation practices and non-willingness to behavioral change. Other reasons include myths about toilet possession and usage, lack of technical know-how of toilets, lack of IEC activities on Sanitation, male centred mindset, unaware of health problems due



to poor sanitation, considering the cost and economics in construction and maintenance of a toilet and not the benefits.

A supportive system needs to be provided at the local and state level along with suitable policies and effective IEC campaign. The Rural Water Supply and Sanitation Department of Government of India and the PRIs could support hardware subsidy. Efficient and effective communication support would help to improve Sanitation and Hygiene Behaviour Change.

The Department of Rural Development & Panchayat Raj presented the key initiatives to improve rural sanitation by renovation of Integrated Sanitary Complexes for Women and New Sanitary Complexes for Men, Revival of "CLEAN VILLAGE CAMPAIGN" and convergence of Nirmal Bharath Abhiyan with MGNREGS and Central & State Housing Programmes to increase coverage of individual household toilets, construction of School toilets, baby-friendly in Anganwadi Centers and enhancing the unit cost for construction of toilets and improved type designs. The State has initiated a new IEC campaign in association with UNICEF for awareness generation and construction of Individual Household toilets.

Though the purpose of toilets is to

provide safe sanitation, the type could differ from place to place. In fact, the toilets must be designed based on the local soil type and water table for effective functioning and minimizing failures. Flush toilets unsuccessful due to high water table in some areas and in other areas, water scarcity makes it ineffective. Ecosan toilets provide a low-cost sanitation solution in water scarce and rich areas. It ensures hygienic disposal with lowered risk of infections. Water conservation and Soil conservation are possible with Ecosan toilets.

Rural Sanitary Mart is a commercial venture with a social objective to provide materials Services and guidance needed for constructing IHHL & other sanitary facilities which are technologically and financially suitable to the area. Rural Sanitary Mart could take up the production and sales of required materials with the community participation, design of individual household toilets suitable to the village and community. This helps in reducing the construction cost, improved quality due to community monitoring, provides effective supply chain, provides employment to locally trained skilled labourers, and ensures no loss in wastage as production is based on the need. A Rural Sanitary Mart can also function as a profitable business enterprise. The first Rural Sanitary Mart of Tamil Nadu was

established in the year 1993 at Kavindapadi, Erode district to support Intensive Sanitation Programme by INDIA (NGO) with the support of UNICEF.

Total Sanitation Campaign

Total Sanitation Campaign is a Centrally Sponsored scheme to promote sanitation. The main objectives of the TSC are as under:

- a) Bring about an improvement in the general quality of life in the rural areas.
- b) Accelerate sanitation coverage in rural areas to access to toilets to all by 2012.
- c) Motivate communities and Panchayat Raj Institutions promoting sustainable Sanitation facilities through awareness creation and health education.
- d) In rural areas, cover Schools and Anganwadis by March 2012, with sanitation facilities and promote hygiene education and sanitary habits among students.
- e) Encourage cost effective and appropriate technologies for ecologically safe and sustainable sanitation.
- f) Develop community managed environmental sanitation systems focusing on solid & liquid waste management.

The strategy is to make the Programme

‘community led’ and ‘people centered’. A “demand driven approach” was to be adopted with increased emphasis on awareness creation and demand generation for sanitary facilities in houses, schools and for cleaner environment. Alternate delivery mechanisms were to be adopted to meet the community needs. Subsidy for individual household latrine units has been replaced by incentive to the poorest of the poor households. Rural School Sanitation is a major component and an entry point for wider acceptance of sanitation by the rural people. Technology improvisations to meet the customer preferences and location specific intensive IEC Campaign involving Panchayati Raj Institutions, Co-operatives, Women Groups, Self Help Groups, NGOs etc. are also important components of the strategy. The strategy addresses all sections of rural population to bring about the relevant behavioural changes for improved sanitation and hygiene practices and meet their sanitary hardware requirements in an affordable and accessible manner by offering a wide range of technological choices.

The main components of the programme are:

- (a) Start up Activities
- (b) IEC Activities
- (c) Rural Sanitary Marts and Production Centers

Experience and Learning from TSC:

- Implementation of Total Sanitation Campaign was characterised by the a typical phenomenon of '**Slip back**', which implies that a toilet constructed at one point in time would cease to exist at a later stage.
- The assumption that introducing the basic toilet infrastructure would trigger behaviour change and that such changes gradually gains momentum" is **not true**. In the absence of regular engagement with the community (post service delivery) and continued/vibrant connection between the user and service provider, effective behaviour change does not materialise.
- Behaviour Change **Communication inputs are required equally intensively after the services are provided**. These inputs are in terms of community interactions/consultations for commitment towards adoption of certain behaviours. Most critically, the process of service delivery (in the context of WASH services) should be visible and accessible to the user/community in order to infuse confidence in them and establish assurance of services.
- The design for BCC will have to address issues beyond "adoption of toilets and their use". **Continuity in community engagement** to support behaviour change, over a period of time, is of critical importance. Also, the BCC initiatives need to be supported by (1) proper institutional mechanism, (2) service delivery and (3) monitoring mechanisms.
- 'Slip back' phenomenon is a serious issue and hence "Sustainability" is a key concern in implementation of the sanitation programme.

Our learning from the erstwhile Total Sanitation Campaign (TSC) has very clearly indicates that results in implementation of the sanitation programme could not ensure sustainability due to the following key factors:

- The programme was implemented in a **supply driven mode** although the policy prescribed a demand driven approach; the users were rarely consulted before and while providing the toilet structure. Driven by targets to achieve toilet construction, the theme of community involvement gradually blurred and finally disappeared.
- The programme was **target driven** and hence proper construction became a lesser priority and the focus shifted to coverage at any cost. The definition of coverage was expanded to **incomplete construction** of toilets" with the expectation that the user household will do the needful. In the absence of effective community involvement, this expectation remained unmet in most cases.
- Most people who did not use the toilet even after being provided with the facility complained that the **quality** of the infrastructure/construction was the most significant deterrent and
- Finally, the **service providers abruptly withdrew as soon as the toilet is constructed**; it was possibly necessary that engagement with the community during the post construction phase is continued for a period of time.
- The situation explained above further aggravated in the **absence of proper monitoring mechanisms**.

- (d) Provision of Revolving Fund in the District
- (e) Construction of Individual Household Latrines
- (f) Community Sanitary Complex
- (g) Institutional Toilets
- (h) Ecological Sanitation
- (i) Solid and Liquid Waste Management
- (j) Administrative Charges



For the implementation of TSC, State Governments set up a Communication & Capacity Development Units (CCDUs) for taking up state level HRD & IEC activities as well as monitoring of TSC projects. Gram Panchayats were given a pivotal role in the implementation of Total Sanitation Campaign. The TSC was implemented by the Panchayati Raj Institutions at all levels. They were expected

to carry out the social mobilization for the construction of toilets and also maintain the clean environment by way of safe disposal of wastes.

Panchayats were expected to play a key role in promoting regular use, maintenance and up gradation of toilets and inter-personal communication for hygiene education. Panchayats and NGOs who are in the frontline of implementation have a key role in ensuring that safety standards are being met with all components of TSC e.g. the distance between water source and a latrine – adhering to the minimum distance for IHHL, School and AW toilets and community sanitary complexes; regulating pit-depth, pit lining to prevent pollution, collapse of pit etc.

NGOs were given an important role in the implementation of TSC in the rural areas. They were expected to be actively involved in IEC (software) activities as well as in hardware activities. Their services were required to be utilized not only for bringing about awareness among the rural people for the need of rural sanitation but also ensuring that they actually make use of the sanitary latrines. NGOs were also encouraged to open and operate Production Centers and Rural Sanitary Marts. NGOs were also engaged to conduct base line surveys and PRAs specifically to determine

key behaviour and perceptions regarding sanitation, hygiene, water use, O&M, etc.

Despite these initiatives, the programme could make little progress in the coverage status.

The Department of Media Sciences, Anna University conducted a Study on the behest of UNICEF and Department of Rural development & Panchayat Raj with an objective to find the status of the Individual household latrines constructed earlier, to find out the causes for failures so as to formulate future strategies. The study found out that

- Very few households only have toilets.
- Many of the toilets built are not being used.
- Awareness on sanitation is low among the people.



- Possession and sustainable use of the toilets among public is important.

Many reasons could be attributed for failure of toilets. The first and foremost is lack of awareness among the people on safe sanitation practices and non-willingness to behavioural change. Other reasons include myths about toilet possession and usage, lack of technical know-how of toilets, lack of IEC activities on Sanitation, male centred mindset, unaware of health problems due to poor sanitation, considering the cost and economics in construction and maintenance of a toilet and not the benefits.

A supportive system needs to be provided at the local and state level along with suitable policies and effective IEC campaign. The Rural Water Supply and Sanitation Department of Government of India and the PRIs could support hardware subsidy. Further for the Social marketing for different toilet models Eg. Cement companies, companies manufacturing toilet fittings, and other well-known urban bathroom fitters could be roped in. Establishment of village sanitary care centre with toll-free number for after service would really help the villagers in case of failures or problems.

Sanitation Technology Choices

In many cities, towns and rural areas of the world today people live and raise their children in highly polluted environments. Urban and peri-urban areas in developing countries are among the worst polluted and disease ridden habitats of the world. Much of this pollution, which leads to high rates of disease, malnutrition and death, is caused by a lack of toilets and inadequate sanitation services. The lack of sufficient or adequate services is a result of many factors, including: inadequate financial resources, insufficient water, lack of space, difficult soil conditions and limited institutional capabilities. As cities expand and populations increase, the situation will grow worse and the need for safe, sustainable and affordable sanitation systems will be even more critical.

Sanitation is a key determinant of both equity in society and society's ability to sustain itself. If the sanitation challenge could not be met, we will not be able to provide for the needs of the present generation without hindering that of future generations. Thus, sanitation approaches must be resource minded, not waste minded. Similarly, there can be no equity as long as half the world's population goes without even basic sanitation.

A system of sanitation that contributes toward these goals (equity and a sustainable society) must meet or at least be on the way towards meeting the following criteria:

Prevent disease: A sanitation system must be capable of destroying or isolating faecal pathogens.

Affordable: A sanitation system must be accessible to the world's poorest people.

Protect the environment: A sanitation system must prevent pollution, return nutrients to the soil, and conserve valuable water resources.

Acceptable: A sanitation system must be aesthetically inoffensive and consistent with cultural and social values.

Simple: A sanitation system must be robust enough to be easily maintained with the limitations of the local technical capacity, institutional framework and economic resources.

The sanitation practices that are promoted today fall into one of two broad types: flush-and-discharge or drop-and-store. Over the past hundred years flush-and-discharge has been regarded as the ideal technology, particularly for urban areas. For those without access to flush-and-discharge the conventional alternative is a drop-and-store device, usually a pit toilet, based on

containment and indefinite storage of human excreta. Drop-and-store is often regarded as an inferior, temporary solution compared with flush-and-discharge.

Most cities in the Third World cannot afford the necessary resources, in terms of water, money and institutional capacity, to provide a flush-and-discharge system. Many of these cities will face extreme water shortages, threatening the life and health of the inhabitants. Globally, some 80 countries with 40% of the world's population are already suffering from water shortages at some time during the year.

Flush-and-discharge approaches can work well and achieve an acceptable level of pathogen destruction. However, in the Third World, sewage is nearly always discharged into the environment at large without treatment.

Globally, sewage discharges from centralized, water-borne collection systems are a major component of water pollution, contributing to the nutrient overload of water bodies, toxic algae blooms (e.g. red tides) and adversely influencing tourism in some coastal areas. Although such systems are acceptable to the vast majority of people, they are not simple and require institutional capability and technical skills not presently available in many Third World cities.

Approach to Sanitation

The approach to sanitation is based on three fundamental aspects: rendering human excreta safe, preventing pollution rather than attempting to control it after we pollute, and using the safe products of sanitized human



excreta for agricultural purposes. This approach can be characterized as sanitize-and-recycle.

This ecological sanitation or eco-san for short approach is a cycle a sustainable, closed-loop system. It treats human excreta as a resource. Human excreta are processed on site and then, if necessary, further processed off site until they are completely free of disease organisms. The nutrients contained in the excreta are then recycled by using them in agriculture.

In urban areas the necessity to remove excreta from such installations can cause significant risks to the local community and workers. Correctly operated Ecosan systems can mitigate these risks entirely by reducing pathogen content of faeces prior to removal. Further advantages of ecosan over on-site systems are that they generally smell less (attracting fewer flies), and in areas with hard ground or a high water table pit latrine construction can be problematic, Ecosan overcomes this with options that do not require ground excavation.

Ecological Sanitation (EcoSan) is an environment friendly sustainable sanitation system which regards human waste as resource for agricultural purposes and food security. In contrast to the common practice of linear waste management which views

waste or excreta as something that needs to be disposed, EcoSan seeks to close the loop of nutrients cycle, conserve water and our surrounding environment. In other words, EcoSan is a system that prevents diseases, protects the environment and recovers & recycles nutrients and organic matter from waste materials. The most common form of EcoSan is the urine separating toilets which collect urine and faeces separately and recycles them as organic fertilizer.



Types of Ecological Sanitation

The types of ecosan toilet can be separated into two categories, dehydrating and composting. Within these categories there is also a distinction between urine diversion (those that separate urine from faeces to achieve a variety of benefits) and systems which mix both urine and faeces. There are a variety of models operating in slightly different ways.

Dry Ecosan

The principle of dry EcoSan is mainly to collect feces in dry state using dry materials such as ash, husk and saw dust to cover the feces instead of using water to flush it, which is the traditional practice. The urine is diverted and collected separately. As the dry system saves water, this type of toilet can be most useful in regions where water is scarce. The only water consumption and wastewater produced in this type of toilet is during the process of anal cleaning, which requires about one liter of water per use. The wastewater from anal cleaning is collected separately in a soak pit or a small constructed wetland just outside of toilet. This prevents underground water contamination.



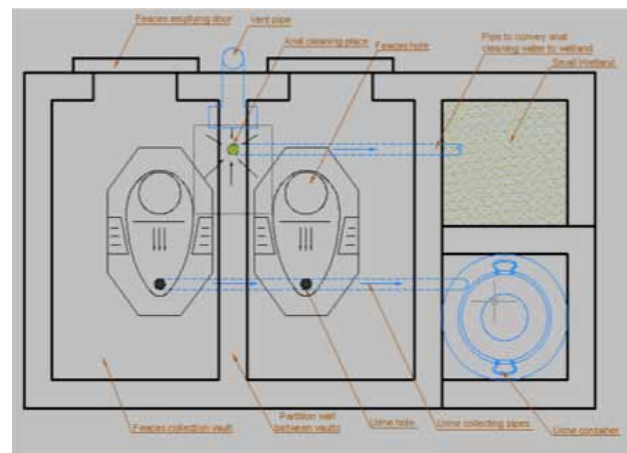
EcoSan Toilet

Dry Ecosan With Squatting Pan

This type of toilet can have a single pan or double pan. The double pan version which has two vaults is the most common type and is usually constructed outdoors. The single pan version is more suitable for indoor conditions or where space is a constraint.

Double vault EcoSan

This toilet has two vaults each having capacity of 0.3 m³, above the ground level for feces collection. Each vault has a length of 3 feet 4 inches, width of 2 feet and height of 2 feet, and each has an opening of 12x12 inches in the back side for emptying the feces. In this type of EcoSan, one vault is used for a period of approximately six months. Once it is filled,



the second one is used, while the first one is left untouched for dehydration. Once the second vault is also filled, the first vault is

emptied and reused. The contents of the first vault is then further composted or applied directly in the fields. The vaults are thus used alternatively every six months. The vaults are constructed above the ground level to avoid ground water seepage and have a 4 inch thick brick masonry wall. Vaults are separated by 4 inch partition wall. Outside of toilet there is urine collection tank (usually a 100 liter plastic tank) and a small wetland for the treatment of anal cleaning water.

Two vault solar model

Two vault solar model EcoSan is very similar to the double vault EcoSan described previously. The only difference is that the vaults of feaces are designed slightly bigger and they extend beyond the wall of the toilet. The opening of the vaults face south and have an inclined shape with a black metal or fiber sheet as cover to capture solar heat so as to assist in the drying the feaces.

Dry Ecosan With Commode

This EcoSan is similarly to the single pan dry EcoSan, except a special type of commode that has separate outlets for urine and feaces is used instead of a squatting pan. This type of EcoSan is more common in western countries.

Wet Ecosan

A Wet EcoSan separates urine and feaces but water is used for flushing the feaces and the feaces is sent along with the anal cleansing and flush water. The main benefits of this type of EcoSan is that using the toilet is easier as water can be used for flushing which is a common practice in India, and a separate location for anal cleaning is not required. Furthermore, as it is not much different from the more common types of toilets and there is no need to handle feaces regularly, it may be socially more acceptable than the dry EcoSan. The main disadvantage is that it uses the same amount of water as an ordinary toilet and utilizing the feaces can be difficult. There are two types of wet EcoSan toilets:

Urine diverting double pit toilet

This type of toilet is similar to a pour flush double pit latrine, except it has a separate system for collecting urine. Typically, there are two pits made of concrete rings for collecting the feaces and wastewater and the capacity of a single pit is designed for 2 years. As in dry EcoSan the pits are used alternatively. Urine is collected in a container fixed outside of toilet.

Biogas attached toilet

The biogas attached toilet recycles human excreta, along with other types of waste such as cattle dung, to produce biogas, which can be used for cooking and lighting and slurry that can be used for composting. Almost all of these are fixed dome type plants with capacities of 4, 6, 8 or 10 m³. The ordinary biogas attached toilet can be slightly modified by replacing the pan in the toilet with a urine diverting EcoSan pan to collect urine separately and send only the faeces along with the flush water and anal cleaning water to the biogas digester.

Further Benefits

Ecosan systems have not always been driven by a need to recycle nutrients, water

scarcity, high water tables, rocky ground and a need to minimise pollution are alternative reasons for adoption. Urban dwellers' lack of land may mean they have no use for compost, in this case the material could be bagged and sold to generate further income although this can be a problematic task to carry out if not done collectively.

The use of ecosan has the potential to provide communities with food security for many years to come, as the compost not only provides nutrients, but also conditions the soil to which it is added.

In many areas subsistence farmers find it increasingly difficult to meet the costs of fertilisers, ecosan provides them with a cheap alternative to supplement their needs.



Ecosan can also generate income through construction, operation and maintenance of facilities, providing bulk treatment in urban areas and re-sale of by-products.

As a result of being a low odour technology, ecosan also enables facilities to be constructed both inside and outside the home. Facilities constructed indoors can provide a safe and private environment for both women and children. Critically, ecosan (if operated correctly) achieves the primary goal of minimising disease via treating faeces (or combined faeces and urine) and separating waste from householders whilst it contains dangerous pathogens. Crucially it also prevents these pathogens from entering the water cycle.

Alternate Delivery Mechanism

An important feature in the Total Sanitation Campaign was that it encouraged alternate delivery Mechanism to provide materials, services and guidance needed for constructing different types of latrines and other sanitary facilities, which are technologically and financially suitable to the area.

The Rural Sanitary Mart is an outlet dealing with the materials required for the construction of not only sanitary latrines

but also other sanitary facilities required for individuals, families and the environment in the rural areas. RSM should necessarily have those items, which are required as a part of the sanitation package. It is a commercial venture with a social objective. The main aim of having a RSM is to provide materials, services and guidance needed for constructing different types of latrines and other sanitary facilities, which are technologically and financially suitable to the area. Production Centres are the means to improve production of cost effective affordable sanitary materials. The Production Centres/Rural Sanitary Marts could be opened and operated by NGOs/ SHGs/ women Organizations/Panchayats. For this purpose, less than 5 percent (subject to a maximum of Rs. 35.00 lakh) of the total Government outlay has been earmarked. Funding for this component will be in the ratio of 80:20 between the GOI and the State Government. Further, under the TSC project, maximum amount of Rs.3.5 lakh per Rural Sanitary Mart/ Production Centre can be provided. The fund may be provided to the NGOs/ Panchayats/ other agencies for setting up of RSMs/PCs. The fund can be provided for construction of shed, training of masons and also as a revolving fund. After RSM/ PC attains a level of sustainability, the revolving fund should be refunded to the District Implementing Agency. The District

Implementing agency should identify key training institutions/ Resource persons to train the Mart/ Production Centre Managers. They should also have a Memorandum of Understanding with the RSMs/PCs and, a system of joint monitoring evolved to ensure that the RSMs & PCs are successful as an enterprise and function in accordance with the objectives of the Programme.

Rural Sanitary Mart is a commercial venture with a social objective to provide materials Services and guidance needed for constructing Individual Household Latrines & other sanitary facilities which are technologically suitable to the area and financially viable to the rural people.

The first Rural Sanitary Mart of Tamil Nadu was established in the year 1993 at Kavindapadi, Erode district to support ISP (Intensive Sanitation Programme) by INDIA an NGO, working in Sanitation sector, with the support of UNICEF. In 1994, a team from Tamil Nadu underwent training at Allahabad University for Managing Rural Sanitation & rural Sanitary marts.

Rural Sanitary Mart undertakes Sales of Construction materials, Bricks, Hollow/Solid blocks, Pan(Ceramic, Plastic), and Production of required articles such as RCC Rings, Pit covers, Junction box covers, Cement Jollies and Pan.



The Rural Sanitary Mart has constructed other sanitary facilities such as child friendly toilets, user-friendly hand wash structures, Girl-friendly toilets with facilities to change Napkins and to dispose them safely, construction of Incinerators based on the needs, along with Individual Household toilets under various schemes.

The Rural Sanitary Mart also provides various designs of Individual Household toilets, shared toilets for a group of households which have a space constraint. The reason for the success of Rural Sanitary Mart is its approach to promote community participation in the production of materials, Training of masons on toilet designs. The toilet designs suggested by Rural Sanitary Mart provides for proper ventilation which prevents odour. Participation of the community in the production process helps to reduce the cost and to ensure quality.

The Benefits accrued of the efforts of Rural Sanitary Mart are

- Reduction in the cost of construction since there was cost towards transportation of materials as they were produced locally
- Improvement in Quality, since the community realized that they are the consumers
- Community monitoring since beneficiary participates in the production activities

- Provision of effective supply chain
- Employment generation for the locally available skilled labourers
- Increase in demand for IHHL
- Need based Production of materials and required quantity resulting in no wastage and hence no loss of money invested

With proper training Rural Sanitary Mart can also function as a profitable business enterprise, and this can be replicated in many places.

Role of Panchayat leaders in ensuring Open Defecation Free

As per the Constitution 73rd Amendment Act, 1992, Sanitation is included in the 11th Schedule. Accordingly, Gram Panchayats have a pivotal role in the implementation of Total Sanitation Campaign. The TSC will be implemented by the Panchayati Raj Institutions at all levels. They will carry out the social mobilisation for the construction of toilets and also maintain the clean environment by way of safe disposal of wastes.

In order to encourage village panchayats in achieving total sanitation, awards have been instituted. The "Clean Village Award" is a State Award conferred on the Village Panchayats leader, for achieving clean environment, access to toilet facilities

in the village and proper utilization of those facilities. Similar to this State Award, “Nirmal Gram Puraskar” is being awarded by the Union Government.

Tmt M.Prabha, President, Mullangina -vilai Village Panchayat is a leader of the Village Panchayat. She has been elected as Village Panchayat for more than three times. Her strategies to pursue and construction and usage of toilet facilities had earned her the State award. She met all the families in the Village Panchayat and persuaded them to use toilets. She advocated the benefits of safe sanitation practices, in improving child health and nutrition and more importantly the environment. Her efforts have yielded positive response. With the villagers’ cooperation, the village remains a CLEAN VILLAGE. This showcases the fact the local body leaders can be the prime movers in ensuring safe sanitation.

Discussion

Tamil Nadu is a progressive State in social aspects. The performance in improving literacy, access to education, reducing Infant Mortality rate, Maternal Mortality Ratio and Child Mortality Rate are remarkable. The State has surpassed the MDG goals in terms of poverty reduction, universalisation of primary education, improving child survival

rates, improving maternal health and has been regarded as the Early Achiever. The slow progress in ensuring sanitation is a decelerator.

Tamil Nadu lags behind the sanitation, with 60.7 per cent of Household resort to Open Defecation. Among the 39.3 percent of households which had access to toilets, 20.63 are non-functional. While Kanniyakumari has the highest share of HH toilets, Dharmapuri has the least. The coverage under Nirmal Bharath Abhiyan is also high in all the districts. But there is a vast gap in the availability and usage of HH toilets. Affordability is not an issue, since the tendency to spend for Television and mobile phones seems to be higher than that on toilets. Lack of proper knowledge coupled with attitudinal and perception barriers has resulted in low usage in toilets by people. Since it does not involve any cost towards installation and usage Open Defecation is a much preferred solution. Other issues such as non-availability of water, psycho-social barriers, and economic barriers prevent toilet construction and usage within households. Prime motivators for toilet construction are children. Other contributors are Husband/wife Son-in-law / Daughter in law.

The Government of Tamil Nadu in association with UNICEF has formulated strategies to improve access to Sanitation. The following are the key among them.

- Making Sanitation aspirational
- Addressing Open Defecation as an Unacceptable Social Practice
- Community behaviour Change towards sanitation
- Feasible Sustainable technological solutions
- Integrating Sanitation and Hygiene Practice including Hand Washing
- Multi-pronged approach involving Government Departments, Panchayat Raj Institutions, Self Help Groups, Civil Society, Corporate and Media
- Roll out of Communication Campaign
- Convergence of Nirmal Bharat Abhiyan, Mahatma Gandhi National Rural Employment Guarantee Scheme
- Finalising Technological designs
- Appointing Sanitation Messengers - Swatchchctha Doots as front line functionaries in all Village Panchayats
- Monitoring and Evaluation of the Campaign

Ecosan toilets are the natural solutions for the nature's calls. The man made cycle is a five stage cycle which are drawing from source, polluting, transporting to treatment plants, cleaning, transport back to users. Heavy investment is required to improve sanitation and sustainable water supply to achieve Millennium Development Goals for the creation of necessary infrastructure. But the present infrastructural solution add cost to all activities, from creation to treatment. Water used for flushing creates further problems in either finding water for flushing in water scarce area, and flushing is a problem in water rich areas, where the water table is usually high. Addressing this would be easier, when ecosan methods are followed. Ecosan is coined from Ecological Sanitation in which hygienic mix of traditional methods and modern sanitation is used.

Recommendations

Awareness Building

1. Intensive IEC campaign on Total Sanitation at State, District and Village level is needed to achieve ODF status.
2. The IEC strategy should focus on sanitary outcomes - stopping open defecation rather than mere construction of latrines.
3. The IEC message should incorporate how the toilet can be gender friendly, child friendly, aged friendly and disabled friendly.
4. IEC Campaign should also cover repair of & maintenance of non-functional toilets.
5. Slippage to open defecation can be curtailed by recurring awareness campaigns, which should be considered a part of the process rather than an event.
6. Villages which have achieved ODF status can become master trainers and a part of IEC amount could be provided to these Village Panchayat Presidents to conduct orientations and training programmes.
7. The IEC component should have good visuals highlighting economical, sleek model of toilets.
8. IEC should have visuals in Television; Involving celebrity in promotion of toilets could be explored.
9. Active pursuance and observance of Hand wash day and World Toilet Day could be promoted.

Household Latrines

10. Strong convergence with the Health department would make sanitation a growing demand
11. Various technology options of toilets, that are responsive to the various socio economic conditions of communities and geographical conditions of the area needs to be promoted.
12. The incentive/subsidy delivery system to the beneficiaries may be reviewed. It may be considered to provide the incentive in installments based on completing stages of toilet construction and at the same time it should be hassle free.
13. The revolving fund mechanism to reduce the burden of beneficiaries for the construction of toilets may be expanded.
14. The supply chain mechanism and alternate delivery mechanism needs to be encourages in all districts.
15. Focus on proper operation and maintenance of the toilets, to prevent slippage to open defecation.

School Toilets

16. The location of school toilets should be near a prominent well-lit area, so as to ensure safety and better usage.
17. Modification of existing type design of school toilets accommodating more no. of urinals should be considered.
18. Water supply must be ensured to school and anganwadi toilets.
19. Maintenance mechanism available with school authorities needs to be reviewed to ensure adequate preparedness.

20. Ecosan toilets could be promoted in Schools. The desired models could be towards less water and no water toilet designs .
21. Proper fencing / compound walls should be provided for schools to prevent misuse by anti-social elements.
22. Promotion of Potty training through Anganwadi children, public health centres could be taken up.

Other aspects

23. Facilitate a process of providing resources for decentralized capacity, institutional support systems, hardware, and software outreach and technical inputs for technology and design choices for nurturing the movement for sanitation and hygiene in every community.
24. Like Rain Water Harvesting, Sanitation & Hygiene should be promoted on a campaign mode.
25. Private players can be mobilized for toilet construction on a massive scale if it is projected as a viable proposition.
26. The Toilet designs by Rural Development & Panchayat Raj Department should have ample ventilation as designed by National Institute of Design and Commissionerate of Municipal Administration.
27. Efforts to translate increased awareness and knowledge on usage of toilets into usage of toilets should be taken since there is limited awareness on the harms of open defecation and lesser priority attached to toilet usage.
28. Self Help Group women must be involved in construction, usage and maintenance of sanitary latrines through proper awareness and capacity building.
29. Cultural issues in construction and use of toilets must be taken care.
30. NGP guidelines could be revisited to ensure sustainable maintenance of ODF status for five years and accordingly the award money may be enhanced considerably.
31. To achieve ODF in a time bound manner, 'carrot and stick' policy may be invoked. Various welfare assistance programmes could be linked to toilet construction and usage.



32. A multi pronged approach involving Government Departments PRIs/SHGs/ Civil Society, Corporates, Media could be evolved.
33. Incentivization for constructing a toilet and Dis-incentivising for not constructing a toilet could be thought of.
34. Stipulation for people who contest for local body elections could be imposed and it should be made mandatory for PRI members to shun open defecation.
35. Doctors may be encouraged to spread sanitation, hygiene and toilet usage.
36. PRI leaders must be actively involved in sanitation promotion.
37. For water scarce rural areas, deep slope – Gandhian Model rural pan could be promoted.
38. Engineers of Rural Development & Panchayat Raj / Municipal Administration Department should be exposed on various technology options available.

A strategy note for achieving Open Defecation Free Tamil Nadu has been prepared based on SHACS framework of Government of India and Jharkhand State. This has been prepared keeping in mind the importance of components such as Designing and making the required communication strategy, framework for consultations, Critical programme components, mandatory activities required at the block level, messages and medium suggested and monitoring. This may be considered while implementing Nirmal Bharat Abhiyan and other sanitation promotion schemes which would lead to ODF Tamil Nadu.



General

The aim of the programme should not be limited to promotion of toilet use at the household level, but for communities to collectively opt for sanitary toilets in order to achieve the status of Open Defecation Free (ODF) villages.

Need for a Communication strategy

Communication is a key component in delivery of the Sanitation programme. Hence the strategy needs to be focussed and it should be developed in a systematic manner by involving all stakeholders. To achieve ODF, the aspects such as key concern, Approach, Communication & Monitoring needs to be changed from that which are followed in Total Sanitation Campaign.

Parameters	Total Sanitation Campaign	Nirmal Bharat Abhiyan
Key concern	Community demand for toilets	Community demand for toilets and sustained use
Operational Gaps	Demand driven approach prescribed but not followed	

	Quality parameters prescribed but not followed	
	Poor monitoring of service delivery	
Approach	Promotion of Household toilets	Open Defecation Free (ODF) Villages
Communication	Dissemination of information on Sanitation and Hygiene	Changing Behaviour on Sanitation and Hygiene
Monitoring	Counting toilets	Counting percentage of households using toilets, Counting ODF villages

Designing the communication strategy

(i) Workshop at State and District Level

Apart from state level workshop each district should arrange for wider public consultation, inviting stakeholders along the vertical hierarchy of programme implementation. Two-day workshops for all regions has to be conducted, wherein the participants should be introduced to the process of developing the Communication Plan followed by Group work to formulate the Plans.

(ii) Developing the district level strategies :

The first step in strategy formulation involves identifying barriers and opportunities revolving around the key behaviours and in lieu of a rigorous field survey. An intensive consultation will be conducted with a very large number of participants representing every stakeholder involved in programme implementation. Thus, Block Development Officers, Engineers, Coordinators, representatives of the newly formed Block Resource Centres, Panchayat representatives (elected members), NGOs, members of VWSCs (Village Water and Sanitation Committee) and field workers are to be invited to participate in the consultation. Evidently, the consultation processes had to be strategically facilitated to cull out the barriers and opportunities in a succinct manner.

Framework for consultations

- Formulation of the Communication strategy and Work Plan was primarily based on Consultations and Group Discussions (wherein participants worked in district level groups). At the outset, the participants were oriented on the Socio Ecological model.
- Socio Ecological model focuses on identification of relevant audiences

realistically. Thus, for all the 3 levels indicated in the model, the specific audience at the family level, the second layer of audiences surrounding the families and the stakeholders in the environment influencing the change process were identified. This was followed by identification of barriers and opportunities for each layer of audience.

- The process was preceded by critical information on the (1) implementation strategy, (2) designated responsibilities of functionaries involved in implementation and (3) exhaustive orientation of the sanitary toilet (the specifications of the mandatory components of a sanitary toilet and the variable component).
- Critical programme components and the Consultation process.
- The implementation strategy has to be discussed with an emphasis on achieving ODF villages.
- Given that elimination of open defecation is the overriding priority, the community participation agenda in a village demands consensus building on 100% families opting for and using sanitary toilets.
- Panchayats are vested with the leadership role and subsidies (incentive funds) available under NBA are to be viewed as a community level entitlement accruing to

the VWSC account rather than to individual households.

- The provision of Revolving Funds (under NBA) becomes critical for VWSCs to access a seed capital as loan and initiate the process of toilet construction. The DWSM will adjust the loan amount with the total incentive amount and give the balance/excess amount of fund to the VWSC.
- An exclusive session to be held on the toilet model to explain the sanitation technology, the non-negotiable tenets of a sanitary toilet and negotiable aspects of user's choice.
- There is substantial gap in understanding of the toilet technology both at the grassroots and even amongst functionaries involved in service delivery. Functionality of the toilet, the robustness of the structure and post construction services is critical for ensuring sustainability. Also, the need for establishing an effective supply chain mechanism is essential for ensuring the credibility of a vibrant campaign for behaviour change.
- Thirdly, the institutional mechanism for programme delivery is important.
- The role of different functionaries in different stages should be elucidated in the State's Sanitation Policy and it should be widely disseminated.

- The village desirous of achieving ODF should submit a proposal and on achievement of ODF status the total incentive amount will be calculated and adjusted with the loan account.
- On receipt of the proposal, the DWSM will approve the loan amount which will be deposited in the VWSC bank account.

Mandatory activities suggested at Block level

- i. Mobilising the VWSC/Community and developing 100% consensus for ODF village
- ii. Preparing proposal indicating loan amount required and also funds required for Communication activities and Mason's training
- iii. Proposal submission to DWSM
- iv. Follow up with DWSM and release loan amount to be deposited in the bank account of VWSC
- v. Communication activities conducted
- vi. Mason's training conducted
- vii. Construction activities initiated with trained masons with strict vigilance on technical specifications
- viii. Sanitary toilets are constructed in all household and all members of the family are using the toilet

Suggested Monitoring

Block level - 3rd day of every month.

District level - 7th day of every month and

State level - 10th day of the month.

Making of the Communication strategy

(i) Orienting the Participants: Through interactive session, the complexity and enormity of the challenge is changing human behaviour and shortcomings in the present approach should be attempted.

(ii) Identification of barriers and opportunities

- Barriers and opportunities in 'building and using toilets for each category of audience are to be identified by groups formed for every district.
- Thereafter, the district level groups should identify the Communication objectives (SMART) for the year and corresponding outcome indicators.
- Subsequently, the groups pulled in their collective wisdom and experience to determine the messages and the medium through which these messages will be disseminated. Finally, the Communication activities are to be identified and budgets

are to be arrived at for implementing these activities.

The factors that either hinder the process of 'toilet construction and use' at the household level are given below:

Audience	Barriers
Primary Family: Children, Women & Men	Lack of priority: <ul style="list-style-type: none"> • Opting for a toilet is not a priority. • There is no 'social resistance' for open defecation Existence of a wide range of 'social obstacles'
	Dependence on subsidies: <ul style="list-style-type: none"> • The idea of "Government support" for toilet construction is deeply entrenched. • Lack of knowledge on functionality of toilets. • Doubts about functioning of leach pit and lack of clarity on maintenance.
	Lack of trust: <ul style="list-style-type: none"> • The functionaries involved in delivery of household toilets have lost trust of the community. The facilitators of the sanitation programmes worked with the limited purpose of 'toilet construction'; conceptually they did not have a defined role after the 'construction' process is completed.

<p>Secondary Village Panchayat President, VWSC, BRCs, DPMUs, SHGs, AWW, Teachers</p>	<ul style="list-style-type: none"> • Grassroots Institutions are new: • Barriers in functioning of BRCs/Sanitation Workers: Non payment of fees to the BRCs. Also, the BRCs do not have a defined “Job description”. The Sanitation Workers are not paid incentives/travel allowances on a regular basis • Lack of knowledge on sanitary toilets:
<p>Tertiary District Collector, PRI leaders, MLA, MP, Head of Community, Religious leaders</p>	<ul style="list-style-type: none"> • Priority for sanitation is missing • Media reflects only poor performances. Negative media stories on sanitation are very frequent.

Messages and Medium suggested

Messages for targeting the primary audiences.

- (i) Raising the issue of dignity and security of women, particularly adolescent women.
- (ii) Access to protected water and sanitation most certainly improves the quality of life.

It has a positive impact on health of both children and adults, improves nutritional status and subsequently adds to the potential for increasing livelihood security.

Secondary level audience

- Need to make them understand the implementation strategy through print and audio visual form
- Films on best practices to inform and induce conviction.
- Printed materials on toilet design

Territory level

- Identifying programme ambassadors
- Influencing political leaders
- Publication of documents on ‘best practices’
- Briefing major media houses on programme activities.
- Engaging District Collectors more comprehensively so as to accord priority for sanitation.



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