

A Review of Understanding Sustainable Sanitation

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Abstract: Sustainable sanitation has got a very significant role in day-to-day life in the present day scenario, especially for women and girls. Good dignity practices for gross domestic products are an order of the day. What is Sustainable sanitation and its components focused on this paper? What are the problems faced by women and girls like snake, scorpion and insects bites during the open defecation in the agricultural fields or bank of canals and roadsides were emphases? Multi-dimensional benefits like economic, health, education, increase school attendance and retention and tourism development. Every \$1 spent on water and sanitation will generate a \$4.3 return in the form of reduced health care costs. To making open defecation free- society for health, dignity and well-being of the people and freedom from violence.

Keywords: Sustainable sanitation, diseases, dignity, well-being.

1. INTRODUCTION:

Health is now higher on the international agenda than ever before, and concern for the health of poor people is becoming a central issue in development. Long over before 1947 the statement of Mahatma Gandhi "**Sanitation is more essential than independence**" that is backed by the Prime Minister of India in 2014 by reiterating "**Toilet first-Temple next**" indicates the pressing need towards the improvement of sanitation standard in India. The term sanitation defines "sanitation as the provision of facilities and services for the safe disposal of human urine and faeces".

Open defecation (OD) is the single biggest indignity for billions of people worldwide. It also endangers the safety, expected growth, health, and well-being of all communities within which it continues to be practised. Eliminate this forever, all people must be able to have access to convenient, affordable, and comfortable sanitation and hygiene inside and outside the home, from childhood to old age, through good, including permanent or temporary impairments, these are all called sustainable sanitation.

2. WHAT IS SUSTAINABLE/ SUSTAINABILITY:

Sustainability refers to whole communities and their achievement and maintenance of open defecation free (ODF) status. Definitions for assessing ODF communities vary, but often include the following:

1. Eradication of open defecation in the community, 2. Hygienic household toilets provide the safe containment of faeces, offer privacy, with a lid on the defecation hole and a roof to protect, 3. Use of sanitation by all household members and all in the community and 4. A handwashing facility nearby with water, soap or ash, and evidence of regular use.

Some countries include additional elements or a second stage (sometimes defined as ODF Plus), which may include:

1. Hand washing, 2. Safe and protected drinking water storage and handling, 3. Food hygiene (elevated dish drying racks, covering of food), 4. Greywater disposal, 5. Solid waste management, and 6. Provision of institutional latrines in schools markets and for passers-by, Cavill(2015).

Three dimensions of sustainability have been identified, enabling conditions: referring to institutions and processes, and including political priority and campaigns; programme quality, inclusiveness and intensity; and post-ODF follow-up. Physical and technical sustainability: referring to physical conditions, structures, the sanitation ladder, the market and sanitation services. Social, behavioural sustainability: referring to sustainable change in social and behavioural norms, motivations and preferences for OD, and dynamics within communities and cultures, including equity and inclusion, and meeting the varied needs of people, Bongartz (2016). Sustainability and equity/equal access and use are two sides of the same coin: Ensuring that WASH services, their use, and maintenance are guaranteed for generations to come impossible without recognition of the diversity and needs of the clientele who will use and maintain these services. Human beings change across their life course. Services that ignore this will not be sustainable Archana(2016). The taboos and perceptions may vary by geography, from menstruating blood spoiling pickles in South Asia, to curdling milk in West Africa. However, the fact remains that decades of taps and toilets have neglected this most basic biological phenomenon affecting half of humanity. This is a violation of women's rights on multiple fronts, Winkler and Roaf, (2015). As a girl progresses from puberty to womanhood, reproductive tract infections potentially triggered by poor Menstrual Hygiene Management (MHM) could affect her reproductive health. Women and girls must be able to demand with confidence what services and support they need to manage menstruation, post-partum bleeding, fibroids, or another

abnormal uterine bleeding at home, school, and work. This includes but is not limited to safe spaces for changing, washing, use of the right materials in the right quantity, safe disposal, pain medication, and counselling WSSCC, (2013).

3. REVIEW OF LITERATURE:

Studies of sustainable sanitation and health practices among different rural, semi-urban and urban people are very few.

According to one estimate, roughly 1.5 billion people in urban areas use toilets that are connected to a sewerage network that releases sewage without treatment of this total, 69% are located in Asia, 12% in Europe, 11% in South America, 5% in Central and North America, and 4% in Africa. In particular, many cities in low- and middle-income countries face pressures to expand sewerage but are not able to provide adequate collection and treatment systems. For example, in India, only one-third of urban households are connected to a sewerage network, and of this more than two-thirds of wastewater generated is released untreated, Kim(2016). The urban poor, and particularly children, are disproportionately exposed to the impacts of poor sanitation, including high disease burdens, which reinforces existing processes of inequitable urban development, Rheingans(2012). The connections between pathogens found in human excreta and diseases such as chronic diarrhoea and infection with intestinal parasites like helminths are well known. Diarrhoea is one of the leading causes of death among children globally, with 842,000 deaths per year directly associated with lack of adequate water supply, sanitation and hygiene practices, WHO(2014). Another study by Lal (2006) try to establish tribal health problems to factors such as morbidity and mortality, wide-spread poverty, illiteracy, malnutrition hostile environment, insanitation living conditions, ignorance of causes of diseases, lack of health services etc., among the tribal population were also reasons. A study on economic analysis of healthcare services described that fever had affected 150 tribals in the low-income group, 68 tribals in the middle-income group and 12 tribals in the high-income group. Malaria, a water-borne disease, had affected 60 tribals in the low-income group, 45 tribals in the middle-income group and 12 tribals in the high-income group. Typhoid, a contagious disease, had hit 40 tribals in the low-income group, 40 tribals in the middle-income group and 15 tribals in the high-income group. Diarrhoea, in the low-income group, 50 tribals were affected by diarrhoea, in the middle-income group 34 and high-income group eight tribals were affected. Anaemia, 20 tribals from low income and 15 tribals from the middle-income group were affected by anaemia. None from the high-income group were affected by anaemia. Jaundice, similarly, the disease, jaundice had affected 15 tribals from low-income, ten tribals from the middle-income group and four from high-income group tribals were affected by jaundice, Lal(2011).

Safe water and sanitation are the two basic components of hygiene, which have a strong cultural determination and a key influence on people's health, perhaps comparable only to food, Lal (2010). Lal(2006), study finds out that the subjects are classified according to income group in terms of annual expenditure on food, it was found that out 150 subjects belonging to low-income groups, 120 subjects (80 per cent) have spent less than Rs. 10,000. Twenty-four subjects (16 per cent) has spent between Rs.10, 000 to 20,000, only six subjects (4 per cent) has spent between Rs. 20,000 to 30,000. None had affordability to spent Rs—more than 30,000 annually on food in the low-income group. Among the middle-income group, the majority of subjects 20 (66 per cent) had spent rupees less than 10,000. In the high-income group, 15 subjects (75 per cent) had spent between Rs. 10,000 to 20,000. As hands are an essential mode of transmission of infectious disease among school-aged children, simple hand washing with soap helps to protect children from the two common global paediatric killers (diarrhoea and lower respiratory infection), hand hygiene significantly reduce illness-related absences in elementary school students by 26%. Critical times for handwashing include after using the toilet, after cleaning a child, and before handling food, Lal(2016). Awareness of health aspects of sanitation behaviour is crucial because it determines the degree of sustainability of the intervention in sanitation. Perception strongly influences one's handwashing beliefs and practices, Lal(2016). The study provides information on awareness of personal hygiene practice of school-going children. Cent per cent of children is doing a bath regularly. 43 % of children do head bath between 2-4 days, 36% of children do between 4-6 days, and the remaining 21% of children do daily. 91% of children brush their teeth daily morning and remaining nine per cent brush their teeth morning and night. Majority students replied that they do not have any bad smell from their mouth, Lal(2016). The study reveals that a hundred per cent of students practising hand wash. The material used for hand wash is a soap for 48% and only water 52%- the hundred per cent of students practising hand wash before eating. A question was asked as to hand wash after toilet. 66% of students replied that yes, and the remaining 34% said no. About the maintenance of clothes neat and clean, 85% of students replied yes, and 15% said no, Lal(2016).

More than 85% of the rural villages are not connected with proper drainage facilities; more than 82% of the houses do not have toilet facilities. Toilets are not available for close to 50% of the semi-urban population. In many areas, open defecation is still prevalent, and it is one of the main causes of many diseases. Every year more than five million people die from illness to excreta disposal and improper hygiene practices. Kavitha(2013). Contamination of water with human faeces causes the transmission of diseases such as typhoid. Poor health resulting from poor sanitation has a significant effect on economies, with money that could be used to purchase food or education spent on medicines.

National economies also feel the strain of providing medical treatment; people become too ill to work, their livelihoods being destroyed by preventable disease. In 2004, the World Health Organization estimated that about 1.8 million people die every year from diarrhoeal diseases (including cholera). About 90% of these deaths are of children under five years of age, Kavitha(2013). Many adolescent girls miss one in four weeks of school because of a lack of facilities to deal with menstrual hygiene. Menstrual hygiene is a problem for many adolescent girls and women, who lack the privacy to properly wash and dry menstrual rags. In some rural areas, superstition and tradition mean that rags are dried in the dark, away from male view. About two in five rural women commonly experience vaginal infections caused by damp Lal(2013). Kavitha's (2013) study shows that 77 per cent of the respondents have health problems, in the 27 percent of the respondents facing anemia, 9 percent of the pregnancy women's are take delivery in the government hospital, and 67 percent of the respondents don't have drainage facility, and 99 percent drain system don't connected to the house, 89 percent of the respondents have debts, in the 53 percent of the respondents had getting from the money lenders, and 42 per cent of the respondents has take bath made with gunny bags, 100 percent of the respondents don't have toilet facility, 99 per cent go to the toilet at the open defecation, 60 per cent of the respondents has wash the hands when coming outside, 89 per cent of the respondents has getting the drainage water/lousy smell from the surroundings, 85 per cent of the respondents have facing urine burring problems, and 86 per cent of the respondents have uterus related problems, in the 26 per cent facing from white discharge & irregular periods, 64 per cent of the respondents spending pattern on medical treatment. Sanitation: (Open defecation): more than 87 per cent of banjaras are openly defecating at roadsides, open agricultural fields, nearby canal and bank of canal and rivers Lal(2015).

A study was conducted by Lal(2015), examined that Water-borne communicable diseases like gastrointestinal disorders including acute diarrhoea are responsible for higher morbidity and mortality due to poor sanitation, unhygienic conditions and lack of safe drinking water in the banjara's thandas. The acute diarrheal problem was basically due to the poor environmental hygiene, lack of safe drinking water, improper disposal of human excreta which was further aggravated by low literacy, indiscriminate defecation in the open field, barefoot walking and lack of health awareness and hygiene, low socio-economic status coupled with blind cultural belief, lack of access to medical facilities leading to serious public health problem encouraging the faecal-oral transmission of enteric pathogens in most of the thandas in Andhra Pradesh. In India, the service sector is growing very fast. It now accounts for 55 per cent of the GDP. India has made rapid progress concerning biotechnology and IT related services. It has now become famous from healthcare too. Medical tourism is a concept that is attractive to visitors who lone comprising well-being and lifestyle healthcare services with a strong desire to travel overseas. With the cost of medical care being about ten times cheaper in India, health tourism is also emerging as an essential segment Naik(2013). One key barrier to sustainability is the way sanitation has often been overlooked in favour of other types of development by urban decision-makers, national governments and users themselves. For instance, water and sanitation together comprise just 6.1% of total development aid commitments, putting them behind health, education, transport, energy, government and civil society, and agriculture sectors, WHO(2014a). People may not know how their waste is treated, dispose of inappropriate types of waste that may damage treatment systems or the environment, or they may assume that wastewater is adequately treated before release into the environment even when it is not. Users may also value the perceived status of a particular system, such as a flush toilet, over interest in the sustainability of the systems, Moe(2006). In India, Sri Lanka, Thailand, and Malaysia, drinking patterns illustrate how the per capita consumption figures of a country do not necessarily give the true picture of consumption patterns of Asian countries. Parallel with the international and more expensive alcoholic beverages, there exist the local, cheap, potent brews, both legal and illicit, which are not computed into the national statistics Naik(2013a).

4. RESULTS ANDN DISCUSSION:

4.1. PROBLEMS OF LACK OF SUSTAINABLE SANITATION:

Sustainable sanitation systems take into consideration all aspects of sustainability, with regards to health, environmental resources, economic viability, and socio-cultural acceptance as well as technical and institutional appropriateness. To provide sustainable sanitation, one should address the critical issues of women, girls, and old-age people.

4.2. PROBLEMS FOR WOMEN:

Nearly 200 million women in India are obliged to wait throughout daylight hours for open defecation on road-footpath or banks of the canal. Girls drop out of schools without toilets, on reaching puberty. Vast numbers of people are still expected to handle other people's shit. Adolescent girls have nowhere privacy to deal with menstrual hygiene. About 2.2 million children die every year from diarrhoeal-related diseases. The majority of these diseases are contracted through poor quality drinking water, inappropriate hygienic behaviour or inadequate environmental sanitary facilities. This rate is equivalent to one child dying every 15 seconds, and these deaths represent approximately 15 per cent of all deaths of children under the age of five in India and developing countries.

4.3. ECONOMIC LOSS:

The study estimates that the total annual economic impact of inadequate sanitation in India amounted to a loss of 2.4 trillion (the US \$53.8 billion) in 2006. This implies a per capita annual loss of Rs.2,180 (\$48). In purchasing power parity (PPP) terms, the adverse economic impact of inadequate sanitation in India was \$161 billion, or \$144 (Rs.6540) per person.

4.4. OTHER PROBLEMS FACED BY WOMEN:

How women are facing the various problems like a snake, scorpion and insects bite during the open defecation in the agricultural fields or bank of canals and roadsides. Toilets facility maintains human dignity and avoided physical abuses. People can avoid multi-dimensional impacts of poor sanitation which includes health and economic burden and several other social challenges for the urban as well as rural population, especially for women and girls who face shame, guilt and harassment while opting for open defecation and save US \$54 billion money can be used for other development and welfare programmes.

4.5. BENEFITS OF SUSTAINABLE SANITATION:

Indian Scenario: According to UNICEF, 2014 data India is top in the world OD is concerned, nearly 597 million people are still practising OD and generating 65 thousand tones wastage. More than 74 per cent of the rural villages are not connected with proper drainage facilities. Toilets are not available for close to 50 per cent of the semi-urban population. In many areas, open defecation is still prevalent, and it is one of the main causes of many diseases.

In **Telangana State**, only 33 per cent of houses have toilets. Contamination of water with human faeces causes the transmission of diseases such as typhoid and diarrhoea. Children 1000 children died per day from diarrhoeal diseases due to poor sanitation in 2013. These deaths are preventable.

Water is a Foundation: Water is a foundation of life and livelihoods and is key to sustainable development. Successful water management will serve as a foundation for the achievement of many of the 17 Sustainable Development Goals (SDGs), as well as for SDG6- which is to 'Ensure availability and sustainable management of water and sanitation for all Lal(2020). All peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs.

4.6. HEALTH, DIGNITY AND WELL-BEING THROUGH SUSTAINABLE SANITATION:

Education/Girls: Clean and safe toilets help keep more girls in school and increase attendance rates. Far too many girls miss out on education just because of the lack of a clean and safe toilet will be controlled.

Investment: Every \$1 spent on water and sanitation generates a \$4.3 return in the form of reduced health care costs.

GDP for GDP: Good Dignity Practices for Gross Domestic Products is a core theme for our research project of Kakatiya to promote personal hygiene and sanitary facilities in general and women in particular. We would like to create certain awareness and prepare village volunteers to sensitize rural and tribal people by way of skit play, pamphlets and door-to-door campaign, how women and girls are frequently facing the problem of physical abuses at the time of open defecation.

Economic and Health Benefits: Sanitation is vital for human health; it controls nearly 10 million child deaths globally per year. Sanitation and hygienic interventions are a must to reduce child mortality. Access to safe toilets alone can reduce child diarrhoeal deaths over 30 per cent, Control of pneumonia mortality. Sanitation can save approx US\$ 54 billion annually, along with reduces direct and indirect health costs (\$38.5 billion), and saving time, boosts eco-tourism revenues. Investment in improved drinking water supply and protecting water resources is the need of the hour for improving sanitation conditions.

Tourism Development: Tourism is an important industry contributing to the growth of a country's economy. The tourism industry is closely linked to other industries factors such as the promotion of tourism, medical, industrial growth, globalization and liberalization of trade have given a burst to the health industry and made it competitive. Tourism is an activity with firm backwards and forwards linkages Naik(2013). The travellers spend money to enjoy a variety of goods, services and experiences. The income and employment generating capacity of this sector are immense. India's travel and tourism market were valued at \$ 42 billion, and this is growing rapidly, India emerged as the fifth most preferred destination by the world's travellers in a survey conducted across 134 countries Naik(2013).

5. MAKING OPEN DEFECATION FREE- SOCIETY:

Improved sanitation generally involves physically closer facilities, less waiting time, safer disposal of excreta and maintains human dignity and avoided physical abuses. People can avoid multi-dimensional impacts of poor sanitation which includes losing approx US\$ 54 billion annually, along with health and economic burden open defecation and non-availability of toilets bring several other social challenges for the urban as well as rural population,

especially for women and girls who face shame, guilt and harassment while opting for open defecation and save \$53.8 billion (per capita annual loss of Rs.2,180) money can be used for other development and welfare programmes of individual and community.

The Government role to Improve Sanitation facilities: The Ministry of Water and Sanitation (GoI) is providing sanitary facilities to all rural and tribal people in the country with priority basis to ensure quality and protected water services for their economic and health benefits. As per Swachh Bharat Mission-Rural, 84.19 per cent have completed providing improved sanitation facilities in the year 2018.

Critical Review: People in India spent their hard-earned money on many unproductive things and for traditions and rituals. In India household expenditure on alcohol varies between 3-45 per cent of their income. Alcohol misuse is one of the main killers of young men in India today. But its real impact is on the social and family dynamics that underlie its communities. Domestic violence and exacerbation of poverty have made alcohol misuse the most critical problem for women in India. Most of the families have on roads because of alcohol drunken their husbands, and now they are in debt traps. In many poor and middle-class families, development taking place in one hand, their sons are becoming workers in moneylender's houses in another hand Naik(2013a). Indians spent on various ceremonies than sanitation.

6. CONCLUSIONS:

Raise awareness of the potential for public health problems arising from alcohol consumption and the need to develop integrated strategies at the national level to address the prevention and treatment of substance abuse, including alcohol Naik(2013a). As they believe in supernatural power, they invoke their gods and propitiate their deities for providing ample protection to their cattle and land. Thus this festival reflects the traditional cultural milieu of Banjaras in Andhra Pradesh who have a communitarian way of life Lal(2003). World Toilet Day is the day for action. It is the day to raise awareness about all the people on this planet who still do not have access to a toilet, and the urgent need to end the sanitation crisis. Sustainable sanitation supports better nutrition and improved health, especially for women and children.

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