

MULTIDISCIPLINARY
APPROACHES
TO

HUMAN
RIGHTS

National and International Dimensions

Edited by

BADRUDDIN

Foreword by

AGNELO V. AFONSO



A MITTAL PUBLICATION

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RIGHT TO SANITATION

Myth Or Reality? A Case Study Of Goa

FLORY PEREIRA

Introduction

'Sanitation' – A Basic Human Right

World Health Organization (WHO) defines 'sanitation' as the provision of facilities and services for the safe disposal of human urine and faeces.¹ However, the intangible elements of sanitation include open-defecation, urination, a spit free environment, air pollution, water pollution; municipal, industrial and hospital waste management, and the new and emerging threat of e-waste management. Wikipedia defines sanitation as 'the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage or wastewater'.² The impact of lack of sanitation on health, education and economic growth is profound. Therefore, the urgency for action in the sanitation sector is obvious, considering that 2.6 billion people worldwide remain without access to any kind of improved sanitation, and that 2.2 million annual deaths (mostly children under the age of five) are caused mainly by sanitation-related diseases and poor hygienic conditions.³ Keeping in mind the gravity of the situation, access to sanitation has been recognized by the UN as a human right, a basic service required to live a normal life. On July

2010, the UN General Assembly adopted a groundbreaking resolution officially recognizing sanitation as a human right. Since the lack of sanitation hurts and kills, it obstructs the right to life and health. Besides, lack of sanitation also thwarts the right to dignity. Therefore, denying access to sanitation is denying basic human rights.⁴ Prince Willem Alexander of the Netherlands, Chair of the UN Secretary General Advisory Board on Water and Sanitation stated that "Clean water and sanitation are not only about hygiene and disease, they're about dignity too. Everyone, and that means ALL the people in the world, have the right to a healthy life and a life with dignity. In other words: everyone has the right to sanitation".

Contemporary Scenario in Goa

Goa, a tiny state on the West coast of India with an area of 3,702 sq kms and a population of 14.57 lakh as per 2012 census holds a position in UNESCO's world heritage list, as a safe, serene and pleasant tourist destination. However, the totally disproportionate growth of migrants and the floating tourist population, as compared to the infrastructure development required to receive these tourists, is slowly driving it to be a tourist hell rather than heaven.⁵ Dealing with the burgeoning problems of sanitation has become a serious issue and scientific waste management is the immediate need of the hour. If Goa wants to survive on tourism, then a special 'sanitation' strategy is a must. In the present study an attempt has been made to analyse Municipal Solid Waste (MSW) Management of Panaji, the capital city of Goa, as a working model, since it was physically not possible to conduct an in-depth study for the whole State; and further compilation of data from various sources including information from books, journals, magazines and websites has been carried out, with an aim to determine whether the basic human right to sanitation exists in Goa or is just a pipe dream !

Objectives of the Study

With the growing importance given to sanitation and the thrust given by the government to promote 'Swacha Bharat', the objectives of this paper are:

- (1) To examine the key issues related to sanitation in Goa.
- (2) To investigate the health hazards associated with unsanitary conditions.
- (3) To provide suggestions and guidelines for the success of the programme in Goa.

Sample Survey

A survey of MSW dumping sites from Panaji City, the capital of Goa, was carried out according to random sampling method, whereas other aspects of sanitation were studied based on secondary data.

Scope of the Study

This study is restricted to a practical assessment of MSW in Panaji City only and secondary data analysis for the rest of Goa. This study does not include primary data of hazardous unsanitary practices. However, a compilation of secondary data has been attempted in order to assist the civil society and the decision-makers to assess prevailing sanitation systems, so as to come out with sustainable technologies.

Methodology

The study was carried out in two parts. In the first phase, a survey of MSW generated in Panaji was carried out within an area of 8.2 sq. kms. Sampling for the study was carried out over a period of two years, during June to September (Monsoon) and March to May (Summer). Grab samples of MSW were collected from twelve different locations for physical characterization, based on quartering method. For the temporary storage and transport of each sample to the laboratory, water-proof sealed bags were used⁶. The time interval between collection and analysis was one to four hours. The representative samples were sorted out into separate fractions; weighted average was calculated and represented as percent dry or wet weight. The second phase involved secondary data collection on sanitation from various sources including information from newspapers, books, journals, magazines and websites as supplementary material.

Observations

Goa has twelve municipal councils and one corporation (Corporation of The City of Panaji). The total amount of Municipal Solid Waste (MSW) is approximately 400 tonnes a day. There are five principal cities in Goa viz Mormugao, Madgaon, Panaji, Mapusa and Ponda. *The Goan* conducted a reality check of all these major cities and reported that the conditions were not only extremely poor but posed a serious threat to the environment and ecology of the State⁷. The performance of Goa in terms of Solid Waste Management was found to be miserable owing to the State Governments lack of any concrete waste management policy.

Since the prerequisite for effective waste management is the

availability of reliable information about the quantity and the composition of MSW, a pilot study of Panaji was undertaken by us. This exercise would give an idea about the physical, chemical, and thermal properties of the waste as well as in estimating its material recovery potential and its suitability for disposal. It was observed that the MSW was highly heterogeneous and mainly consisted of organic household waste, plastics, straw, paper cartons and construction and demolition waste

Table I: Composition of Municipal Solid waste of Panaji City

<i>Waste composition</i>	<i>%</i>
Bio-degradable	58.34
Recyclable	20.22
Non Bio-degradable	21.44

Table II: Composition of Non Bio-degradable waste

<i>Waste Composition</i>	<i>%</i>
Construction and demolition	13.39
Drain silt	5.01
Street sweeping	3.04

Table III: Composition of Bio-degradable waste

<i>Waste Composition</i>	<i>Wet weight (%)</i>
Fruit peels	10
Rice (cooked)	5
Vegetable trimmings	30
Potatopeels	6
Onion peels	10
Straw	2
Paper	5
Coconut husk	5
Leaves	7
Oil cake	2
Meat waste	5
Fish waste	10
Egg shells	3

It was seen that the waste had 50-85 per cent compostable matter, with moisture content as high as 50-60 per cent. The relative contribution of recyclables i.e. paper, metals and plastics appeared to be low because of the salvaging of these materials by the migrant rag pickers. These rag pickers reduce the amount of waste which ends up in landfills, thus providing a valuable service. However, more often than not they are discriminated against, regularly harassed and possess few economic and social rights. They work a minimum of ten to twelve hours every day and are paid a meager salary of about 3000-3500 rupees per month. It is considered to be the responsibility of the rag pickers to pick up trash by hand, separate them manually without gloves, mask or proper cleaning facilities. Batteries containing lead and cadmium, thermometers with mercury, broken glasses, used medicine bottles, syringes and vegetable peels are often thrown in the same bins without segregation. Such unsanitary work conditions could lead to illnesses, injuries, and serious infections⁸.

Table 14.4 gives an outline of MSW management scenario in the major towns of Goa. Presently, large amounts of un-segregated municipal solid wastes have been stacked in the dump yards of the plants at Marmugao and Mapusa emitting a strong stench. Most of the garbage from Mapusa which is presently dumped at the Assagao Plateau is handled by burning, adding to air pollution. Most people dump the garbage wrapped in plastics in bins, on the roadside or in water bodies.

With regards to biomedical wastes in Goa, 10000 kgs of waste is generated per day and Goa has only one operational biomedical waste treatment plant for its 972 medical establishments. All hospital wastes get dumped into community bins instead of segregating. The non-committal attitude of the Health Department and clueless Panchayats and Municipalities thus adds to making Goa a potential epidemic bomb.

The latest emerging threat is from electronic wastes (e-wastes). With the spurt in the sales of electronic items, for every one new item put on the market, at least one becomes obsolete. Goa generates over 1000 tonnes of e-waste every year, of which around 400 tonnes comprise personal computers (not to mention the added load from the cyberage schemes for students), and the balance is refrigerators, washing machines, mobiles and other electronics. It is not only the quantity of e-wastes that is alarming, but the more than 1000 toxic ingredients contained in them. It has been estimated that 75 per

Table 14.4: Statistics of Councils on Garbage Management ⁹

	Mormugao	Madgaon	Panaji	Mapusa	Ponda
Approx Population	110,000	80,000	75,000	60,000	50,000
Metric tonnes/day of solid waste	35-40	40-45	25-35	25-30	10-15
Treatment plant capacity (Metric tons/day)	20	20	>52	non-operational OWC's (500kgs)	2 OWC's (500kgs)
Compost generated(Metric tonnes/day)	5-7	5-7	2-5	-	?
Untreated garbage (Metric tonnes/day)	20	20-25	10-15	Dumped at Assagao	?

cent of the electronic items are stored due to uncertainty of how to manage it. This electronic junk lies unattended in houses, offices, warehouses etc. and normally gets mixed with household wastes, which are finally disposed off at landfills. Very few people actually drop it off at special collection centres.

The centres shared off the wastes to be shipped to China for processing. The recycling of e-wastes has serious occupational and environmental implications. Workers are exposed to toxic compounds such as lead, cadmium, mercury, chromium, barium and poly chlorinated biphenyls from batteries, transformers and computers while dismantling. Dioxins and furans are known carcinogens produced during open burning of PVC's and wires to retrieve copper.

Goa strives to meet the target of providing 100 per cent sanitation to the entire state by 2014 end, however, the picture remains bleak. According to 2011 census 2,57,338 households have latrine facilities in Goa, of which only 46,640 households have connections for the underground sewerage system. Only 1,82,224 households have septic tanks. 10,479 households have other chambers and 14,177 households have pit latrines¹⁰. Goa is still sorely lacking in sanitation. As yet there is still no village which is completely open-defecation, urination and spit free. Migrants and local tourists are known to compound this problem. The migrants working in the organized and unorganized sectors in Goa are estimated at 3.3 lakhs as per census of 2001. It was 1.55 lakh in 1991 and has reached 2.22 lakh in 2011, whereas Goa's population is 14.57 lakhs (as per 2012 census) i.e. nearly 20 per cent of Goa's population is floating. On one hand, the State government turns a blind eye towards the welfare and security of these daily wage workers; and on the other hand, people suspect that migrants are responsible for the unsanitary practices all over the villages and especially in the fields. They are also involved in eve teasing and other anti-social activities, not to mention the increasing crime rate. Locals now do not feel safe in their own localities. Mushrooming of illegal temporary dwellings and sub-renting due to the greed of a few locals is one of the reasons. Ignorance about the hazards of lack of sanitation could be one factor responsible for aggravating the existing problems.

Hazards of Lack of Sanitation

Hazards of lack of sanitation can be physical, microbiological, biological or chemical. Either way it results in negative impacts on the environment, public health and local economics.

1. Unhygienic practices such as spitting, urinating and defecating in the open are not only hazardous to mankind, they also destroy environment. Phlegm, especially of a disease-carrier, can spread air-borne respiratory diseases like tuberculosis (TB), pneumonia and influenza and even lead to a TB epidemic, if unchecked. Open defecation is the leading cause of diarrhea and intestinal worm infections, also typhoid, cholera, hepatitis, polio, trachoma and other diseases.
2. Toxic materials especially plastics and rubber (when burned or buried) pose a serious threat to public health and the environment. Deliberate or unintentional open burning of waste causes air pollution, and production of toxic dioxins and furans which are cancer causing.
3. Dumped wastes get scattered by animals and natural forces like wind and rain and block streets and other access ways.
4. Uncollected wastes especially plastics often end up in drains, causing blockages. This in turn results in flooding and unsanitary conditions.
5. Mosquitoes breed in blocked drains and spread diseases such as Malaria and Dengue fever.
6. Plastic bags are an aesthetic nuisance besides causing the death of grazing animals that eat them.
7. Waste dumps attract flies, insects, rodents, stray cattle, dogs, birds and other animals. These are very effective vectors that spread diseases including cholera, typhoid, hepatitis, polio, cryptosporidiosis and ascariasis. Diarrhea—a disease directly related to poor sanitation – kills one child every 20 seconds, i.e. more than 4,000 children every day. This amounts to more deaths than AIDS, malaria and measles combined.
8. Hazardous chemicals from e-waste can cause central and peripheral nervous disorders, and also affect blood, kidneys and reproductive organs. Chemical wastes may be fatal if ingested, inhaled or touched.
9. Rats find shelter and food in waste dumps, multiply and can damage electrical cables and other material, besides spreading diseases like plague.

10. Decaying organic matter gives out gases like methane and hydrogen sulphide, which pollutes air and also causes acid rain.
11. Aerosols and dust can spread fungi and pathogens from uncontrolled and decomposing wastes.
12. Leachate flowing from the dump sites and landfills cause serious pollution of the ground water.
13. Rag pickers who build their settlements in the vicinity of garbage dumps and scavenge for recyclable materials are at a significant health risk, as they do not have protective clothing or access to washing facilities. Dangerous items such as broken glass, razor blades, hypodermic needles and other healthcare wastes, aerosol cans and potentially explosive containers and chemicals from industries may pose a risk of injury or poisoning to the rag pickers.
14. Needles shield bacteria and viruses from chemical disinfectants and harsh external environments and if pricked by the needle, it would allow easy access for the viruses into the blood stream spreading diseases like hepatitis and AIDS.
15. Large quantities of waste, if piled unscientifically, can slip and collapse, burying and killing people.
16. And most of all, waste that is disposed off in an unsatisfactory manner is odorous, unhygienic and not aesthetic and a public nuisance.

Suggestions for recognizing sanitation as a Human Right

1. Demonstrate that sanitation is a legal entitlement, not charity.
2. Demand accountability from those responsible for ensuring sanitation.
3. Political will and Government commitment for proper utilization of finances earmarked for sanitation.
4. Strong enforcement of environmental regulations etc. to prevent local authorities from flouting environment regulations.
5. Map out guidelines for the development of reforms, prioritize issues, and monitor performances.
6. Information sharing, social awareness, activism and genuine

- participation of public in decision-making.
7. Focus on youth and education.
 8. Define minimum requirements for sanitation. Spread awareness through media, advertising and posters.
 9. Impose fines if necessary.
 10. Change the mind set of people. Encourage public to act responsibly.
 11. Focus on discriminated, neglected and marginalized groups living in informal settlements.
 12. Make sanitation a part of our culture.
 13. Look beyond short-term convenience.

Conclusion

The right to clean air, pure water, and preservation of the natural, scenic, and aesthetic value of the environment has become a myth in Goa. Goa's sanitation problem is not a simple one. We do not have any proper infrastructure in place. The issue is aggravated with the Governments lack of seriousness and the people's irresponsible attitude. We need to work out the simplest and most cost effective sanitation strategy that would work for us. This will not only help the economy but will also give a much needed boost to the Tourism Industry. Robert Redford appropriately stated "We've poisoned the air, the water, and the land. In our passion to control nature, things have gone out of control. Progress from now on has to mean something different. We're running out of resources and we are running out of time". It is high time we focus our attention towards these issues, so that we can truly enjoy this basic human right to sanitation.

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