

Sanitation is the key to healthy cities - a profile of Sulabh International

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Dr. Bindeshwar Pathak is the founder of the Sulabh sanitation movement. Sulabh has links with many agencies for research and project work including WHO, UNICEF, UNDP, the European Commission and various bilateral agencies including DfID (UK) - formerly the ODA -, BORDA, Sida (Sweden), DANIDA (Denmark) and KfW (Germany); the Netherlands government also funds low-cost sanitation projects in many states in India. Sulabh also works in neighbouring countries such as Nepal, Bhutan, China, Pakistan and Bangladesh, and has collaborated on many programmes with the UN Centre for Human Settlements (Nairobi) and Loughborough University's Water Engineering and Development Centre (WEDC). It works in close collaboration with many national agencies within India such as NBO, CBRI, HUDCO, the ministries of Welfare, Urban Development and Rural Development, the government of India, and the All-India Institute of Hygiene and Public Health in Calcutta. Sulabh's work was recognized as a global best practice at the Habitat II conference in Istanbul, in June 1996.

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SUMMARY: *Sulabh International is an Indian NGO which developed a cheap and effective sanitary toilet - a two-pit, pourflush, water-seal system - that does not need sewers or expensive treatment plants. Sulabh toilets are now used by more than a million households in India and in over 3,000 community toilets. This profile of Sulabh International by its founder describes how this sanitation programme first began and how it has spread and diversified. The profile also describes Sulabh's other work, including training and education for "scavengers" who previously emptied latrines, the model village and rural sanitation programmes, research and the integrated health care model.*

I. INTRODUCTION

OF THE MANY things that can make for healthy cities, clean living conditions are very important. Sanitation is a basic condition for development. It is not only the problem of keeping clean, it is also an economic and social problem of raising production and promoting a good life. A lack of proper sanitation contributes to the death of millions of children below the age of five every year; and about 50 diseases are associated with poor sanitation. Sanitation related diseases are

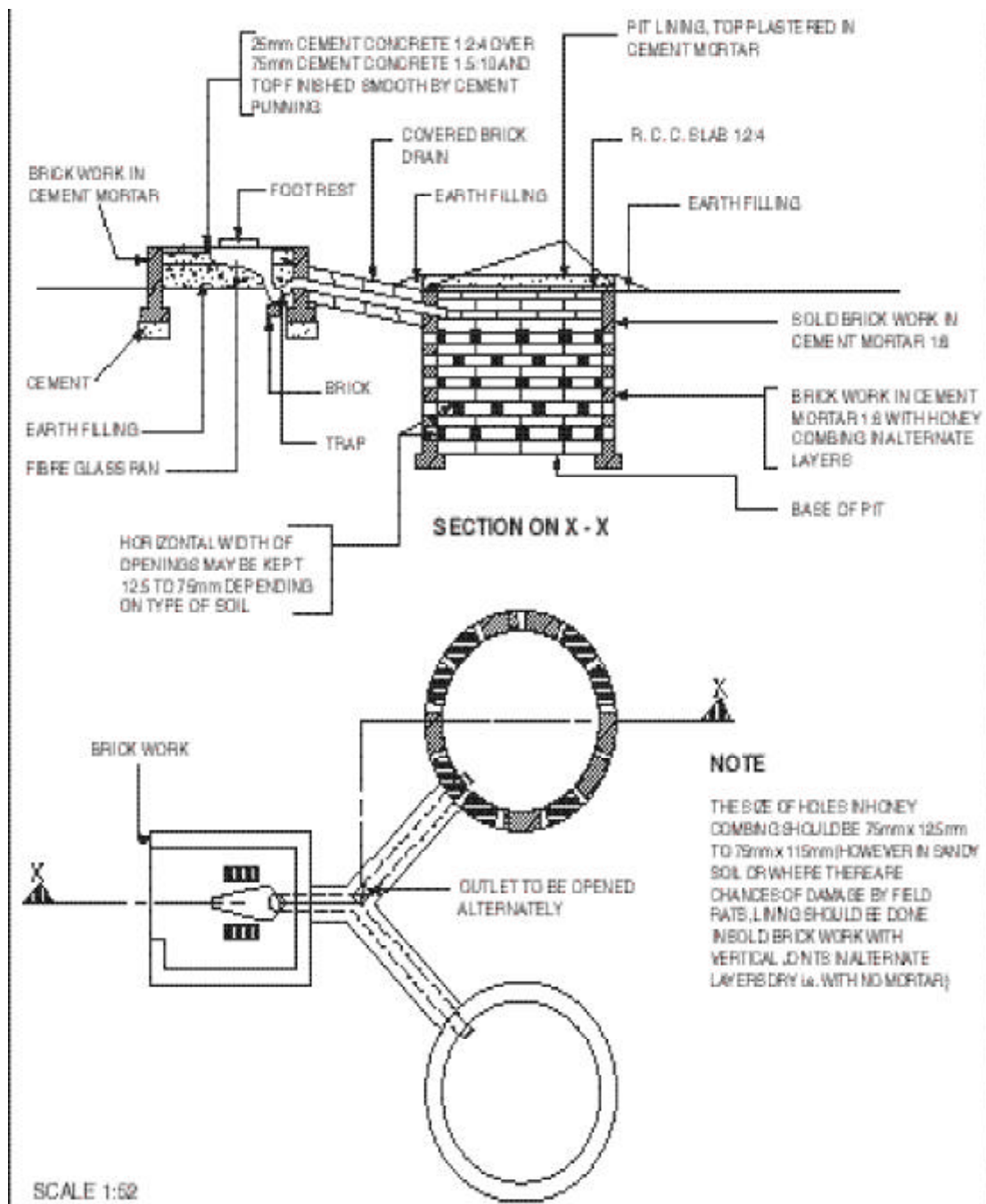
among the major causes of death in India and in most other low-income countries.

A concern for sanitation involves not only the waste disposal systems, water supply and sewerage networks but also our rich ecological heritage. On all these counts, India still has a long way to go. Our cities and towns are not clean: the garbage heaps, the large number of people defaecating in the open or urinating up the walls (even in the so-called "posh" areas), degraded land and destroyed forests - all indicate ill-health for the people living on the fringe.

Modern civilization has increased rather than lessened the problem of scavenging⁽¹⁾ and open defaecation. With the rapid expansion in urban populations, the scope for open defaecation has been reduced and, today, large sections of this population, including about half of Delhi's, live in "slums". Comparable problems exist in many other megacities.

According to India's 1991 census, only 10 per cent of rural populations have access to sanitary facilities. In a UNDP assisted survey of 210 towns in 11 states and three union territories of India, it was found that only 27 per cent of people in 12.8 million households had sanitary facilities and one-third of all households (or 10.4 million households) had no toilet facilities at all.

Figure 1: One Design for the Sulabh Two-pit Pourflush Water-seal Toilet System



For technical specifications for these and for other designs, write to Sulabh International at the address given at the end of the NGO Profile.

Even today, there are around half a million scavengers in India who physically collect and carry human excreta, working on 6 million service latrines. Scavengers are hated, even by those whose excreta they carry in baskets on their heads, generation after generation, without protest and with total resignation.

The Sulabh sanitation movement arose out of a concern for sanitation, ecology and scavengers. Sulabh is an extension of the movement which Gandhiji launched to liberate scavengers from having to carry excreta in baskets on their heads. Since then, much has been done. I developed a low-cost, affordable, culturally appropriate technology that did not need emptying by scavengers - the Sulabh two-pit pourflush water-seal toilet system (see Figure 1). This system has been installed in more than 1 million households and is used in over 3,000 community toilets. It is now being used by about 10 million people everyday. The World Bank, UNESCO and other agencies and institutions in India and abroad have approved Sulabh technology for adoption in South Asian countries. Sulabh toilets function independently of the city sewerage system and, to that extent, the rivers are not polluted. Nor is there a need to build treatment plants or expand the sewerage network, both of which are very expensive.

A scenario quite similar to the one described above for India existed in the West in the eighteenth and nineteenth centuries in the wake of the industrial revolution when garbage used to be thrown out of windows onto the streets. Contaminated drinking water was collected in dirty vessels from common taps. At workplaces, men, women and children worked long hours in unventilated factories. People, surrounded by filth, often fell sick. Writers of those times described how the medieval European habit of not taking baths and not washing below the belt was responsible for a large number of deaths. The stink on the roads was literally unbearable. In America in the last century, it was impossible to walk through the streets of mid-Western cities without encountering pigs and stray cattle. People used to throw excreta out of their windows, which farmers would gather at night, hence the name, night-soil.

II. SULABH

a. Sulabh International Social Service Organization

THE SULABH INTERNATIONAL Social Service Organization is the leading non-profit outfit working to promote sanitation and prevent environmental pollution, both of which are critical components to a healthy and productive society. Growing urbanization has helped to produce serious house shortages, forcing people to live in shanty colonies without toilet facilities. From its beginnings in a small town in the state of Bihar, Sulabh now works virtually all over India with the help of a large work force of nearly 50,000 committed volunteers belonging to various disciplines including administrators, financial and management experts, engineers, architects, sociologists, scientists and media persons. It is one of the largest non-government organizations (NGO) in the world.

Despite the importance of toilets for health, people still build houses without them, which can indicate skewed attitudinal and cultural preferences. Official agencies are also to blame since they do not give sufficient stress to sanitation, especially toilet facilities, when building community houses. There are also economic and technological difficulties for sanitation programmes, for instance, a sewage system is very costly and may not be sustainable. In India, there is neither enough water in rivers to flush out city effluents nor enough money to set up sewage treatment plants.

b. Sulabh Technology

The Sulabh human waste disposal system is a radical departure from the conventional sewage system and is eminently suitable for use in both individual and cluster houses. The advent of Sulabh International in the field of sanitation in 1970 gave new impetus to the sanitation movement by evolving a low-cost pourflush water-seal toilet with two pits for on-site disposal of human waste as an alternative to bucket latrines (see Figure 1). Thus, it abolished the need for the manual handling of human waste. Sulabh has also been able to improve environmen-

tal sanitation and community health and hygiene.

The Sulabh toilet system is a cost-effective and most appropriate technology option. It needs only one-fifth of the water of conventional toilets - only two litres in comparison to the ten litres used by the conventional water closets (WC) - and thus conserves water, which is scarce in most African, Asian and Latin American countries. The system is also much cheaper than using sewers and septic tanks, and the toilets built on Sulabh technology have a large variety of designs to suit different income levels, topographical terrains and local resources. The system is economically and socio-culturally acceptable to the people. It is free from foul odours and can be built using locally available materials. It is easy to build and can be maintained by the homeowners themselves and, with a high potential for upgrading, it can also be easily connected to sewers, if sewers are introduced into the area. It does not need the emptying services of scavengers and the two pits work alternately for several years. The system also makes available high quality manure which is a good soil conditioner.

c. Impact and Spread

To date, Sulabh has constructed and converted over 1 million household toilets and 3,154 public toilets, respectively, which are being used by 10 million people every day. Over 37,500 scavengers have been liberated from the task of manual scavenging and 3,500 wards and family members of the liberated scavengers have been given vocational training. As many as 240 towns in India have been made scavenging free and there has been a dramatic change in the physical environment of the towns where the Sulabh system is used. In towns which have become scavenging free, all dry (or bucket) household privies have been converted into the new twin-pit pourflush Sulabh toilets. The houses which had no latrine have been provided with sanitary toilets. For those who could not afford toilets, or where space was a constraint, well-managed community toilets have been provided. Thus, the dumping of fresh pathogenic night-soil has stopped, leading to an improvement in the physical environment.

d. Self-sustaining Public Toilets

Sulabh's innovativeness is best demonstrated in the public toilet system operated on a pay-and-use basis which can be self-sustaining from the funding that customers generate. As well as the public toilets, Sulabh provides bathing, washing and urinal facilities with separate compartments for men and women. In some places, additional amenities such as a cloakroom, public telephone, primary health care, drinking water, schools for children in slums, etc. have also been provided. User charges are nominal, with the disabled, children and those who cannot pay allowed to use the facilities free; and the authorities do not have to provide funds for the maintenance of the public conveniences for a period of up to 30 years. In addition, these toilet complexes have provided dignity and safety since they allow for private defaecation and bathing. This is especially important for women, who are the greatest beneficiaries. Sulabh also plays the role of catalyst between and among government, local authorities and the users of community facilities.

III. OBJECTIVES

THE OBJECTIVES OF the Sulabh sanitation movement are broadly two-fold. First, *to restore human rights and dignity to scavengers*. This includes liberating the scavengers from the unhealthy and sub-human occupation of manually handling excreta by converting bucket privies into Sulabh *shauchalayas* (pourflush toilets with two pits for on-site disposal of human waste). It also means ensuring that the former scavengers and their wards get training in other occupations, thus helping in their social upgrading and their promotion as equals in society. This requires the setting up of information and employment exchange centres and helping scavengers obtain employment either in government or non-government organizations. Scavengers have also been supported in building their houses away from slums.

Second, *to prevent environmental pollution*. Sulabh seeks to:

- educate people not to defaecate in the open, in lanes, by-lanes, parks, streets, by the sides of roads or railway tracks;
- motivate people to convert bucket privies into Sulabh *shauchalayas* and to have toilet facilities in their houses;
- provide community toilets with bathing, washing, and urinal facilities on a pay-and-use basis in slums, and also for pavement dwellers, rickshaw pullers, any "floating" population and for those communities in whose houses toilets cannot be constructed due to space constraints;
- persuade people to plant at least five trees per family and also plant trees around public toilets for the protection of environment;
- harness non-conventional energy sources from human waste and save fuel and forests;
- procure manure from Sulabh *shauchalayas* and use it to increase farm productivity;
- promote job oriented education and primary health care;
- form groups of people from all walks of life throughout the country and abroad to build public opinion against social evils and for the cause of the economically poor and neglected sections of society;
- create new employment avenues by training change agents for integrated rural development; and
- promote consultancy, research and development in technical and social fields. Also, promote diffusion of innovations, education, motivation and awareness through mass communication.

I examined various toilet designs and the work done in this field in India and abroad, and developed Sulabh *shauchalaya* as the most suitable, affordable and socio-culturally acceptable technology. The central and state governments in India, and various national and international agencies such as the UN Development Programme, UNICEF, the World Health Organization and the World Bank have accepted Sulabh *shauchalaya* as the most appropriate low-cost technological option, and have suggested its adoption in India and other countries. The government of India has included low-cost sanitation as a vital component in the Integrated Development of Small and Medium Towns Pro-

gramme, and the Indian government's Housing and Urban Development Corporation (HUDCO) also gives financial assistance for low-cost sanitation to various categories of beneficiaries. The Indian Ministry of Urban Development provides a subsidy to local authorities for the conversion of dry or bucket privies into Sulabh *shauchalayas* and for the construction of toilets in houses.

IV. LIBERATION OF SCAVENGERS

a. Introduction

POINT 11 IN the government of India's 20-Point Programme of 1986 relates to "Justice to Scheduled Castes and Scheduled Tribes". It aims at the eradication of scavenging and undertaking special programmes for the rehabilitation of scavengers. Sulabh International is fully involved in achieving this objective.

b. Training and Rehabilitation of Scavengers

Sulabh International is the only non-government organization which embraces the twin objectives of liberating scavengers by the conversion of dry/bucket privies, and training and rehabilitation of liberated scavengers and their wards. Sulabh organizes programmes to train them in various vocations such as driving, audio and television assembly, tailoring, typing, canework, carpentry, leatherwork and masonry. They are also educated on health, sanitation and personal hygiene. Sulabh established the first training institute exclusively for scavengers at Patna, and it has now been moved to New Delhi. Another such institute has been established near Mumbai⁽²⁾ in collaboration with the state government.

c. Social Upgradation of Scavengers

The liberation of scavengers and their rehabilitation in other professions is not enough. No less important is the upgrading of their social status so that they can be absorbed into the mainstream of social life and the concept of "untouchability" can be abolished. Towards this end, Sulabh has

persuaded a large number of eminent persons, judges, politicians, ministers, journalists and lawyers to "socially adopt" a scavenger family each and help them obtain jobs and other benefits permissible under the law. The adopter visits the adoptee (and vice-versa) so that they can gain social respectability. This programme is receiving a very encouraging response.

In October 1988, I visited the Nathdwara temple in Udaipur (Rajasthan) together with 100 sons and daughters of scavengers and some Vedic *Brahmins*. Previously, *Harijans*⁽³⁾ had not been allowed to enter the temple. I organized a prayer and community meals with *Harijans*, both at Patna and at Delhi. Participation by the so-called high caste people at such functions was an indication that I had succeeded in bringing about a measure of change in society, dominated by orthodox Hindus.

V. OTHER ASPECTS OF SULABH'S WORK

a. Public Toilets and Baths

THE YEAR 1974 may be recalled as a landmark in the history of sanitation, when the system of operating and maintaining community toilets with bathing, washing and urinal facilities, with 24-hour attendant service, was initiated on the pay-and-use system with people's participation and with no burden on the public exchequer or local authorities in Patna.

Sulabh complexes have been welcomed both by the people and the authorities due to their cleanliness and good management. They have electricity and a continuous water supply, soap powder is supplied free to users for washing their hands and there are separate enclosures for men and women. The users are charged a nominal fee for using the toilets and/or baths but the use of urinal facilities is free. Children, disabled persons and those who cannot afford to pay are allowed to use the facilities free of charge.

The availability of bathing facilities is a boon to the poor. An end to open defaecation has resulted in improvements to the environment, to community health and to the

quality of life, thus raising people's productivity. Special toilets, combined with baths and showers, cloakrooms, a telephone and primary health care aids have also been provided in some of the Sulabh complexes. Furthermore, Sulabh has constructed, and is operating and maintaining, one complex on a pay-and-use basis at Thimphu, in Bhutan.

b. Biogas from Human Excreta

Sulabh International is the first organization to generate biogas from human excreta on a large scale at public toilets. The Gandhi Maidan (park) at Patna has been lit by converting biogas generated at Sulabh toilets into electricity by a dual fuel engine. Sulabh is helping to achieve an Indian Ministry of Non-Conventional Energy Sources objective by putting up human excreta based biogas plants all over the country. So far, 68 have been installed and the biogas is being utilized for lighting the toilet complexes and for cooking purposes. The organization also proposes to use biogas to supply warm water for bathing and for warming people up during the winter at Sulabh *shauchalaya* complexes.

c. Sulabh Centre for Action Sociology

The Sulabh Centre for Action Sociology was established to study social problems and to find solutions. It imparts training in various vocations to scavengers and their dependents, and runs an English-speaking school in Delhi for educating the children of scavengers who are given a free modern education in a variety of subjects. The main concentration is on vocational training, including computers and office management. To help develop the personality of scavenger children, boys and girls at Sulabh institutes are given training in dance and music. Education is a great redeemer; it is only through education that the final solution can be found to any social problem, especially when it comes to abolishing attitudinal prejudices. The scavengers' children are taught in English so that they can compete as equals in the job market. Hindi is taught as the national language along with Sanskrit, the latter being a source of *Brahmin* dominance in society.

d. Technical Research and Development

The Sulabh International Institute of Technical Research and Training is engaged in research and development in the fields of low-cost sanitation and biogas technology for overall environmental improvement. It has studied the performance of different types of biogas plants in various situations in Bihar at the request of the Ministry of Non-Conventional Energy Sources. At present, it is working on the optimum utilization and techno-economic evaluation of biogas plants fuelled by human excreta and other mixed wastes to ensure effective waste disposal and harnessing of bio-energy. An Indo-German collaborative study on a low maintenance waste water treatment system is being carried out in Delhi. Study and research were carried out on optimizing low-cost sanitation technology, and on the pollution of ground water and soil likely to occur from on-site sanitation near Calcutta, with radio-isotope tracers in high sub-soil water level areas.

e. Over to Villages

I have evolved an appropriate strategy of rural development by creating horizontal as well as vertical linkages between the local people and the development agencies. This is through a network of local youth who are trained as change agents and who act as catalysts in promoting rural development programmes, by motivating the rural populations and by acting as facilitators between government agencies as well as voluntary organizations engaged in a campaign to create model villages.

The Sulabh International Institute of Rural Development (SIIRD) chose the village of Teekli, situated in Gurgaon district of Haryana near Delhi, with the aim of transforming it into a model village. After a series of surveys and meetings with the local people of Teekli, "health" seemed to be their top priority after a needs identification. Sulabh, hence, launched a health survey wherein the family health records of all 1,006 households were completed. In all, 3,920 persons (85 per cent of the population) have undergone a complete medical check-up. In addition, 100 per cent coverage was achieved

for pre-natal check-ups and 70 per cent have procured family planning services. Around 2,000 people have been immunized through vaccination (including 989 children under the age of five) and a blood bank, with 150 voluntary blood donors, has been created. Around 300 Sulabh toilets have been set up in this village of 600 houses.

Another area where SIIRD has contributed significantly is in the promotion of environmental sanitation and community health through community action. This has been achieved through the implementation of a new training-school model in Andhra Pradesh which has been well received by the Overseas Development Assistance (ODA) of the British Council. The total number of people trained during the first phase was 1,000 teachers, 300 students, 200 sanitation workers and 60 public health engineers. With the perception levels and background interests of the target groups, and the principles of participatory learning in mind, the training modules were specially designed for each course and each category of trainee.

The Ministry of Environment and Forests has granted a pilot project on the same terms to develop schools as the focal point of awareness and motivation for mass action under the National River Action Plan.

A pilot project on sustainable rural development has been sponsored by National Fertilizers Ltd. - a public sector undertaking by the government of India in a tribal area (Bastar district) of Madhya Pradesh of which SIIRD is the implementing agency. The project has been developed with the specific purpose of evolving a unique model of government organization-NGO partnership in initiating a community action based approach for alleviating poverty through employment generation in the tribal villages. The emphasis is on the total development of the villages through awareness creation, self-help initiation and skill development of the people so that they can develop their communities as models of self-sustained growth.

With community participation, Sulabh seeks to provide the following: one Sulabh toilet to each household; access to safe and clean drinking water for every villager; medical aid for each individual; family welfare for each couple; complete health care for every

pregnant mother; immunization for the whole village; and total medicare. All this as well as other development activities such as paving all the lanes and roads with bricks; training for village youths in toilet construction, hand-pump installation and maintenance, making smokeless *chullahs* (stoves); biogas; adult education; family welfare; and public works, etc. The accent is also on strengthening the cottage industry base and the growth of village industries by using local renewable resources as well as the locally available skills for a sustainable rural development, in the true sense of the term.

f. Human Resource Development

A programme has been started to create infrastructure for rural development at a grassroots level by giving training to two youths from each village in different vocations, e.g. water supply, low-cost sanitation, health immunization, biogas, solar energy, social forestry, adult education, agriculture, street-paving, drain construction and making smokeless *chullahs*. A massive programme for providing latrines in rural areas is being planned for implementation in consultation with the various state governments. The approach aims to develop human resource and provide different designs of Sulabh *shauchalaya* at different costs. The beneficiary is given the option of selecting a design which best suits them.

g. Sulabh Integrated Health Care System

Health is closely related to sanitation. As such, a new dimension has recently been added to the Sulabh movement through the development of a Sulabh integrated health care model. This aims to bring all the components of activities related directly or indirectly to health care under one umbrella and will act as a complement or supplement to existing health care. Sulabh has imparted health and hygiene education to women in urban slums, part of a long-term strategy which can only be achieved and sustained through significant attitudinal change in society. Women play an important role, as they are the nucleus of the family, hence their training for better health for the family.

h. Employment Generation

More than 50,000 associate members give their services to Sulabh International. The total number of person days expended by Sulabh on the construction of nearly 1 million Sulabh *shauchalayas* and about 3,154 community toilet complexes adds up to many millions and many more are spent on allied works. For example, Sulabh was involved in the prestigious project for the prevention of pollution of the Ganga River. Project reports on the construction of Sulabh complexes, on the conversion of bucket privies and on the construction of sanitary toilets in houses where none existed were prepared for a number of towns in Bihar and Uttar Pradesh. Sulabh International, in collaboration with the Dutch consultancy firms M/s. Haskoning and Euroconsult, prepared project reports for Kanpur and Mirzapur under the Ganga action plan. Sulabh is involved in cleaning up the Yamuna River in Delhi by building a series of facilities along it.

i. Studies and Projects

Sulabh International has worked as a consultant on a number of World Bank assisted projects either independently or in collaboration with Engineering Services (India) Pvt. Ltd. Some projects pertain to the collection of data and information on the status of rural water supply and sanitation development in seven Indian states, and in laying down criteria and guidelines for selecting villages and districts to be included in the Integrated Rural Water Supply and Environmental Sanitation Project in Uttar Pradesh. Others include the identification of low-cost sanitation alternatives for Madras city and adjacent urban areas; low-cost sanitation for the Trivandrum (Kerala) Sewerage and Sanitation Improvement Project; and community awareness, environment and health education studies in Madras.

j. People's Movement

Sulabh plays an important part in identifying ways and means of solving common social problems through people's participation on a self-sustaining basis. Sulabh has proved that people themselves, and not the

government, can solve problems and NGOs should play the role of catalyst in making this happen. Women's problems are largely due to a lack of education and a skewed social structure which is set against them in gender biases, especially in low and middle-income countries. Yet, women hold the key to the success of sanitation programmes; they can bring about lasting changes in the family and society. Sulabh's strategy is to ensure the full participation of women in the sanitation programme by discouraging the prejudices which emanate from the caste system, religious radicalism and untouchability, and which have also been the sources of backwardness and poverty. Sulabh seeks to combat these by organizing the poor in cooperation with others for creating an equitable and just social order.

k. Capacity-building

Community participation has been central to the Sulabh movement, which has laid special emphasis on health education and on creating an awareness of sanitation and the environment. It has set up primary health care centres at community toilets, as a result of which considerable awareness has been created of the importance of personal hygiene and sanitation. It has helped bring about a change in social values and hygiene habits of the urban poor and helped them adopt cleanliness and sanitation as part of their daily routine. In fact, Sulabh works to turn the development process into a people's movement, with the people themselves becoming agents of change. Its innovative approach provides a sustainable environmental sanitation strategy to change the habits and attitudes of the people, which approach has helped build the capacity of the community and ushers a new self-sustaining sanitation order into society. Literacy, especially for women, is the major ideological foundation of the Sulabh movement, a knowledge and technology based organization seeking to change social norms and preferences by education, campaign, persuasion and pressure.

1. Editor's note: the term "scavenging" in India is given to the collection of human excreta from bucket latrines by "scavengers" who often clean out the latrines by hand and carry the excreta away in baskets on their heads.

2. Formerly known as Bombay.

3. A name given to those who were formerly known as "untouchables".

