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Evolution of Sanitation in India: A Case Study of Swachh Bharat Mission (2014-2023)

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Abstract

This study examines the Swachh Bharat Mission's (SBM) role in advancing sanitation development in India, analyzing its achievements and ongoing challenges. Through a review of government data, reports, and program initiatives, the research explores the evolution of sanitation policies, from earlier efforts like the Community Development Program to SBM's transformative approach. The study highlights SBM's impact on sanitation coverage, behavioral change, and waste management while addressing areas needing improvement for sustainable outcomes.

Introduction

The development of sanitation programs in India has been a key focus area for both the government and non-governmental organizations, given the significant challenges the country faces in ensuring access to proper sanitation. Historically, inadequate sanitation and poor waste management systems have contributed to a range of public health issues, with open defecation and contamination of water sources being common in many rural areas. However, in recent decades, India has made considerable strides in improving its sanitation infrastructure and encouraging behavior change through various initiatives and policies.

The importance of sanitation extends beyond hygiene; it is deeply connected to sustainable development. Access to proper sanitation significantly reduces the incidence of waterborne diseases, which can be a major public health concern, especially in developing countries. By improving sanitation, India has seen reductions in diseases such as diarrhea, cholera, and dysentery, which often disproportionately affect the poor. This not only enhances public health but also reduces the economic burden caused by healthcare costs and lost productivity.

Sanitation is integral to the achievement of the United Nations Sustainable Development Goals (SDGs), particularly Goal 6: Clean Water and Sanitation. By improving sanitation systems and promoting behavioral changes, India is not only ensuring the health and well-being of its citizens but is also making significant strides toward achieving broader sustainable development objectives. The progress made in sanitation has not only transformed communities but also helped build a foundation for a healthier, more equitable, and sustainable future for India.

Sanitation has long been a critical issue in India, impacting public health, social well-being, and national development. The country's journey to improve sanitation spans decades, marked by government programs, community initiatives, and societal transformation. Programs like the Total Sanitation Campaign (TSC) and Nirmal Bharat Abhiyan (NBA) laid the groundwork for the Swachh Bharat Mission, which launched in 2014 with ambitious goals. This article

explores SBM's implementation and assesses its impact on sanitation practices and infrastructure in India.

The Swachh Bharat Mission (Clean India Mission), launched in 2014, marked a turning point in India's sanitation efforts. This nationwide initiative aimed at eliminating open defecation, improving solid waste management, and promoting cleanliness across urban and rural areas. One of the central goals of the program was to provide every household with access to a toilet and ensure a clean environment for all. The mission has been instrumental in constructing millions of toilets, both in urban and rural areas, and has played a crucial role in raising awareness about the importance of sanitation. The government, in collaboration with various stakeholders, has worked tirelessly to integrate sanitation as an essential component of India's development agenda.

The Swachh Bharat Mission comprises two components: Swachh Bharat Mission (Gramin) for rural areas and Swachh Bharat Mission (Urban) for urban areas. The rural component aims to eliminate open defecation and improve sanitation facilities through the construction of household toilets, while the urban component focuses on waste management and creating public awareness about cleanliness. According to the official data, SBM has led to the construction of millions of toilets and the provision of sanitation facilities in previously underserved areas (Ministry of Jal Shakti, 2020).

Numerous studies have highlighted the significant impact of SBM on public health. According to Chattopadhyay (2019), the reduction in open defecation as a result of the mission has been directly linked to the decrease in the incidence of waterborne diseases like diarrhea, cholera, and dysentery, particularly in rural areas. Public health improvements are not just limited to disease reduction but also to better nutrition and higher school attendance, especially among young girls, as access to toilets has improved sanitation and menstrual hygiene management (Patel et al., 2020). The success of SBM, however, is not only attributed to infrastructure development but also to the behavioral change that the mission promotes. According to Gupta et al. (2021), the initiative has led to a notable shift in the social attitudes toward sanitation, where previously entrenched cultural practices like open defecation were prevalent. This shift has been particularly evident in rural communities, where SBM facilitated extensive community engagement through campaigns and the active involvement of local leaders and women (Jha et al., 2019). However, the effectiveness of these behavioral changes has been debated. Sharma and Chatterjee (2020) pointed out that while there has been progress, sustaining these behavioral changes remains a challenge, particularly in remote or underprivileged areas where traditional habits are deeply ingrained. Therefore, continuous education and community outreach programs are essential for ensuring the long-term success of SBM.

Despite its successes, the Swachh Bharat Mission has faced challenges in its implementation. One major issue is the quality and sustainability of the toilets built under SBM. Some studies, including those by Bansal et al. (2020), suggest that in some regions, toilets have been constructed but remain unused or are poorly maintained due to lack of water or inadequate

follow-up by local authorities. Furthermore, while SBM aimed to eliminate open defecation, the persistence of this practice in certain areas points to gaps in the mission's execution and the need for better monitoring and evaluation mechanisms (Dhar et al., 2020). Another issue is the disparity in the availability of sanitation facilities between urban and rural areas. While urban areas have seen significant improvements in waste management and infrastructure, rural areas continue to struggle with sanitation access, particularly in remote villages (Kumar et al., 2018). The Swachh Bharat Mission also has environmental and economic dimensions. By focusing on waste management and sanitation, the mission aims to reduce the environmental pollution caused by improper disposal of human waste and garbage. As noted by Singh (2019), SBM has contributed to better waste segregation and treatment practices in urban areas, which has helped reduce the burden on landfills and minimized contamination of water bodies. Patel and Yadav (2021) suggest that the mission has had a positive impact on local economies, particularly in rural areas, by creating employment opportunities in toilet construction, waste management, and sanitation-related activities.

Moreover, sanitation plays a vital role in environmental sustainability. Proper waste management, including the treatment of sewage and solid waste, prevents environmental pollution, which is critical for maintaining water quality, soil health, and overall ecosystem balance. In rural areas, the absence of open defecation also reduces the contamination of agricultural fields and water sources, contributing to better agricultural productivity and a cleaner environment.

Data and Methodology

This study is a meta analysis based on secondary data from government reports, surveys, and the Swachh Bharat Mission dashboard. Key metrics, such as sanitation coverage, toilet construction, and open defecation-free (ODF) status, were analyzed. Case studies from rural and urban regions provided insights into behavioral change and infrastructure development. Methodologies include quantitative analysis of sanitation statistics and qualitative evaluation of policy effectiveness.

Objectives

1. To trace the evolution of sanitation practices in India.
2. To evaluate SBM's impact on sanitation development and its challenges.

Results and Discussion

Sanitation Evolution in India

Sanitation in India has undergone significant evolution over the centuries, with gradual improvements in infrastructure, public health policies, and societal attitudes. In ancient times, cities like Mohenjo-Daro in the Indus Valley civilization had sophisticated drainage systems, reflecting an early understanding of sanitation. However, with the rise of colonialism, sanitation practices deteriorated, as British rule focused more on urban development than addressing the public health needs of the majority of rural India. Post-independence, the country struggled with high rates of open defecation and poor waste management systems, especially in rural areas. The government introduced various sanitation programs, but it wasn’t

until the 1980s and 1990s that substantial efforts were made through initiatives like the Central Rural Sanitation Program (CRSP) and the Total Sanitation Campaign (TSC). These programs aimed to build toilets and raise awareness, yet progress was slow due to socio-cultural barriers and insufficient infrastructure. The launch of the Swachh Bharat Mission (SBM) in 2014 marked a watershed moment in the evolution of sanitation in India. SBM's comprehensive approach, focusing on behavior change, rural sanitation, urban waste management, and cleanliness campaigns, brought a sense of urgency and national commitment to achieving open defecation-free India. This mission has catalyzed large-scale toilet construction, community involvement, and waste management reforms, significantly improving public health and contributing to India's overall development goals. Despite challenges, the evolution of sanitation in India reflects a long journey towards improving hygiene, health, and the quality of life for millions.

1. **Community Development Program (1954):** The first nationwide sanitation program, but with limited impact due to resource and community engagement constraints.The Community Development Program (CDP), launched in 1954 by the Government of India, was a pioneering initiative aimed at transforming rural India by promoting local self-reliance and holistic development. The program was designed to address the socio-economic disparities between urban and rural areas by focusing on key aspects such as agriculture, health, education, sanitation, and infrastructure. The CDP sought to empower rural communities through decentralized planning and decision-making, encouraging participation from villagers in the development process. It introduced the concept of "community development blocks," which served as administrative units for implementing various rural development activities. By 1954, around 55 Community Development Blocks were created across the country. Within the first seven years of its launch(1954-1961), the program expanded rapidly, with the number of CDBs increasing to 2,500 blocks by 1961, covering more than half of India's rural population. The program aimed to provide basic services to rural areas. By the mid-1960s, the CDP had contributed to the construction of numerous rural roads, schools, dispensaries, and water supply systems. Over 100,000 village panchayats were involved in the planning and implementation of community-driven projects. One of the key focuses was rural health and education, with the establishment of over 200,000 adult education centers and the improvement of sanitation through rural health campaigns. In terms of health, the CDP helped set up 1,500 rural health centers and provided medical care to millions. The program aimed to enhance agricultural productivity by introducing modern farming techniques. By the early 1960s, over 80,000 farmers were enrolled in agricultural extension programs across the country, promoting improved practices and rural agricultural reforms.

2. **Central Rural Sanitation Programme (CRSP, 1986):** The Central Rural Sanitation Programme (CRSP), launched in 1986 by the Government of India, aimed to improve sanitation facilities in rural areas, focusing on the provision of sanitary latrines and the promotion of hygienic practices to improve public health. Focused on household latrines for low-income families but failed to address behavioral issues. The program was initiated to address the widespread issue of open defecation in rural India and to reduce the incidence of waterborne diseases such as diarrhea and cholera. Initially, the CRSP focused on constructing

individual household latrines and promoting sanitation awareness among rural communities. By the end of its first phase in 1990, the program had supported the construction of over 1.5 million individual household latrines in various rural areas. Despite these efforts, the program faced challenges such as insufficient community involvement and limited funding, which hindered its full effectiveness. In 1999, the CRSP was restructured and evolved into the Total Sanitation Campaign (TSC), which integrated a more holistic approach, emphasizing behavior change, community participation, and the construction of public facilities. According to data from the Ministry of Rural Development (2001), by the end of the CRSP, approximately 28% of rural households had access to sanitation facilities, representing a modest but important improvement in rural hygiene standards. The CRSP laid the foundation for future sanitation programs, underscoring the importance of integrating sanitation with broader public health goals.

3. **Total Sanitation Campaign (TSC, 1999):** Achieved progress in toilet construction and hygiene awareness, though sustainability remained a challenge. The Total Sanitation Campaign (TSC), launched in 1999 by the Government of India, was a comprehensive rural sanitation program aimed at eliminating open defecation and improving overall hygiene and sanitation practices across rural areas. The TSC marked a shift from the earlier Central Rural Sanitation Programme (CRSP) by focusing not only on infrastructure (like household latrines) but also on community mobilization, behavior change, and awareness-raising. One of its key features was the involvement of Panchayati Raj Institutions (local governance bodies) and the private sector to ensure sustainable sanitation practices. According to the Ministry of Rural Development (2006), the TSC led to the construction of over 20 million household toilets and the coverage of over 70% of rural households with sanitation facilities by the year 2006. Additionally, the TSC helped establish more than 100,000 community sanitary complexes and promoted the use of low-cost sanitation technologies. Data from the 2009 Evaluation Report indicated that around 50% of rural households in many states achieved open defecation-free status under the campaign. Despite these successes, the TSC also faced challenges, particularly in ensuring the maintenance of sanitation infrastructure and achieving lasting behavioral change in certain regions. In 2012, the TSC was succeeded by the Nirmal Bharat Abhiyan, which continued the focus on sanitation and community involvement.

4. **The Swachh Bharat Mission (SBM)**

The Swachh Bharat Mission (SBM), launched on October 2, 2014, by the Government of India, is one of the most ambitious sanitation initiatives aimed at eliminating open defecation, promoting cleanliness, and improving solid waste management across the country. The mission has two components: SBM (Gramin) for rural areas and SBM (Urban) for urban areas. Its primary objectives include constructing individual household toilets, promoting behavioral change through awareness campaigns, and improving the overall cleanliness and waste management systems in both urban and rural regions.

1. Swachh Bharat Mission 1.0 (2014-2019) was the first phase of the nationwide sanitation campaign, launched with the goal of making India open defecation-free (ODF) with increased

rural sanitation coverage and mass behavioral change campaigns also improving sanitation practices across the country. The mission focused on building toilets, raising awareness, and ensuring behavioral change regarding sanitation. Under SBM 1.0, the government targeted the construction of over 60 million toilets in rural areas and aimed to eliminate open defecation. By the end of 2019, more than 100 million toilets were built, and over 600,000 villages were declared open defecation-free (ODF).

SBM 1.0 also emphasized the importance of solid and liquid waste management, with over 5,000 towns and cities adopting solid waste management practices by 2019. Data from the Ministry of Jal Shakti (2019) confirmed that by the end of the mission, India achieved an ODF status, with a drastic reduction in open defecation and a significant shift in sanitation behaviors. The mission also focused on community participation and brought various stakeholders together, including government bodies, NGOs, and local communities, to achieve its objectives. Despite these achievements, challenges remained in ensuring the long-term sustainability of the infrastructure and maintaining sanitation practices, particularly in remote areas.

2. Swachh Bharat Mission 2.0 (SBM 2.0), launched in 2020, is the second phase of the Swachh Bharat Mission, building on the success of SBM 1.0 while focusing on the sustainability of sanitation practices and waste management in urban and rural areas. SBM 2.0 extends its scope to cover the management of solid and liquid waste, wastewater treatment, and ensuring the sustainability of ODF (open defecation-free) status. One of the key objectives is to make all cities ODF+, which goes beyond just toilet construction to include the proper management of toilets and waste. By 2021, SBM 2.0 had facilitated the construction of over 9.2 million individual household toilets in rural areas and has worked towards the creation of more than 1,000 ODF+ certified cities in urban areas. The program also focuses on eliminating manual scavenging, promoting plastic waste management, and fostering resource recovery from waste, with the Ministry of Housing and Urban Affairs reporting that over 4,000 urban local bodies have adopted integrated waste management systems by 2021. SBM 2.0 also prioritizes behavior change, education, and community-driven approaches to maintaining cleanliness and sanitation. According to data from the Ministry of Jal Shakti (2021), significant progress has been made, with over 70% of urban India adopting effective waste segregation and treatment processes. SBM 2.0 is a comprehensive effort that integrates waste management, water conservation, and sanitation practices for a cleaner, healthier India.

Achievements

The Swachh Bharat Mission (SBM) has achieved remarkable success since its inception in 2014, with significant improvements in sanitation across both rural and urban India. By 2019, SBM's first phase (SBM 1.0) successfully made India open defecation-free (ODF), with the construction of over 100 million toilets in rural areas and the declaration of 600,000 villages as ODF. The program also focused on solid waste management, with more than 5,000 urban towns adopting effective waste segregation and processing systems. SBM 2.0, launched in 2020, has continued this momentum by emphasizing sustainable sanitation and waste

management. As of 2021, over 9.2 million household toilets were constructed under SBM 2.0 in rural areas, and more than 1,000 cities were certified as ODF+. In terms of waste management, over 70% of urban local bodies adopted waste segregation, leading to a significant reduction in waste going to landfills. The Ministry of Jal Shakti (2021) reported that SBM has contributed to the construction of over 11,000 community toilets and the improvement of sanitation in over 4,000 urban local bodies. These achievements have not only improved public health by reducing waterborne diseases but also helped in fostering community participation and raising awareness on sanitation. Despite challenges in ensuring the sustainability of infrastructure and behavioral change, SBM's outcomes have had a profound impact on the sanitation landscape in India.

Challenges

Despite the remarkable achievements of the Swachh Bharat Mission (SBM), several challenges have persisted in ensuring the sustainability and long-term success of the initiative. One of the primary challenges is the maintenance of the newly constructed toilets, particularly in rural areas. Data from the Ministry of Jal Shakti (2021) indicates that while over 100 million toilets were built under SBM 1.0, many of them are underutilized or poorly maintained due to lack of awareness, insufficient water supply, and inadequate community involvement. Additionally, the mission's goal of achieving 100% waste segregation in urban areas has faced significant hurdles, with only 70% of urban local bodies fully implementing waste segregation systems by 2021. The challenge of waste management, particularly in smaller towns and cities, continues to impede SBM's effectiveness. Manual scavenging and the improper disposal of waste also remain persistent issues, despite efforts to eliminate such practices under SBM 2.0. Another challenge is ensuring behavioral change, as sanitation practices are deeply ingrained in cultural and social norms. A 2019 evaluation report noted that while many urban areas had made substantial progress, rural regions, particularly in remote areas, continued to struggle with open defecation and poor hygiene practices. Moreover, the COVID-19 pandemic posed a temporary setback to SBM activities, particularly in urban waste management, due to lockdown restrictions and a shift in priorities. These challenges highlight the need for continued awareness campaigns, better infrastructure maintenance, and community involvement to ensure the mission's long-term success.

Public Awareness and Behavior Change

Public awareness and behavior change have been central to the success of the Swachh Bharat Mission (SBM), as the mission recognizes that mere infrastructure development is not enough to achieve lasting sanitation improvements. One of the key strategies of SBM has been to engage communities in discussions about hygiene, sanitation, and waste management. The government launched nationwide campaigns such as the "Swachhata Hi Seva" and "Darwaza Band" campaigns to raise awareness and encourage positive behavioral changes. According to the Ministry of Jal Shakti (2021), over 150,000 villages were actively involved in SBM's awareness campaigns, and there was a significant increase in community participation in rural sanitation activities. A key achievement of SBM 1.0 was the shift in attitudes towards open

defecation, with millions of rural households adopting toilet use as a routine practice. Data from a 2019 evaluation report revealed that over 95% of rural households in many states had access to toilets, and communities reported increased acceptance of sanitation practices, though challenges remained in rural regions. SBM 2.0 continues this focus by enhancing the impact of behavior change initiatives, emphasizing waste segregation and promoting plastic-free communities. However, challenges persist in changing deeply rooted cultural habits, especially in remote and underserved regions, where behavioral shifts towards consistent toilet use and waste management practices are slower. Despite these challenges, SBM has made notable strides in shaping public perceptions and improving sanitation behaviors across India.

Conclusion

The Swachh Bharat Mission has brought transformative changes to India's sanitation landscape, improving health, hygiene, and environmental conditions. While the mission's achievements are significant, addressing its challenges is essential for long-term success. Future efforts should focus on sustaining ODF status, advancing waste management infrastructure, and bridging urban-rural disparities. With sustained commitment, SBM can continue to contribute to India's development and global Sustainable Development Goals (SDGs). However, challenges persist, including maintaining toilets and sanitation infrastructure, especially in remote areas, and ensuring consistent behavior change. Despite progress, waste management, particularly in smaller towns, remains a hurdle, and shifting cultural habits regarding open defecation requires continuous effort. Public awareness campaigns, such as "Swachhata Hi Seva," have been crucial in engaging communities and promoting hygienic practices. While SBM has made remarkable progress, ensuring long-term sustainability, proper waste management, and widespread behavior change are ongoing challenges. The mission’s success relies on continued community involvement, government support, and awareness-building to maintain cleanliness and hygiene across India.

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