

# KOLKATA SCHOOL-BASED MENSTRUAL WASTE MANAGEMENT SYSTEMS LANDSCAPE ANALYSIS



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A lack of clear, actionable guidance and well-designed practices for the management of menstrual waste can lead to adverse effects on the functionality and sustainability of entire sanitation facilities on school campuses. Menstrual waste is often thrown in latrines, discarded on bathroom floors, or tucked into the rafters of bathroom stalls due to the lack of an appropriate, well-maintained disposal system. In addition to school-level interventions, a systems-level approach to solid waste management at schools is required to make a sustainable change to the current waste management challenges.

Created through a formative research effort conducted by Splash's India team, this document lays out the summary of current practices, names specific gaps in the waste management systems at play, and provides recommendations for addressing the issue, in turn leading to cleaner, safer sanitation facilities for the hundreds of thousands of students in government schools across Kolkata. The recommendations laid out in this report are intended to be leveraged by other WASH+MH implementors, school administrators, and advocacy organizations to further improve the menstrual waste management practices within Kolkata, India, and beyond.

## 1. Introduction

Menstrual health is one of the three core pillars of Splash's WASH-in-schools model. Among the facets of menstrual health, menstrual waste management (MWM) is a crucial component that significantly impacts the usage, efficacy, and sustainability of toilet facilities in schools. Quite often, girls have reported not using toilet facilities due to used pads clogging drains or being strewn inside cubicles. Apart from this, unsafe disposal of used sanitary pads has a direct impact on environmental health and hygiene. Given this critical issue, Splash has committed to investigating menstrual waste management solutions in Kolkata.

In Kolkata, Splash has explored multiple ways to tackle this problem such as distributing large bins for girls' toilet blocks in early 2019 and conducting an electrical incinerator pilot in five schools. As an organization with a belief in the sustainability of its interventions, Splash is cognizant that the solutions available in Kolkata to handle menstrual waste have their own set of limitations. With this knowledge, Splash embarked on a research effort from November 2020 to March 2021 to study the existing systems that influence the management of menstrual waste in the schools of Kolkata and to gather a set of recommendations to help Splash and the broader WASH and MH sectors map out an effective strategy for MWM in schools. This research effort in addition to the insights we gain from our own small-scale pilots will help us to fully understand the possible solutions for MWM in schools.

## 2. Objective

To understand the complex landscape of menstrual waste management, Splash contracted the services of a waste management expert with 20 years of experience in the recycling, solid waste management, and environmental infrastructure. Their role was to conduct subject-matter expert interviews, school-level observational visits, and a detailed review of existing literature. The objectives of the research were as follows:

1. To define the landscape of existing solutions and best practices pertaining to MWM utilized by other sectors and domains such as the private sector, health facilities, and government agencies.
2. Collate the existing policy frameworks (global, national, and state levels) in the context of MWM.
3. Provide actionable and contextually bound recommendations for MWM program interventions (social and behavior change, infrastructure, partnerships, and process and system improvements) for Kolkata, India, in the context of Splash's Project WISE (WASH in Schools for Everyone) initiative.

### 3. Limitations of the Study

This study was conducted in the middle of the COVID-19 crisis — the research team had to work under several restrictions related to movement and school closures. It was difficult to access government stakeholders due to the pandemic and West Bengal elections in April 2020. Due to restrictions in school hours, scheduling school visits was challenging, and only four schools were ultimately included in our study of school MWM systems and facilities. The school visits were conducted in mostly empty schools, so our assessment of current use practices of on-site facilities was dependent on accounts from teachers and Splash staff.

### 4. MWM Landscape

To understand the school level MWM system in Kolkata, it is important to understand the current policies and initiatives that inform the handling of menstrual waste at the national, regional, and municipal levels in India.

#### 4.1. POLICY LANDSCAPE

##### **Ministry of Drinking Water and Sanitation. Menstrual Hygiene Management, National Guidelines 2015<sup>1</sup>**

In the National guidelines for Menstrual Hygiene Management Swachh Bharat Mission Guidelines (SBM-G) outlines actionable recommendations for state governments, district administrations, engineers and technical experts in line departments, and school head teachers and teachers to improve the menstrual experience of girls in schools. The guidelines recommend there be trash bins in each stall that are washable and have lids that close. Solutions for the final disposal of pads on school grounds include deep burial, composting, pit burning and incineration — this is left to the school's discretion.

##### **Solid Waste Management (SWM) Rules 2016<sup>2</sup>**

As per sub-rule 3(19) of SWM Rules 2016, "dry waste" includes recyclable and non-recyclable waste: combustible waste, sanitary napkins, diapers, and more(4)(b) states that used sanitary waste like diapers and sanitary pads should be wrapped in the pouches provided by the manufacturers or brand owners and disposed of in a bin meant for dry waste. As per sub-rule 17, it is the duty of the manufacturer or brand owners responsible for sale and introduction of disposable sanitary products to provide these disposal bags along with the product to ensure safe handling and avoid cross-contamination of other waste. This sub-rule also mandates implementation of extended producer responsibility (EPR) laws for all companies producing diapers and sanitary pads under Plastic Waste Management and Handling Rules 2018. The guidelines suggest that the manufacturers should also assist local authorities in handling disposal of their products.

##### **Biomedical Waste Management & Handling (BMW) Rules, 2016<sup>3</sup>**

There is debate whether menstrual waste must be brought under Bio-Medical Waste Management Rules, 2016 or not. Sanitary waste is similar to biomedical waste yellow category, type G, which dictates that discarded linen, clothing, mattresses, and bedding contaminated with blood or body fluids must be incinerated, autoclaved, or microwaved to destroy pathogens.

##### **CPCB Guidelines for Management of Sanitary Waste, 2018<sup>4</sup>**

The Central Pollution Control Board issued these guidelines in May 2018, building upon the Solid Waste Management Rules 2016, and the National Guidelines on MHM issued by Union Ministry of Drinking Water and Sanitation 2015. These guidelines specify clear roles and responsibilities for the various agencies and departments engaged in the design and implementation of MHM programs. These guidelines link the legal aspects of sanitary waste management and waste handling as described in the National Guidelines on MHM.

## 4.2. INITIATIVES AND INNOVATIONS

### City-level Campaigns

The Red Dot Campaign<sup>5</sup> was initiated in collaboration with the Pune Municipal Corporation to convince Pune residents to wrap and mark their sanitary waste with a red dot prior to disposal. Bengaluru also saw a similar movement to segregate menstrual waste at the household level, spearheaded by the NGO Hasiru Dala.<sup>6</sup>

### SanEco Technology: A New Way to Treat and Recycle Menstrual Waste

PadCare Labs, a start-up company, developed the SanEco system with the support of the prestigious National Chemical Laboratory, Pune.<sup>7</sup> SanEco is an eco-friendly recycling system that uses a “5D” (disinfection, decolorization, deodorization, deactivation, and disintegration) chemo-mechanical process, which treats a used sanitary napkin within 30 seconds. The resulting by-product can be recycled as fuel or material for the paper industry. This technology is yet to be rolled out at scale.

## 5. MWM in the Municipal Landscape

Kolkata Municipal Corporation (KMC) has municipal bylaws to manage waste, but there is no dedicated reference to menstrual waste. During the stakeholder consultation, all participants confirmed that KMC has neither conducted any awareness campaign related to sanitary waste handling nor conducted any capacity-building programs for its staff handling the waste. Discussion with experts revealed that menstrual waste from residential areas is handled with general garbage as a part of the door-to-door collection and transported via transfer stations to the existing Dhapa and Garden Reach sites for dumping. The waste collected at public garbage bins, commercial establishments, and schools is handled in a similar way.

## 6. Gap Analysis

### 6.1. SCHOOL-LEVEL BEHAVIOR CHANGE

As observed in the stakeholder consultation, there is a significant gap in proper handling of menstrual waste in schools. Often girls do not wrap menstrual waste in the provided disposal pouch (packaging of the fresh product), as required by SWM Rules 2016, before disposing of it in the bin. The menstrual waste is not segregated and is instead handled in mixed waste which can be dangerous for sanitary workers who handle the trash at the processing centers.

### 6.2. LEGAL AND REGULATORY

Inclusion of menstrual waste as a part of dry waste in the definition of SWM Rules 2016 creates confusion about its handling, even though its composition is similar to biomedical waste. In addition, solid waste management municipal bylaws of KMC do not mandate women and girls to wrap the waste into a pouch before its disposal or handover to municipal sanitary staff as is required in cities like Pune and Bengaluru.

### 6.3. TECHNOLOGY AND STANDARDS

Government programs tend to exclusively promote incineration technology, inadvertently discouraging development of alternatives that could be more environmentally sustainable and cost-effective. The research and development landscape for menstrual waste management is still in its nascent stages, so organizations that want to support the improvement of MWM in schools have limited options. In addition, manufacturers of incinerators are not bound to follow standards or undergo mandatory certification of their products leading to the continued production of incinerators that do not meet the global best practice standards for emissions and de-incentivizing of innovation for more environmentally friendly products.

## 6.4. FUNDING

During our site visits, schools reported that cleaners are hesitant to clean trash bins from girls' bathrooms due to the social taboo attached to menstrual blood. This becomes a challenge as some schools are forced to store menstrual waste for weeks before they can collect extra funds to incentivize someone to clear the accumulated waste. From our site visits and interactions with teachers at schools across Kolkata, we can conclude that schools struggle to keep their toilets clean due to pervasive social taboos related to menstruation and a lack of funds needed to incentivize cleaning staff.

## 7. Recommendations

This section discusses some key recommendations based on the review of existing literature, subject-matter expert interviews, and site visits.

### 7.1. SCHOOL LEVEL RECOMMENDATIONS

#### Optimizing Menstrual Waste Storage in Schools

Schools should provide a minimum 5-liter bin with a lid in every toilet cubicle to collect menstrual waste and avoid any spillage. The segregated menstrual waste collected in every cubicle should then be collected into a 50-liter bin for safe storage and ease of handling. Both types of bins should be yellow and bear the biohazard symbol to comply with color-coding requirements of the BMW Rules, 2016. As reported by Splash and CLPOA staff, in some schools, students throw food waste in bins kept in toilet cubicles. To avoid this, a separate food-waste bin should be provided in or near the toilets.

#### Improving Incinerator Installation at Schools

In schools where girls' toilet blocks are on the top floor, the incinerator's ventilation pipe should be erected vertically and at a minimum height of two meters. This would ensure that smoke is diluted with air flow and does not create any local pollution. During winter, incinerators should be operated at noon to take advantage of ideal conditions, like a faster air current.

#### Minimization of Menstrual Waste Load

Schools should spread awareness about reusable menstrual products among students. This could help schools reduce the menstrual waste load and would make students conscious about the hazards of single-use plastics pollution from pads.

#### Conducting Inter-School Information Exchange Programs

During the visit to schools, certain schools displayed excellent initiatives and unique approaches toward the management of menstrual waste. Model school visits would give teachers opportunities to share their experiences and learnings with their peers in other schools.

### 7.2. MUNICIPAL RECOMMENDATIONS

#### Inclusion of Menstrual Waste in Local Municipal Bylaws

SWM municipal bylaws of Pune and Bangalore cities mandate sanitary waste generators to wrap the waste and mark it with a red dot for easy handling and segregation by municipal workers. This may be further included in existing SWM municipal bylaws of Kolkata through suitable amendments for ease of handling menstrual waste by KMC sanitation workers and staff of service providers.

### **Conduct Ward-Level Awareness Programs**

Menstrual waste management in a dense city like Kolkata is an uphill task that requires the cooperation of multiple levels of stakeholders. The KMC should start ward-level awareness programs on the harmful impact of the improper disposal of sanitary pads and disseminate communication materials on sustainable menstrual products, similar to recent campaigns to enact a ban on single-use plastics.

### **Improving Data Collection**

There is no data available on menstrual waste generation across the city in the present system. KMC should prepare a daily input-based digital management information system to record performance of its municipal solid waste management services provided by its sanitation department. This will help the corporation conduct rapid assessments and help them mitigate risks. KMC should record a standard operating procedure (SOP) for this after discussion with its own staff and environmental groups.

## **7.3. NATIONAL LEVEL RECOMMENDATIONS**

### **Redefining Menstrual Waste in Waste Management Policies**

Menstrual waste is infectious and requires special handling; it is generated in bulk daily. The present handling of menstrual waste should be included under the yellow category, waste type 6 waste mentioned in Bio-Medical Waste Rules, 2016, given its similarity in composition and that it requires identical handling. Sanitary waste as defined in SWM Rules, 2016 includes used baby diapers and sanitary pads and is categorized as 'dry waste.' It is recommended that this definition of dry waste should be redefined to exclude menstrual sanitary waste to avoid confusion.

### **Promoting Sustainable Menstrual Products**

The Ministry of Health and Family Welfare should establish a national framework to include sustainable products in the procurement guidelines for its public health programs. This would ensure that startups engaged in producing such products can access wider markets for their products and will have more incentives to innovate for resource constrained consumers and institutions.

## **7.4. OPPORTUNITIES FOR LOCAL IMPLEMENTERS**

Menstrual waste management is a complex landscape, but there are certain areas where local implementers could take the lead to promote better practices in Kolkata's schools:

### **Advising Schools on Proper Installation of Incinerators**

Until a more economically viable option for menstrual waste processing is piloted successfully, incinerators presently seem like the most acceptable option in schools. As Splash now has the knowledge about proper installation and maintenance of incinerators, it can advise schools in advance of installation of incinerators so that they are prepared for the operation and maintenance commitment.

### **Promoting Informed Product Choice**

Splash should share more information regarding the environmental benefits of reusable products and advise schools that have their own pad vending or buying options to stock pads that are more environmentally sustainable. Splash may explore partnering with organizations engaged in manufacturing and supplying biodegradable pads and test their quality in Splash's ongoing school engagement program.

### Partnerships for Better MWM

Paint It Red, Anahat Foundation for Change, and Nirman Foundation are some Kolkata-based organisations doing commendable work on menstrual health and that have specifically worked to address menstrual waste management in their programs. Splash should explore collaborations with these organizations to strengthen advocacy efforts to address MWM at the school level and pilot new solutions with the government's support.

### Pilot Alternative Menstrual Waste Treatment Technology

An innovative solution for treating on-site sanitary pads is microwave technology, which can destroy pathogens in menstrual waste. This microwave-based dry disinfection system has been developed by the Society for Applied Microwave Electronic Engineering & Research (SAMEER). The limitation of this technology is its cost (\$21,683.80 USD per unit, approximately), but if more partners join in, this could be tested in a cluster of schools.

## 8. Conclusion

There is currently a lack of clear guidance at the national, regional, and municipal levels on the proper management of menstrual solid waste on school campuses. There are solutions available that will require the mobilization of funds as well as coordination across multiple types of stakeholders. Cross-sectoral collaboration among policymakers, school administrators, private waste management companies, and incinerator manufacturers will enable the implementation of a safer waste management system. Sorting of menstrual waste from general solid waste at the school level and proper maintenance of school-level incinerators will both ensure the safety of sanitation workers and ease the maintenance of school sanitation facilities. The development of standards for emissions produced by small-scale incinerators will ensure that the environmental burden of SWM is mitigated rather than simply translated into another facet of environmental mismanagement. With the proper maintenance of sanitation facilities — enabled by a streamlined solid waste management system — restrooms will remain functional, clean, and safe for use of menstruating students.

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