



# IMPACT ASSESSMENT STUDY OF SANITATION PROJECT

NOVEMBER , 2024

Submitted to:

**GMDC-Gramya Vikas Trust**

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## Project Report

### Project Title: Sanitation Project (Desk Review)

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To everyone who has supported and contributed to this project, we extend our deepest appreciation. Together, we are advancing sanitation, public health, and dignity for underserved communities in Gujarat.

# EXECUTIVE SUMMARY

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The GMDC-GVT sanitation initiative, implemented in the districts of Bharuch (Rajpardi) and Kutch (Mata No Madh), aims to enhance public health and hygiene among local residents, truck drivers, and transient workers. This project employs a free business model, which ensures that sanitation facilities remain clean and accessible through recurring expenses for caretaker honorariums, housekeeping supplies, and general upkeep. Even though the initiative has made significant progress in meeting sanitation demands, there is still room to improve its infrastructure, accessibility, and awareness in order to realize its full potential. The main conclusions of the theme analysis are summarized in this executive summary, along with practical suggestions for maximizing the project's efficacy in these areas.

In Rajpardi, the sanitation centre has become a vital resource for truck drivers and the workers, reflecting GMDC-GVT's commitment to community welfare. However, the facility's limited capacity, remote location, and less visibility present challenges to universal access. Many potential users are unaware of its existence due to minimal outreach initiatives, leading to underutilization. Despite these obstacles, the facility's good maintenance ensures a reliable and hygienic environment. Expanding infrastructure and strengthening awareness efforts can further amplify the facility's impact.

At Mata No Madh in Kutch, the sanitation facility has been praised by users for its cleanliness and basic amenities. However, truck drivers, particularly those working night shifts, find it difficult to reach due to its single location and limited operating hours, which include closing at 5 PM. An estimated 800 to 1,000 trucks run through the area every day, putting a significant amount of demand on the one facility. Mata No Madh also has some awareness issues. Due to limited outreach and education initiatives, many drivers are still unaware that the facility is meant for them. According to inputs from the NASA Foundation, only one awareness campaign was conducted over a decade ago when the facility was inaugurated. Targeted awareness campaigns and operational adjustments, such as extending hours and adding more facilities, can address these challenges and ensure broader utilization.

The thematic analysis emphasizes the urgent need for changes, and it is complemented by views from the NASA Foundation, the implementing agency. More infrastructure is needed in both districts, especially more sanitary facilities in residential and busy areas. To close the knowledge gap between locals and truck drivers, targeted awareness initiatives are crucial. These campaigns should use multilingual materials, clear signage, and community engagement activities to ensure widespread understanding and utilization of the facilities. To accommodate different work patterns, especially for truck drivers, operational changes are required, such as expanding operating hours, ideally to 24-hour schedules.

Ensuring long-term sustainability remains a priority. A consistent maintenance schedule, sufficient financial resources, and active involvement from local stakeholders are essential for keeping the facilities hygienic and operational. By fostering community participation in maintenance, GMDC-GVT

can create a sense of shared ownership, easing the burden on project managers while strengthening the project's local impact. Feedback mechanisms, such as suggestion boxes and periodic surveys, will help adapt services to evolving community needs and ensure continuous improvement.

GMDC-GVT should also put in place a monitoring and assessment system that keeps tabs on key performance indicators (KPIs), like facility cleanliness, community satisfaction, and usage rates, in order to maximize the initiative's overall impact. This data-driven strategy would enable prompt modifications and guarantee that the project keeps successfully achieving its goals.

The GMDC-GVT sanitation initiative has already made substantial strides in addressing sanitation challenges in Bharuch and Kutch. By addressing gaps in infrastructure, awareness, and accessibility, and by emphasizing community engagement and sustainability, the project has the potential to become a model for CSR-driven public health initiatives. With its strong foundation and commitment to improvement, GMDC-GVT can set a benchmark for enhancing health, dignity, and quality of life in underserved communities.

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# Chapter 1 – Introduction

## 1.1 Background

Access to clean and safe sanitation facilities is a fundamental aspect of ensuring public health, preserving dignity, and maintaining environmental hygiene. In rural and underserved areas across India, however, the lack of adequate sanitation infrastructure poses a significant challenge. Without these essential facilities, communities face a range of critical issues, including the spread of sanitation-related diseases, environmental pollution, and a general decline in the quality of life. For many, the absence of sanitation facilities can also contribute to social stigma and a loss of dignity, particularly among women, children, and marginalized groups who suffer most from such inadequacies.

Understanding the gravity of these challenges, Gujarat Mineral Development Corporation Gramya Vikas Trust (GMDC-GVT), an initiative under the Corporate Social Responsibility (CSR) framework of Gujarat Mineral Development Corporation (GMDC), has been proactive in addressing the sanitation deficit in the regions surrounding its mining operations. In line with its commitment to social welfare and sustainable development, GMDC-GVT aims to improve the sanitation conditions in these areas, benefiting not just local communities, but also the transient workforce involved in the mining and transportation of lignite.

Among its notable initiatives, GMDC-GVT has constructed and is maintaining free public toilets at its mining sites in Mata No Madh (Kutch) and Rajpardi (Bharuch). This initiative addresses the pressing need for sanitation facilities for various groups including local residents, truck drivers, cleaners, and other workers in the mining sector. These groups, often with limited access to basic sanitation, directly benefit from these facilities, which contribute to improving their health, well-being, and overall quality of life.

What sets this project apart is not only its focus on providing hygiene-friendly facilities but also its commitment to sustainability. The project integrates eco-friendly elements such as solar heating systems and biogas plants, enhancing the environmental impact of the initiative. This environmentally conscious approach is in line with GMDC-GVT's broader CSR mission, which emphasizes not only improving the quality of life for people but also contributing to the long-term health of the planet. Through this multifaceted approach, GMDC-GVT continues to foster sustainable development while addressing key social challenges in some of Gujarat's most underserved regions.

By offering these sanitation services free of charge, GMDC-GVT ensures that no one, particularly the economically disadvantaged workers, is excluded from benefiting from this essential service. This free model reinforces the trust and engagement of the community, ensuring that sanitation and hygiene are no longer a privilege but a basic right for all, regardless of their economic status.

## 1.2 Objectives



*Fig 1.1: Image depicting the objectives of the Project*

The primary objectives of this project are to:

- **Improve Public Health:** Give the local population, truck drivers, and employees at GMDC mining sites access to sanitary restrooms. This improves general population health, encourages personal hygiene, and lowers the risk of diseases linked to poor sanitation.
- **Promote Sustainable Sanitation Practices:** Put in place a free scheme to cover routine upkeep and guarantee that the facilities continue to be in top shape over time. In addition to offering a steady stream of income to fund facility maintenance, this strategy promotes a culture of accountability.
- **Enhance Community Well-Being:** The project raises the standard of living for both truck drivers and transient workers by providing easily accessible, clean public restrooms. Access to proper sanitation facilities contributes to a sense of dignity, reduces inconvenience, and supports a healthier community environment.
- **Reduce Environmental Pollution:** By putting in place appropriate waste disposal procedures, environmental issues brought on by poor sanitation can be addressed. The solar heating and biogas systems support environmentally friendly operations by minimizing pollutants in the environment, preventing water contamination, and slowing the spread of illnesses in the region.
- **Support Corporate Social Responsibility Goals:** By meeting a critical social need in the neighbourhoods around its mining activities, GMDC-GVT hopes to strengthen its commitment to corporate social responsibility. This initiative demonstrates GMDC-GVT's commitment to sustainable development and community welfare.



### 1.3 Scope

- **Construction of Public Toilets:** Establishing two well-constructed and accessible toilet blocks equipped with basic amenities to ensure safe and hygienic usage in Rajpardi and Mata Na Madh.
- **Maintenance and Operation:** Daily maintenance of the facilities is managed by caretakers employed at each site, ensuring a high standard of cleanliness and operational reliability. To ensure that all users are in a hygienic environment, the facilities are routinely cleaned, stocked with the required supplies, and observed.
- **Environmental Sustainability Features:** Solar heating systems and biogas plants will be installed at both locations. While the solar heating system reduces dependency on traditional energy sources by providing sustainable energy for facility operations, the biogas plant aids in the efficient management of organic waste.
- **Staffing and Supervision:** Employment of local caretakers to oversee the day-to-day maintenance of the toilets, with registers maintained to record staff attendance and ensure accountability.
- **Monitoring and Reporting:** To preserve openness and guarantee compliance with project criteria, quarterly reports are sent to the CEO of GMDC-GVT. In order to support ongoing improvement, these reports track facility usage, maintenance tasks, and any problems that may arise.

### Expenditures on Sanitation Project

A breakdown of the expenditures for the sanitation initiatives at Mata No Madh and Rajpardi, as part of GMDC-GVT's CSR activities, highlights the financial commitment made to improve public health infrastructure in these areas:

*Table 1.1: Breakdown of Sanitation expenditures*

Activity	Expenditure (INR)
Assistance in construction of toilet blocks under MNREGA	330,000
Assistance in construction of toilet blocks under SBM	324,000
Purchase of water tanks & accessories for primary school	9716
Purchase of medicines	5400
<b>Total sanitation expenditure</b>	<b>669,116</b>

*Source: (CSR Work Done by Lignite Project, Rajpardi)*

These allocations reflect GMDC-GVT's focus on enhancing sanitation infrastructure and accessibility. The construction and maintenance of sanitation facilities not only improve daily life but also align with GMDC-GVT's commitment to sustainable development and community well-being.

### 1.4 Key highlights of the scheme

Since its inception, the project has witnessed a significant impact on the lives of beneficiaries, including community members, truck drivers, and workers associated with the GMDC mining sites. With an estimated annual footfall of 12,000 beneficiaries, these public toilets have become essential facilities, contributing to the community's sanitation and hygiene standards.

Key highlights of the scheme include:

- **Provision of Hygienic Facilities:** By guaranteeing that truck drivers, workers, and cleaners have access to clean, safe restrooms, the project greatly enhances public hygiene at GMDC's project locations.
- **Promotion of Personal Hygiene:** The approach lowers the risk of health problems linked to inadequate sanitation practices by encouraging users to maintain personal hygiene through regular access to clean restrooms.
- **Environmental Impact:** Utilizing solar heating and biogas plants not only increases the sustainability of the facilities but also reduces their environmental impact. This strategy lowers waste, stops pollution in the environment, and supports regional initiatives to preserve a cleaner ecosystem.
- **Community Engagement and Awareness:** By promoting hygiene and sanitation practices, the project fosters awareness among the local community, inspiring them to uphold cleanliness and prioritize health. This supports a larger shift in society toward better hygiene habits and environmental stewardship.

## 1.5 Summary

The "Construction and Maintenance of Toilets" project by GMDC-GVT addresses critical sanitation needs in two key locations, Mata No Madh and Rajpardi, adjacent to GMDC mining operations in Gujarat. Understanding how important sanitation is to public health, GMDC-GVT teamed up with the NASA Foundation to create and manage accessible, hygienic public restrooms using a sustainable free business model. This program seeks to raise the standard of living for locals, truck drivers, and other workers while also lowering environmental pollution and improving community health. The project's ecological elements, like solar heating systems and biogas plants, demonstrate GMDC-GVT's dedication to eco-friendly solutions. Financially, the project has allocated INR 669,116 towards sanitation-related infrastructure, demonstrating significant investment in community welfare and CSR goals. This report provides an in-depth desk review of the initiative, examining its implementation, impact, and potential areas for improvement.

## **Chapter 2 – Methodology**

This chapter outlines the research methods employed in evaluating the Sanitation Project implemented by GMDC-GVT. The study utilized a mixed-methods approach, integrating qualitative and quantitative data collection and analysis, to comprehensively assess the project's impact, sustainability, and effectiveness.

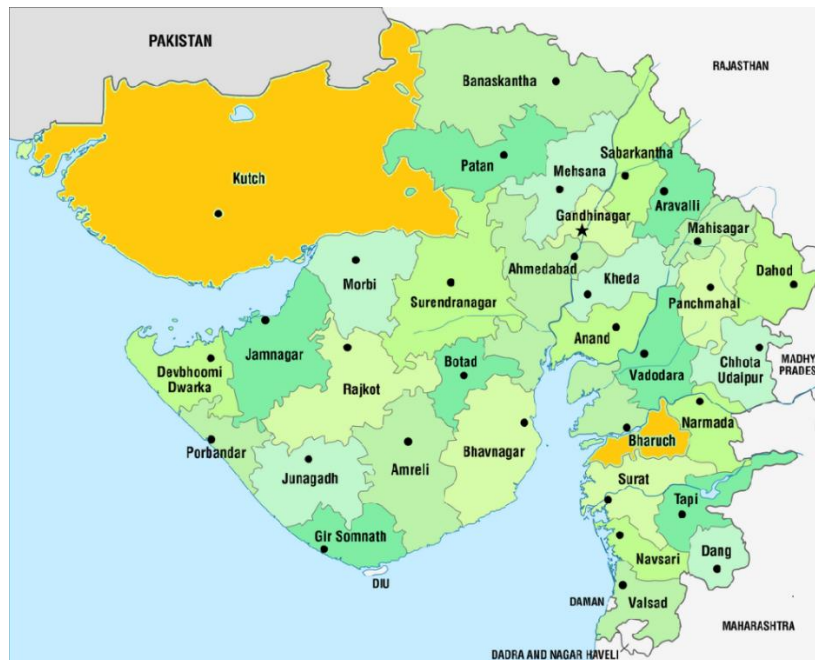
### **2.1 Detailed description of methodology**

Field data collection and quantitative financial record analysis form the basis of this study's approach, which aims to comprehend the project's social and economic effects. In particular, a variety of viewpoints regarding the availability, use, and maintenance of sanitary facilities were recorded through Semi-Structured Interviews (SSIs) and In-depth interviews with stakeholders, beneficiaries, and members of the community. An in-depth investigation of users' subjective experiences as well as insights about community satisfaction and possible improvement areas were made possible by this qualitative technique.

The study uses information from financial records and published reports from the NASA Foundation and GMDC-GVT for quantitative analysis. These resources provide useful details about the project's budgetary allotments, operating and maintenance expenses, and spending on resources like solar and biogas. This dual strategy captures both financial sustainability and community impact, allowing for a more comprehensive assessment.

### **2.2 Study region**

Mata No Madh in Kachchh and Rajpardi in Bharuch, both in Gujarat, India, are the project's two primary locations. These locations were chosen because they are close to GMDC's lignite mining activities, which have a significant demand for sanitary facilities that are both accessible and clean. Truck drivers, cleaners, and mine workers are among the many people who regularly travel through the primarily rural towns nearby, underscoring the significance of sanitary infrastructure for environmental cleanliness and public health.



*Fig 2.1: Study region*

### 2.3 Sampling and data

To ensure comprehensive representation, purposive sampling was used to select participants for the SSIs. This strategy focused on truck drivers, and facility maintenance workers, project officers, and the implementing agency's representatives—all of whom directly benefited from the sanitary facilities. The thematic analysis was mainly based on observations from the field.

- **Semi-Structured Interviews (SSIs):** 6 SSIs were carried out with individual stakeholders, such as truck drivers, project officers, and representatives of the implementing agency (NASA Foundation). SSIs allowed for a more personal exploration of participant experiences and provided specific insights into facility maintenance, community engagement, and the perceived benefits and limitations of the sanitation facilities. Key topics were covered in conversations with the NASA Foundation, such as the goals of the project, maintenance challenges, the effectiveness of awareness efforts, and the facilities' long-term viability. Truck drivers' knowledge of the facilities, utilization trends, and barriers to obtaining sanitation services was brought to light during interviews. By connecting the operational and end-user experiences, these interviews provided a deep, nuanced viewpoint. We had 4 of these interviews recorded and 2 were based on observations as the respondents were not comfortable being recorded.

Table 2.1 summarizes the respondents profile of the Semi-Structured Interviews (SSIs) and their main perspectives:

*Table 2.1: Table summarising respondent's profile*

<b>Respondent</b>	<b>Role/Category</b>	<b>Perspective</b>	<b>Key Challenges Highlighted</b>
<b>Truck Drivers</b>	Direct beneficiaries	Positive feedback on cleanliness and maintenance of toilet blocks.	<ul style="list-style-type: none"> <li>- Limited awareness about the facility's purpose (some thought it was only for officials).</li> <li>- Restricted operating hours that do not cater to night shifts.</li> </ul>
<b>Project Officers</b>	Field-level officers	Discussed the project's progress and long-term viability, highlighting steady adoption trends.	<ul style="list-style-type: none"> <li>- Budgetary constraints for maintenance.</li> <li>- Difficulty in conducting regular site visits due to remote locations.</li> </ul>
<b>NASA Foundation Representatives</b>	Implementing agency staff	Provided insights into the implementation process and operational strategies.	<ul style="list-style-type: none"> <li>- Low community awareness due to infrequent outreach campaigns.</li> <li>- High dependency on limited staff for maintenance and operations.</li> </ul>

*Source: Table generated from collected data*

- **Quantitative Data Sources:** Financial data was gathered from GMDC-GVT's CSR records and NASA Foundation's published reports. This data included:
  - Maintenance expenses
  - User data of Bharuch, and Kutch

These data points provided an essential view of the project's financial aspects, supporting a detailed analysis of whether the collected user fees are sufficient to cover maintenance and operational costs over time.

## 2.4 Purpose for the chosen methods

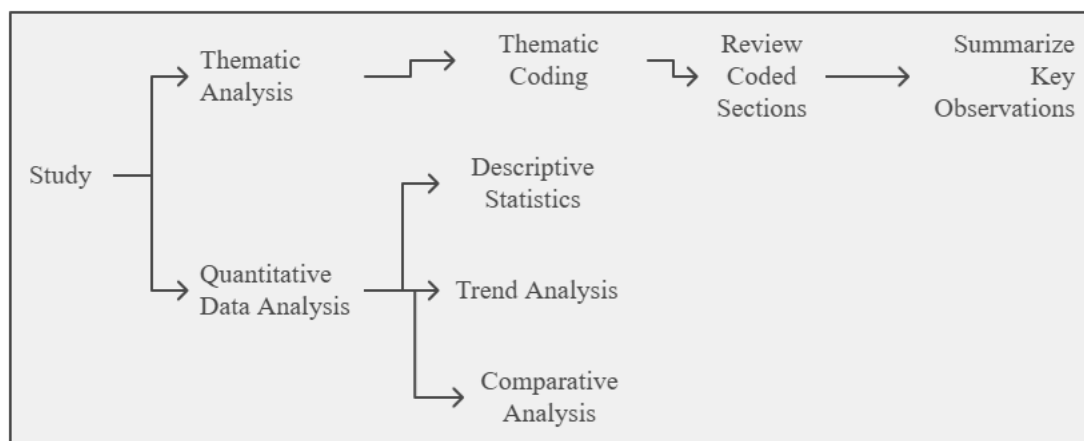
The methodology combines qualitative and quantitative approaches to provide a comprehensive evaluation of the project. Each method serves a distinct purpose in achieving a holistic understanding:

Semi-structured interviews (SSIs) were chosen to explore the perspectives of individual stakeholders, including truckdrivers and workers in the facility. These interviews provide detailed insights on community involvement, facility upkeep, and the perceived pros and cons of the sanitary facilities. The study was deepened by interviews with members of the NASA Foundation and about 5 truck drivers. These interviews provided a detailed understanding of operational issues, user trends & experiences, and accessibility challenges.

These qualitative techniques promoted open communication, enabling users and stakeholders to share their experiences and offer honest opinions on the efficiency and usefulness of the sanitation facilities. To supplement these insights and ensure a thorough assessment of the project's financial and operational elements, quantitative data was reviewed, including financial records and user statistics from GMDC-GVT's CSR records and NASA Foundation reports. When combined, these methods were able to capture the users' actual experiences as well as the practicalities of the project's installation and maintenance.

## 2.5 Data analysis method

To derive meaningful insights, the study employs specific analytical techniques suited to both qualitative and quantitative data.



*Fig 2.2: Image depicting data analysis approach of this study*

- **Thematic Analysis for Qualitative Data:** The data from SSIs and In-depth interviews was analysed through thematic coding, identifying recurring themes such as accessibility, cleanliness, user satisfaction, and perceived improvements in public health. This process involved categorizing data into themes, reviewing coded sections, and summarizing key observations within each theme.

The thematic analysis provides a structured framework for interpreting community feedback, highlighting the project's strengths and potential areas for improvement.

- **Quantitative Data Analysis:** Quantitative data, such as user statistics from Rajpardi and Mata Na Madh, was analysed to summarize usage patterns (e.g., total users). Trend analysis examined fluctuations over time, while comparative analysis highlighted differences between facilities. This combined approach provides a comprehensive understanding of the project's impact.

## 2.6 Limitations of the study

Despite its comprehensive methodology, the study faced several limitations:

- **Logistical Constraints:** Reaching the remote study locations posed challenges, limiting the scope of qualitative data collection, such as user experiences and success stories, as users often lacked the time to participate.
- **Limited Secondary Data:** The study encountered constraints in accessing comprehensive secondary data, which may have restricted the depth of the analysis. Additionally, the lack of documented user experiences or success stories hindered a richer understanding of the project's impact on individuals.

This methodology provides a robust framework for evaluating the Sanitation project, ensuring that both community experiences and financial realities are comprehensively analysed to understand the project's success and sustainability.

## Chapter 3 – Qualitative Analysis and Findings

### 3.1 Introduction

This chapter presents an in-depth analysis of the sanitation project implemented by GMDC-GVT in Bharuch district, with a focus on understanding its current impact, the challenges faced, and opportunities for improvement. Through a thematic analysis of data collected from observations, and semi-structured interviews (SSIs) conducted with local residents, truck drivers, and other stakeholders, this chapter aims to provide insights into the project's effectiveness, the level of community engagement, and the adequacy of facilities. This thematic approach organizes the findings into key themes that emerged from the field data, highlighting the perspectives of those directly affected by the project.

### 3.2 Rajpardi, Bharuch district

This section provides a detailed analysis of the sanitation facility implemented by GMDC-GVT at Rajpardi, a key location in Bharuch district. The sanitation facility was established to cater to the needs of truck drivers, and workers associated with GMDC's operations. This analysis's goal is to evaluate the project's operational and community impact while highlighting its achievements and potential areas for development.

Rajpardi serves as an important transit hub, with a steady flow of truck drivers and workers benefiting from the facility. By providing sanitary, accessible, and well-maintained toilets, the project seeks to alleviate the region's sanitation issues. With an emphasis on user awareness, accessibility, utilization trends, and maintenance procedures, the thematic analysis examines qualitative data gathered through observations and interviews. This section aims to assess the sanitation facility's current state and offer practical suggestions to improve its sustainability and impact by looking at the viewpoints of stakeholders.

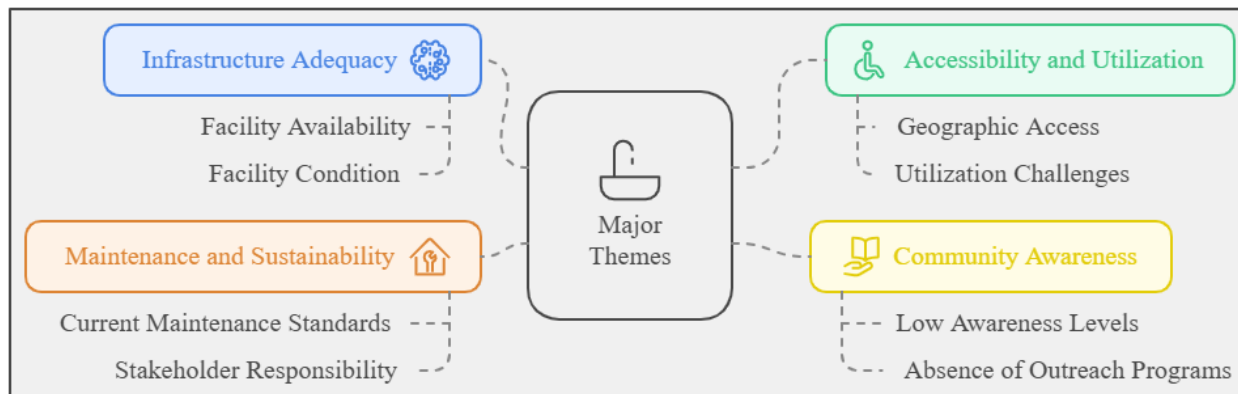


*Fig 3.1: Sanitation facility, Source: Picture taken during Field Visit to Bharuch*



### 3.2.1 Thematic analysis

This section categorizes the findings from the sanitation project in Bharuch into distinct themes, each reflecting core issues and feedback from various stakeholders, particularly the intended beneficiaries, such as truck drivers and local villagers. The themes analysed include infrastructure adequacy, accessibility and utilization, community awareness, and maintenance and sustainability.



*Fig 3.2: Image showing the major themes identified in Rajpardi, Bharuch*

#### 3.2.1.1. Infrastructure Adequacy

The initial findings underscore the inadequacy of existing infrastructure, with only one sanitation centre located at the GMDC mining site serving a large population of truck drivers and workers.

- **Availability of Facilities:** The sanitation centre at the site is primarily used by truck drivers. However, with just a single facility in place, its reach remains limited given the high demand from both the mining site workforce and nearby communities. Truck drivers interviewed during the scoping visit indicated that the scarcity of facilities often leads them to resort to open defecation, raising significant public health concerns.
- **Facility Condition:** Observations noted that the existing facility was generally clean and operational, a positive outcome that reflects well on the initial implementation and maintenance efforts. However, interviews revealed concerns among users about the adequacy of this single facility in addressing the needs of the community, particularly given the centre's limited capacity and restricted hours of operation.

The data collected through SSIs suggests that additional infrastructure investment, particularly the establishment of multiple sanitation centres across strategic locations within the district, could significantly enhance access and reduce reliance on inadequate alternatives.

### 3.2.1.2. Accessibility and Utilization

Access to the sanitation centre emerged as a critical theme, with several barriers preventing optimal utilization by both truck drivers and local villagers.

- **Geographic and Physical Access:** The sanitation centre's location on the GMDC mining site limits its accessibility for community members, as the facility is somewhat far away from what could be considered readily accessible. Interviews revealed that, due to the distance and lack of alternative transportation, many truck drivers are unable to utilize the facility regularly. The remoteness of the centre also restricts its usage by those who need it most, especially in emergencies.
- **Utilization Challenges for Truck Drivers:** Truck drivers, who are a primary beneficiary group of the project, reported that they often lack sufficient time during short breaks to travel to and use the sanitation facility. In SSI's, drivers emphasized the need for facilities along major transit routes to better align with their work schedules and break locations. The current arrangement at the mining site alone does not fully meet their needs, leading to a gap in intended utilization.

The findings indicate a clear need for more strategically located sanitation centres along key routes and within village areas, as well as mobile units for more flexible access.

### 3.2.1.3. Community Awareness

Awareness of the sanitation project and its services was identified as a major factor affecting utilization rates and community engagement.

- **Low Awareness Levels:** Interviews with drivers revealed that a significant portion of the community was unaware of the sanitation centre's existence. This lack of awareness prevents many potential users from accessing the facility and benefitting from the improved sanitation options available. Community leaders expressed a need for awareness programs to educate residents about the project and encourage usage of the sanitation services.
- **Absence of Outreach Programs:** Stakeholders reported an absence of formal outreach initiatives by GMDC to inform community members about the sanitation facility. Without visible signage or targeted campaigns, the centre remains underutilized, especially by those who are less familiar with the mining site area. The lack of awareness further contributes to the reliance on open defecation, exacerbating public health issues.

Implementing a well-structured awareness campaign could substantially increase utilization and improve hygiene practices within the community, leading to greater public health benefits and project impact.

#### 3.2.1.4. Maintenance and Sustainability

The sustainability of the sanitation facility, particularly with regard to long-term maintenance, emerged as a key concern among stakeholders.

- **Current Maintenance Standards:** Initial observations confirmed that the facility is consistently well-maintained, with cleaning routines ensuring a hygienic environment. Stakeholders acknowledged the positive impact of these practices on user satisfaction and the overall effectiveness of the facility.
- **Stakeholder Responsibility and Involvement:** While the facility is maintained to a high standard, interviews highlighted an opportunity to enhance collaboration between local stakeholders and maintenance teams. Clear communication regarding maintenance roles and responsibilities can further strengthen the facility's long-term sustainability. Encouraging periodic community engagement sessions can help build awareness about the facility's maintenance needs and promote collective responsibility.

The findings highlight the importance of establishing a sustainable maintenance model, possibly through community partnerships or periodic inspections by local authorities.

#### Summary:

The thematic analysis of the sanitation project in Bharuch district underscores the need for additional facilities, improved accessibility, and targeted awareness programs to maximize the project's impact. While the current sanitation centre has made positive strides in providing clean facilities to truck drivers and local residents, its reach and usage remain limited. By addressing these challenges, GMDC can enhance the project's effectiveness, fostering improved hygiene practices and contributing to better public health outcomes for both the community and the transient workforce.

### 3.3 Kutch

This section provides a comprehensive analysis of the sanitation facility implemented by GMDC-GVT at Mata No Madh, a primary location for the Lignite Project in Kutch district. The objective of this analysis is to examine the financial and operational aspects of the sanitation project and to understand its impact on truck drivers, who represent a significant segment of its target users. Given the high volume of truck traffic—estimated at 800 to 1,000 trucks per day—the sanitation facility was introduced to offer a clean and accessible space for transient workers and drivers who pass through the mining site.

The Thematic Analysis, explores qualitative data gathered from interviews and observations, focusing on drivers' awareness, accessibility, usage, and overall perceptions of the facility. By examining the user perspectives, this analysis provides a comprehensive understanding of the project's current status and highlights areas for potential improvement to maximize its impact and accessibility.

### 3.3.1 Thematic analysis

This thematic analysis examines the feedback collected from truck drivers regarding the sanitation facility provided by the GMDC-GVT project in Mata No Madh, Kutch. The focus is on understanding drivers' awareness, usage, and perceptions of the facility, as well as identifying potential areas for improvement. The findings below are organized into key themes based on feedback, interviews, and observations from drivers using the sanitation centre.

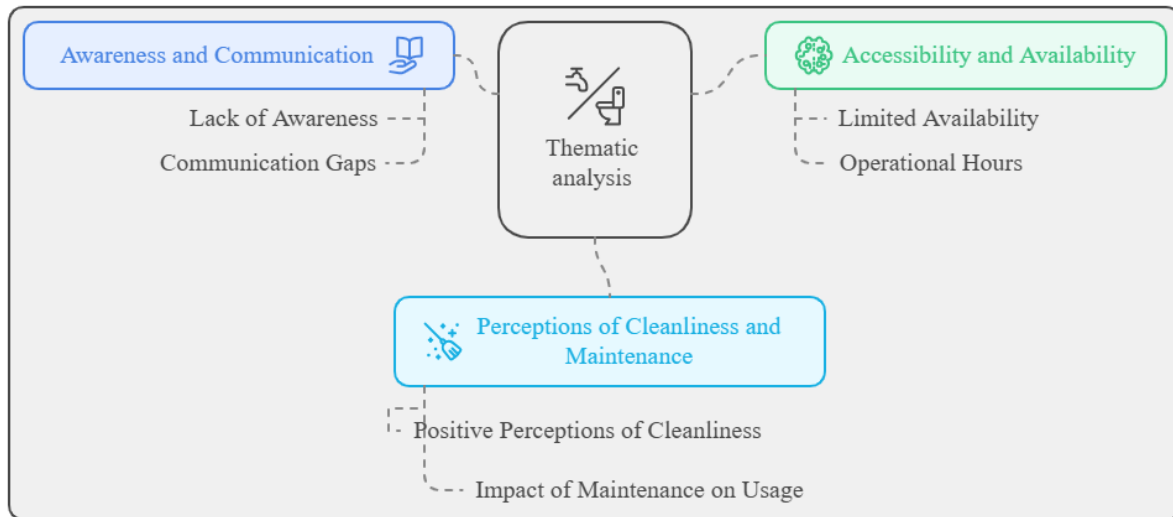


Fig 3.3: Image showing the major themes identified in Mata Na Madhi, Kutch

#### 3.3.1.1. Awareness and Communication

One of the strongest themes emerging from the driver feedback is a general lack of awareness about the purpose and availability of the sanitation facility.

- **Lack of Awareness:** A significant number of drivers, reported not knowing that the restroom was intended for their use. They thought it was not for truck drivers but for GMDC officials. Because most drivers simply ignored the facility or were ignorant of its purpose, the idea that it was "not made for them" contributed to poor usage rates among drivers. Three of the 4-5 drivers who were interviewed did not use the sanitation centre because they were unaware of its existence.
- **Communication Gaps:** According to the driver's feedback, "*nobody told us it was made for us*", indicates a communication gap. Drivers were confused about who the facility was designed for because there was no clear signage or direct contact. The lack of focused outreach to educate drivers, particularly those who were new to the mining area, made this problem much worse.

It is suggested that a truck driver-specific awareness campaign might greatly boost facility usage. This might involve GMDC or facilitators communicating at the access points and placing signage in the appropriate local languages.

### 3.3.1.2. Accessibility and Availability

Drivers also commented on the accessibility of the sanitation facility, with specific feedback on operational hours and the limited number of available facilities.

- **Limited Availability:** According to a driver, the facility was frequently locked at night. Even while he said that the facility was usually adequate for his requirements during the day, other drivers who work at night might not be able to use it because it is locked. Other drivers' comments also highlighted how inadequate the mining area's lone restroom is to accommodate the roughly 800-1000 trucks that pass through there every day. This limited number of facilities leads to underutilization and restricts drivers' access to basic sanitation.
- **Operational Hours:** Drivers who work late or early hours found the facility's limited hours of operation, especially at night, to be a disadvantage. Some drivers felt that 24-hour access would better serve the demands of the heavy truck traffic, while others drove mostly during the day and did not see this as a restriction.

All drivers, regardless of shift or time of day, would benefit from improved access and usage if the hours of operation were extended and the number of facilities along main routes and within the mining region was increased.

### 3.3.1.3. Perceptions of Cleanliness and Maintenance

Another key theme from the feedback is the appreciation of cleanliness and maintenance among drivers who were aware of and used the facility.

- **Positive Perceptions of Cleanliness:** Drivers, who were aware of the facility, provided positive feedback, stating that the sanitation centre was “*clean and well maintained.*” A driver noted that all basic facilities were present, meeting the hygiene needs of drivers who did make use of the toilet. The facility’s cleanliness and maintenance were seen as strong points, and no additional improvements were requested in terms of hygiene or upkeep.
- **Impact of Maintenance on Usage:** Cleanliness is a critical factor in encouraging the continued use of the facility by those aware of it. The positive feedback on maintenance standards indicates that GMDC’s sanitation efforts are appreciated by users, but awareness barriers limit its perceived value.

Maintaining the current high standards of cleanliness is essential to encouraging repeat use by drivers. Expanding maintenance schedules to allow for 24-hour access would further support usage, especially for those working outside of typical daytime hours.

### **3.4 Interview with the Implementing Agency (NASA Foundation)**

In addition to the observations and feedback gathered from beneficiaries, an interview with the implementing agency, the NASA Foundation, provides further insights into the objectives, challenges, and operational aspects of the sanitation project. The interview highlights both the goals of the project and the operational realities that the agency faces.

- **Objectives of the Project**

The NASA Foundation emphasized that the primary aim of the project is to provide sanitation facilities to truck drivers, security staff, and other contracted persons of GMDC in Rajpardi and Kutch. As the foundation clarified: *“The facilities were inaugurated on 12th December 2011 for Rajpardi and 20th May 2010 for Kutch.”* This demonstrates the long-standing nature of the initiative, with over a decade of operation in these locations.

- **Is One Toilet Enough for Kutch?**

The NASA Foundation acknowledged the vast region and heavy truck traffic when questioned about the sufficiency of the solitary toilet block in Kutch, pointing out the difficulties in providing enough facilities. As one representative of the agency stated: *“Given Kutch’s large area and the high volume of truck traffic (approximately 1,000 trucks daily), there is only one toilet block per location”* The agency insisted that there are no immediate plans for more toilet blocks and that the project was still just intended to serve the mining site in spite of this recognition. This illustrates how difficult it is to meet the high demand for sanitary facilities.

- **Operational Hours**

Another issue was the hours when the sanitary facilities were open. The facilities are not open 24 hours a day, the organization clarified. Instead, they remain operational until 5 pm, aligning with GMDC operations. It was observed, nevertheless, that this timetable limits the facilities available to truck drivers who work nights. The NASA Foundation representative confirmed: *“The sanitation facilities are not open 24 hours a day. They remain operational until 5 pm, aligned with GMDC operations.”* The facility's limited operation hours became evident as a significant obstacle, even if there were indications claiming that it remained open later in the evening.

- **Awareness Campaign**

When the sanitation facilities were first introduced, the NASA Foundation ran an awareness campaign, but the organization recognized that follow-up efforts were infrequent. When questioned about the regularity of awareness programs, a representative stated: *“We implemented an awareness program once after the inception of the toilet facilities, but we have not repeated it since then.”* This suggests a deficiency in community education and outreach. In order to promote the use of the free service, the foundation stressed the significance of altering the community's perspective, yet the efforts in this regard had fallen short.

- **Maintenance and Staffing**

Regarding maintenance, the NASA Foundation explained that one employee is in charge of cleaning and operational duties at each site. Maintenance activities have continued in spite of obstacles, such as the distance from Ahmedabad making direct oversight challenging. As one representative shared: *“There is one person in each location who is responsible for keeping the facility clean and operational.”* Although routine maintenance is carried out, the foundation pointed out that budgetary limitations affect how long these initiatives may last.

- **Challenges**

The interview also addressed various challenges the agency faces in maintaining the project and its infrastructure. The logistical complexity of overseeing and maintaining plants located far from Ahmedabad is one of the significant obstacles. As the representative noted: *“The distance from Ahmedabad complicates direct supervision and maintenance visits.”* This geographical barrier has made it difficult to expand the initiative and guarantee its long-term efficacy, especially when paired with a lack of funds for maintenance supplies and employee salaries. In order to improve the impact and sustainability of the sanitary facilities, the agency emphasized the importance of addressing these issues.

### **3.5 Summary**

Several important conclusions about the truck drivers' experiences with the sanitation project at Mata No Madh are highlighted in the thematic analysis, which is supplemented with information from the NASA Foundation interview. A sizable section of the target population was not aware that the facility was available to them, even though those who were aware of it and used it reported being satisfied with its upkeep and cleanliness. Although an awareness program was put in place at the beginning of the project, the NASA Foundation verified that it hasn't been replicated in more than ten years. This suggests a weakness in ongoing outreach initiatives that could raise use rates if fixed. Additionally, drivers working night shifts are unable to access the facility due to its limited operating hours, which correspond with GMDC's work schedule. The Foundation also acknowledged that, given the high volume of trucks in the area, the present Kutch single toilet block might not be enough to accommodate demand. The project's impact might be greatly increased and the sanitary needs of drivers in the Kutch region could be better met by addressing these awareness and accessibility issues through focused outreach, extended operating hours, more facilities, and ongoing maintenance.

## Chapter 4 – Quantitative Analysis and Findings

This chapter provides an in-depth quantitative analysis of the sanitation facility usage at Rajpardi and Mata Na Madh, highlighting trends, patterns, and potential areas for improvement. The data presented here has been sourced from secondary sources, primarily the NASA Foundation, which implemented the sanitation scheme. By examining the user statistics over time, this chapter seeks to offer actionable insights to optimize the functionality and accessibility of these facilities.

### 4.1 Overview of data collection

The data analysed in this chapter comprises user statistics from the sanitation facilities at Rajpardi and Mata Na Madh, covering monthly and yearly trends since their construction. The NASA Foundation provided this data as part of their monitoring efforts. This secondary data serves as a foundation for understanding user behaviour, adoption rates, and operational challenges.

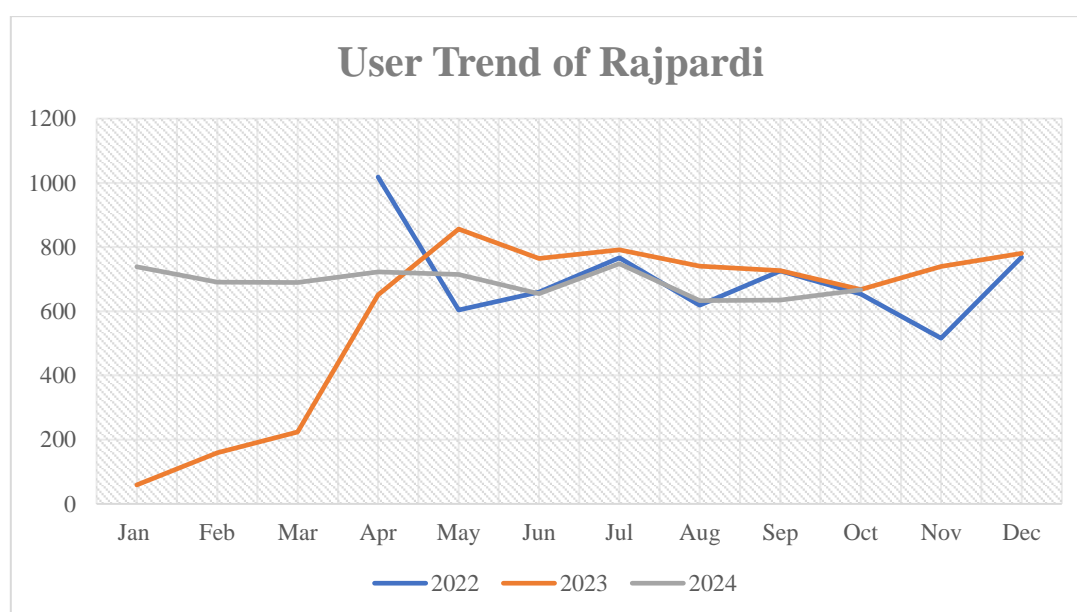
### 4.2 Usage Trends and Financial Data Analysis

#### 4.2.1 Usage Trends at Rajpardi

*Table 4.1: Number of users in Rajpardi, Bharuch*

Number of users (Rajpardi)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022				1018	604	660	766	619	725	654	516	768	6330
2023	59	159	224	651	856	764	791	740	726	668	739	780	7157
2024	738	691	690	722	714	655	748	633	635	667			6893
Total	797	850	914	2391	2174	2079	2305	1992	2086	1989	1255	1548	20380

*Source: NASA Foundation*



*Fig 4.1: Chart depicting the user trends of Rajpardi*



### Key Findings:

- **Yearly Growth:** The user base grew significantly between 2022 and 2023, with a total increase of 867 users.
- **Seasonal Peaks:** Usage spikes during the summer months (May to July), indicating a higher reliance on the facility during this period. For instance, May 2023 recorded 856 users, the highest monthly count.
- **Stabilization in 2024:** By 2024, monthly usage appears steady, averaging approximately 690 users. This trend suggests that the facility has become a consistent part of the community's daily life.

#### 4.2.2 Usage Trends at Mata Na Madh

Table 4.2: Number of users in Mata Na Madh, Kutch

Number of users (Mata Na Madh)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022				31	38	38	35	34	55	47	46	44	368
2023	777	665	850	194	177	179	188	327	115	237	157	168	4034
2024	148	127	140	148	130	104	118	110	118	128			1271
Total	925	792	990	373	345	321	341	471	288	412	203	212	5673

Source: NASA Foundation

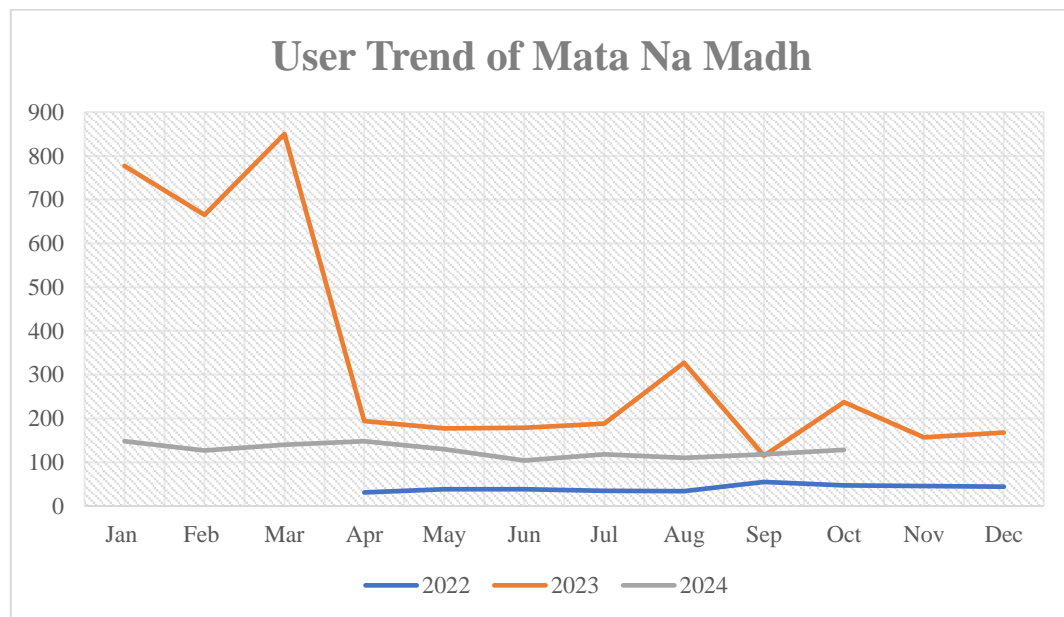


Fig 4.2: Chart depicting the user trends of Mata Na Madh

### Key Findings:

- **Slow Start in 2022:** The facility saw minimal usage initially, with only 31 users recorded in April 2022. This low adoption rate might indicate a lack of awareness or accessibility issues during the early phase.
- **Sharp Increase in 2023:** Usage surged dramatically in 2023, with the highest monthly count of 850 users in March.

- **Decline in 2024:** In contrast to Rajpardi, usage at Mata Na Madh declined in 2024, with an average monthly count of just 106 users. This decline raises concerns about operational or community-related challenges.

#### 4.2.3 Financial Data Analysis for Mata No Madh

This section introduces the financial data collected for the sanitation project in Mata No Madh, a key location for the Lignite Project in Kutch district. The data showcases recurring expenditures on caretaker honorariums, housekeeping supplies, and general maintenance of sanitation facilities. By assessing these expenses, we aim to understand the financial commitment required for maintaining high-quality sanitation services in a sustainable manner. The recorded expenses reflect a consistent financial commitment by GMDC-GVT, emphasizing the importance of maintaining high-quality sanitation services. In addition to maintaining operational stability, these recurring payments help GMDC-GVT's CSR objectives of advancing cleanliness and public health in underprivileged communities.

The overall expenditure on the sanitation facility showcases the following:

- **Caretaker Honorariums and Cleaning Supplies:** Payments are made regularly to ensure the facility remains well-maintained and hygienic, providing a positive user experience.
- **Sustainability of Operations:** The financial data demonstrates GMDC-GVT's structured approach to sustaining the sanitation facility as a reliable resource for truck drivers and community members.
- **Alignment with CSR Goals:** By prioritizing these recurring expenses, GMDC-GVT reinforces its commitment to community welfare and environmental stewardship.

The total observed expenditure, detailed in Appendix 4, illustrates the substantial financial investment required to maintain the sanitation facility over time. These consistent efforts highlight the organization's dedication to ensuring the project's long-term impact and viability.

#### 4.3 Comparative Analysis: Rajpardi vs. Mata Na Madh

*Table 4.3: Metric based comparison of Rajpardi and Mata Na Madh*

Metric	Rajpardi	Mata Na Madh
Total Users (2022-2024)	20,380	5,673
Peak Usage (monthly)	May 2023 (856 users)	Mar 2023 (850 users)
Lowest Usage (monthly)	Apr 2022 (31 users)	Multiple months in 2024 (104-148 users)

*Source: NASA Foundation*

### Key Findings:

- **Total Usage:** Rajpardi recorded a total of 20,380 users, nearly four times higher than Mata Na Madh's total of 5,673 users, indicating a disparity in facility adoption or need.
- **Peak Months:** Rajpardi sees consistently high usage in the summer months (May to July), while Mata Na Madh recorded its highest usage in early 2023.
- **Seasonality:** Both facilities show trends influenced by seasonal factors, with higher usage during warmer months, potentially due to increased water needs.

### 4.5 Summary

The quantitative analysis presented in this chapter sheds light on the usage patterns, trends, and challenges of the sanitation facilities in Rajpardi and Mata Na Madh over the years. We have discovered important insights regarding facility uptake and user behaviour by utilizing data from the NASA Foundation. The results open the door for focused interventions and enhancements by exposing the advantages and disadvantages of the sanitation programs that were put into place.

### Key takeaways:

- **Rajpardi:** The facility in Rajpardi has demonstrated consistent and growing usage, with seasonal peaks during the summer months. This illustrates how well the facility serves the community's sanitation needs and how well it integrates into everyday life. To maintain this tendency, however, ongoing upkeep and budget allocation are essential.
- **Mata Na Madh:** The steep drop in 2024 is concerning, even though the region demonstrated a strong growth phase in 2023. This decline calls for an in-depth investigation to understand the underlying causes, such as locked facilities, maintenance challenges, or reduced community engagement. Restoring user confidence and engagement can be facilitated by proactive steps like focused outreach campaigns and enhanced operating plans.
- **Comparative Analysis:** The stark difference in total users between the two locations highlights disparities in adoption, accessibility, or demand. While Rajpardi has emerged as a model for successful implementation, the challenges at Mata Na Madh emphasize the need for adaptive strategies tailored to the unique needs of each community.

This analysis underscores the importance of sustained monitoring, community engagement, and adaptive management in sanitation initiatives. Seasonal trends, infrastructure challenges, and user feedback should be systematically addressed to enhance the effectiveness of these facilities.

The insights from this chapter will serve as a foundation for the recommendations outlined in the subsequent chapter. By addressing the challenges and leveraging the successes identified here, the sanitation facilities in Rajpardi and Mata Na Madh can be optimized to better serve the needs of the communities they were designed for.

## Chapter 5 – Conclusion and Recommendations

### 5.1 Conclusions

In the districts of Bharuch (Rajpardi) and Kutch (Mata No Madh), the GMDC-GVT sanitation initiative is essential to advancing public health and hygiene among the local population, truck drivers, and transient workers. The project's free toilets reflects a sustainable approach to maintaining clean and accessible sanitation facilities, with recurring expenses allocated toward caretaker honorariums, housekeeping supplies, and general upkeep.

This report's thematic analysis revealed important details about the project's advantages and disadvantages. The project has attained a basic level of service in Bharuch, where there is just one sanitation centre that serves a large number of beneficiaries. However, obstacles including poor awareness, a lack of infrastructure, and impediments to accessibility keep the facility from completely satisfying the requirements of the community. Some community members and truck drivers are now dependent on open defecation due to the lack of various sanitation stations in strategic places, exposing a disconnect between project goals and practical implementation. The sanitation facility in Rajpardi has demonstrated significant growth in user adoption, with peak usage observed during the summer months. The steady usage trends in 2024 indicate that the facility has become a reliable resource for local residents and truck drivers. However, limitations such as inadequate infrastructure, low community awareness, and accessibility challenges persist. While the existing facility is well-maintained, the heavy reliance on a single centre necessitates expansion to better serve the growing demand. Additionally, a long-term plan would be beneficial to guarantee ongoing cleanliness and operational effectiveness, even though the current maintenance approach is adequate in the short term.

In Kutch, the feedback from truck drivers indicates that the sanitation facility at Mata No Madh is valued for its cleanliness and basic amenities by those who use it. But a lot of drivers didn't know the facility was for them, and they frequently thought officials were the only ones who could use it. Furthermore, the facility's single location and restricted operating hours make it difficult to reach, particularly for the numerous trucks that travel through each day. To support the facility's intended users, these findings highlight the necessity of focused awareness campaigns, operational adjustments, and additional infrastructure.

Although GMDC-GVT's sanitation initiative has improved sanitation and hygiene in these districts overall, resolving issues with infrastructure, accessibility, and awareness will be essential to maximizing its effectiveness.

## 5.2 Location-Specific Recommendations

### 5.2.1 Rajpardi, Bharuch

- **Expand Infrastructure with Additional Sanitation Centres:** The existing sanitation facility in Bharuch is insufficient to meet the needs of the high volume of truck drivers passing through the area. To enhance accessibility, additional sanitation centres should be strategically placed along major transit routes and within nearby village areas. Expanding the number of facilities will ensure that both the transient population and the local community have access to clean and functional toilets, reducing the dependence on open defecation.
- **Implement Awareness and Outreach Campaigns:** A significant number of community members remain unaware of the sanitation facility's existence. To bridge this gap, GMDC-GVT should initiate regular outreach programs aimed at raising awareness about the facility's availability, its purpose, and the hygiene benefits it provides. Informational signage at strategic locations such as bus stations, markets, and nearby settlements, as well as community engagement sessions led by local leaders or GMDC staff, can help inform the population and increase usage.
- **Improve Accessibility and Visibility:** Given the facility's remote location, it is essential to enhance its visibility through prominent signage along major roads and in nearby villages. These signs should direct users to the sanitation centre, making it easier for people to find and access the facility. Additionally, exploring mobile sanitation units could provide flexibility in areas where permanent infrastructure is not viable, allowing the project to reach even more underserved regions.
- **Establish a Consistent Maintenance and Monitoring Plan:** While the facility is well-maintained at present, it is critical to implement a structured maintenance plan that ensures long-term upkeep. This should involve local community organizations or municipal authorities in the monitoring process. Regular inspections, cleaning schedules, and the formation of a local maintenance committee can ensure that the facility continues to meet hygiene standards and remains in good working condition over time.

### 5.2.2 Mata No Madh, Kutch

- **Increase the Number of Facilities in High-Traffic Areas:** The existing sanitation facility at Mata No Madh serves a large number of truck drivers but is insufficient to meet the demand. The current facility, located at the mining area, sees between 800 to 1,000 trucks daily, which is a significant volume for a single sanitation centre. To better serve this high-traffic area, additional sanitation centres should be installed at key locations within the mining area and along major truck routes, ensuring that truck drivers have easy access to clean facilities throughout the day and night.

- **Enhance Facility Operational Hours:** The current hours of operation limit the accessibility of the sanitation facility, particularly for truck drivers working night shifts or those who start early in the morning. Extending the operational hours to a 24-hour schedule or at least longer operational hours will accommodate the diverse work schedules of truck drivers, ensuring that they have access to sanitation facilities at all times. This adjustment is vital for drivers who are unable to access the facility during traditional working hours.
- **Conduct Targeted Awareness Campaigns for Truck Drivers:** Many truck drivers are unaware that the sanitation facility is intended for their use, leading to underutilization. Awareness campaigns should target truck drivers specifically, informing them of the availability of the facility and encouraging its use. These campaigns can include the use of multi-language signage, information disseminated at transport hubs, and collaboration with local organizations to increase awareness among drivers.
- **Maintain High Standards of Cleanliness:** Users of the Mata No Madh sanitation facility have expressed satisfaction with its cleanliness and upkeep. To maintain this positive user experience, GMDC-GVT should continue to ensure high standards of cleanliness and hygiene. Expanding the cleaning schedule to coincide with extended hours would further enhance the user experience, especially if the facility operates 24 hours a day.

### 5.3 Overall Recommendations

- **Develop a Scalable Infrastructure Plan:** To effectively meet the needs of both local communities, truck drivers, and transient workers, GMDC-GVT should prioritize expanding its infrastructure beyond single-location centres in each district. A scalable approach would involve establishing multiple facilities across both Bharuch and Kutch, with a focus on high-traffic areas, residential neighbourhoods, and locations near workplaces. This expansion will ensure greater accessibility to sanitation facilities for a larger segment of the population.
- **Establish Comprehensive Awareness Programs:** Awareness campaigns should be an integral part of the project's strategy. These campaigns should be tailored to different user groups, such as truck drivers, workers, and community leaders. Targeted outreach efforts should include visual signage, printed brochures, and announcements at local community events. By ensuring that all potential users understand the facility's purpose and benefits, GMDC-GVT can increase usage rates and improve community engagement.
- **Standardize Maintenance Practices Across Locations:** Consistency in the maintenance of sanitation centres across different locations is crucial for ensuring a positive user experience. GMDC-GVT should implement a standardized maintenance plan that includes regular cleaning, facility inspections, and community feedback mechanisms to monitor the condition of each centre.

Standardizing these practices will contribute to uniform service quality and encourage users to continue relying on the facilities.

- **Introduce User Feedback Mechanisms:** Establishing a user feedback system is essential for gauging the effectiveness of the sanitation facilities. By placing suggestion boxes at each facility and conducting periodic surveys among users, GMDC-GVT can collect valuable feedback on service quality and areas for improvement. This feedback can be used to make necessary adjustments to both the facilities and the overall sanitation program.
- **Ensure Financial Sustainability Through a Dedicated Budget:** For the long-term success of the project, GMDC-GVT must allocate a dedicated budget for the maintenance, expansion, and awareness campaigns related to the sanitation initiative. A clear financial plan will ensure that the necessary funds are available for regular upkeep, cleaning supplies, infrastructure expansion, and outreach activities, thereby supporting the consistent quality of service.
- **Evaluate and Monitor Project Impact Regularly:** A structured evaluation and monitoring system should be put in place to assess the project's impact over time. GMDC-GVT should identify key performance indicators (KPIs), such as usage rates, community satisfaction levels, and the cleanliness of facilities, to measure the success of the initiative. Regular evaluations will help identify areas where improvements are needed and enable data-driven decisions to enhance the overall effectiveness of the sanitation program.

A thorough assessment of the GMDC-GVT sanitation effort and specific suggestions for its improvement are provided in this chapter. In Bharuch and Kutch, the project has made great progress in establishing easily accessible sanitary facilities, and improving public health and cleanliness for both truck drivers and temporary workers. However, the project has not been able to fully address the needs of its intended beneficiaries due to restrictions like inadequate infrastructure, low awareness, and accessibility issues. Location-specific recommendations for Rajpardi include expanding infrastructure, enhancing visibility through better signage, and conducting awareness campaigns to increase usage. For Mata No Madh, extending operational hours, adding more facilities, and launching targeted outreach efforts for truck drivers are critical steps to address existing gaps. The chapter also provides overall recommendations for ensuring long-term success, such as creating a strategy for scalable infrastructure, standardizing maintenance practices, and establishing systems for user feedback.

The GMDC-GVT sanitation initiative has made significant strides in improving public health and hygiene in Bharuch and Kutch. By addressing current gaps and implementing the recommendations in this chapter, the project can become a model for sustainable sanitation efforts. With a commitment to continuous improvement and active stakeholder engagement, GMDC-GVT can set a benchmark for future CSR-driven sanitation projects, showcasing how targeted investments and community-focused strategies can deliver lasting benefits in health, dignity, and quality of life.

## **Bibliography**

*Gujarat Mineral Development Corporation Ltd.* [www.gmdcltd.com/](http://www.gmdcltd.com/). Accessed 1 Dec. 2022.

*“Home - GVT.”* GVT, 16 Sept. 2024, [gmdcgvvt.org/](http://gmdcgvvt.org/). Accessed 12 Nov. 2024.



# Appendix

## 1. Quarterly Reports from NASA Foundation

### 1.1 Rajpardi



Quarterly report Rajpardi.pdf

### 1.2 Kutch



Quarterly report Mata no madh.pdf

## 2. Number of users data

Number of users (Rajpardi)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2022				1018	604	660	766	619	725	654	516	768	6330
2023	59	159	224	651	856	764	791	740	726	668	739	780	7157
2024	738	691	690	722	714	655	748	633	635	667			6893
Total	797	850	914	2391	2174	2079	2305	1992	2086	1989	1255	1548	20380
Number of users (Mata Na Madh)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
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2023	777	665	850	194	177	179	188	327	115	237	157	168	4034
2024	148	127	140	148	130	104	118	110	118	128			1271
Total	925	792	990	373	345	321	341	471	288	412	203	212	5673

## 3. Questionnaire for the implementing agency

### Introduction:

**Facilitator's Opening Remarks:** Welcome the participant and introduce the purpose of the interview. Explain that the goal is to gather insights into the sanitation project implemented by NASA Foundation, with a focus on the operational, community engagement, and maintenance aspects of the facilities in Bharuch and Kutch districts. Emphasize that their feedback is crucial for understanding the project's current impact and identifying potential improvements to enhance community access to sanitation services.

**Participant Introduction:** Please introduce yourself by stating your name, role in the sanitation project, and any specific responsibilities related to the project implementation in Bharuch or Kutch.

### Section 1: Overview of the Sanitation Project

#### 1. Could you briefly describe the sanitation scheme and its main objectives?

- *Follow-up: Do you think the objectives have been effectively communicated to the community?*

#### 2. How long has the project been operational, and are there specific phases of implementation?

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## Section 2: Project Design and Implementation

3. What were the main objectives NASA Foundation aimed to achieve with this sanitation project?
  4. How were locations for the sanitation centres chosen?
- 

## Section 3: Operations and Maintenance

5. What is the process for maintaining and cleaning the facilities?
  6. How frequently are maintenance activities conducted?
  7. Some truck drivers reported that the toilets were sometimes locked. Could you provide insight into why this occurs and if there are plans to address it?
- 

## Section 4: Community Engagement

8. How does NASA Foundation inform the community about the facility?
  9. Is there a way for users to provide feedback on the facilities?
- 

## Section 5: Challenges and Adaptations

10. What major challenges has NASA Foundation faced in implementing or maintaining the project?
  11. Have any changes been made in response to these challenges or user feedback?
- 

## Section 6: Impact and Success Stories

12. What positive changes have you observed in the community since the project began?
  13. Are there any success stories or examples of significant project impact?
- 

## Section 7: Sustainability and Future Plans

14. What steps are being taken to ensure the project's long-term sustainability?
  15. Are there any plans to expand or improve the facilities?
- 

## Facilitator's Closing Remarks:

- Summarize the key points discussed during the interview.
- Thank the participant for their valuable insights.
- Explain how their feedback will contribute to improving the Sanitation project.

#### 4. Expenditure Summary for Sanitation Project at Mata No Madh:

The table below lists monthly and periodic expenses incurred for the operation and maintenance of the sanitation centre at Mata No Madh, Kutch, from 2021 through 2024.

Lignite Project Mata No Madh					
SR. NO.	CONCERNED PROJECT	NATURE OF PAYMENT	EXPENSE HEAD	Payment	PAYMENT DATE
1	Mata No Madh	Care taker honorarium for july-2021 and cleaning materials for house keeping	SANITATION	₹ 12,388.00	06-05-2022
2	Mata No Madh	Care taker honorarium for august-2021 and cleaning materials for house keeping	SANITATION	₹ 12,388.00	06-05-2022
3	Mata No Madh	Care taker honorarium for march-2022 and cleaning materials for house keeping	SANITATION	₹ 12,388.00	21-05-2022
4	Mata No Madh	Care taker honorarium for-june 2022 and cleaning materials for house keeping	SANITATION	₹ 13,247.00	22-08-2022
5	Mata No Madh	Care taker honorarium for-may 2022 and cleaning materials for house keeping	SANITATION	₹ 13,384.00	22-08-2022
6	Mata No Madh	Care taker honorarium for-april 2022 and cleaning materials for house keeping	SANITATION	₹ 13,259.00	22-08-2022
7	Mata No Madh	Care taker honorarium for aug-2022 and cleaning materials for house keeping	SANITATION	₹ 13,056.00	14-10-2022
8	Mata No Madh	Care taker honorarium for july-2022 and cleaning materials for house keeping	SANITATION	₹ 13,141.00	20-10-2022
9	Mata No Madh	Care taker honorarium for sept-2022 and cleaning materials for house keeping	SANITATION	₹ 13,206.00	20-10-2022
10	Mata No Madh	Care taker honorarium for nov-2022 and cleaning materials for house keeping	SANITATION	₹ 13,476.00	19-12-2022

11	Mata No Madh	Care taker honorarium for dec-2022 and cleaning materials for house keeping	SANITATION	₹ 13,498.00	21-01-2023
12	Mata No Madh	Care taker honorarium for jan-2023 and cleaning materials for house keeping	SANITATION	₹ 13,530.00	27-02-2023
13	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,375.00	25-Apr-23
14	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,440.00	25-Apr-23
15	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,219.00	08-May-23
16	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,330.00	20-May-23
17	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 38,561.00	02-Aug-23
18	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	08-Sep-23
19	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	13-Oct-23
20	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	18-Nov-23
21	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	24-Jan-24
22	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	21-Mar-24
23	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	21-Mar-24
24	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	29-Apr-24
25	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	27-Aug-24
26	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	27-Aug-24
27	Mata No Madh	Toilet Operation & Maintanance Exp	SANITATION	₹ 13,552.00	27-Aug-24