# Impact Assessment of MDL CSR Project in Sanitation Sector (2019-20)

Prepared for
CSR Cell
Mazagon Dock Shipbuilders Limited
Mumbai-400 010









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# Abbreviations

43.50	
AMC	Annual Maintenance Contract
CO	Chief Officer
CPSE	Central Public Sector Enterprises
CSR	Corporate Social responsibility
DPE	Department of Public Enterprises
DWT	Deadweight tonnage
FCO	Fertilizer Control Order
FGD	Focus Group Discussion
FSTP	Faecal Sludge Treatment Plant
KII	Key Informative Interview
MC	Municipal Corporation
MDL	Mazagon Dock Shipbuilders Limited
MoU	Memorandum of Understanding
MPCB	Maharashtra Pollution Control Board
MSW	Municipal Solid Waste
MT	Metric Tonnes
NP	Nagar Panchayat
ODF	Open defecation free
RDF	Refused Derived Fuel
SBA	Swachh Bharat Abhiyan
SEED	Society for Educational Welfare and Economic Development
SWM	Solid Waste Management
SLWM	Solid and Liquid Waste Management
STP	Sewage Treatment Plant
TERI	The Energy and Resources Institute
ULBs	Urban Local Bodies



# **Executive Summary**

Mazagon Dock Ship builders Limited (MDL), Mumbai, an ISO 9001: 2008 Company is one of the leading Defence Public Sector Undertaking ship building yard under the Ministry of Defence, Government of India. As per the CSR Act, MDL is also committed to undertake various programs for integrating social and business goals in a sustainable manner to create social impact through inclusive growth and to bring about positive impact on people and society at large.

In 2019-20, MDL had taken up project to support Swachh Bharat Mission of India with 100 percent investment from MDL, namely Mechanisation of five Urban Local Bodes (ULBs) in Nandurbar District, Maharashtra. The specific objective of the project was to improve the solid and liquid waste management in five ULBs of Nandurbar district through the provision of dust bins to households to segregate waste at source, machinery/ equipment for better waste management and mobile toilets for ODF near melas and function areas. The Energy and Resources Institute (TERI) was assigned the task of assessing the effectiveness and impact of these projects on the target groups.

The impact assessment of the CSR initiatives was carried out using a multi-dimensional approach. The process included secondary data collection and analysis, primary data collection using methods that were appropriate for the initiative and field conditions such as survey, key informant interviews and focus group discussions. Despite the COVID 19 pandemic, utmost effort was made to personally interact with various stakeholders like beneficiaries, officers of MDL, implementing agency, Government officials, operators of machineries etc. to obtain their views and opinions on the utility of the initiative, its impact and suggestions for future initiatives.

The project Mechanisation of 5 ULBs in Nandurbar district, the physical achievement of this component is 100 % while the financial achievement is 84%. The lower financial achievement is due to the post commercial procedure target which was revised and also MDL has received tax credit on revised financial target. Therefore only 84% of the project cost was finally booked as project expenditure.

Dustbins for Waste Segregation: MDL has supported the purchase of dustbins which benefitted 25,500 households in Navapur (8,000 houses), Taloda (4,000 houses), Shahada (10,000 houses) and Dhadgaon (3500 houses). Each household has received 2 dustbins (1 green & 1 Blue) Cello make with capacity of 10 litres. The dust bins have been effective in educating the importance of waste segregation at source to all the households and nearly 70-80% of the households are following the practice regularly. This has reduced work load at the waste segregation area. Recyclable dry waste is sold to the scrap dealers and the remaining dry and wet waste is dumped after treatment at the dumping yard.

Three Road sweepers in Nandurbar (2) and Navapur (1): The purpose of procuring 3 sweeper machines was to clean the broader roads in a short time and to reduce man power usage. The machine was used for some time initially, but due to technical problem these machines are not used for long time. MDL Project was limited to procurement of machinery only but not AMC component, during proposal submission itself AMC was not involved by ULBs, because ULBs have its own arrangement for AMC for all the vehicles. During meeting ULBs assured to make AMC contract with supplier shortly to fix the problem and reuse the



machines. If problem is not solved, other option may be other ULBs with in the same district can get it repaired so that they will get equipment to use in their ULBs.

Vacuum emptier machine for clearing clogged drains in Taloda, Shahada and Dhadgaon: These machines have attended 460 complaints (total all) and it is estimated that this vehicle has saved Rs 16.56 lakhs (460 services X Rs.3600/service) to the public since commissioning of the machine. The vehicle in Taloda and Shahada travelled a distance of 1780km & 4424 km respectively. In Dhadgaon the machine will be operated by using a hired tractor.

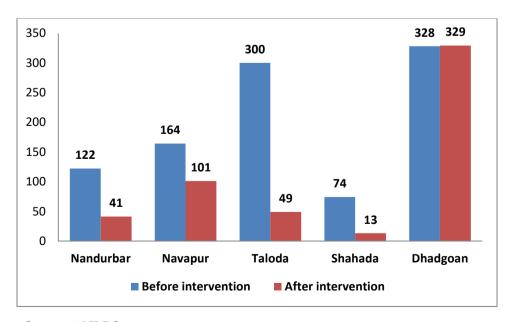
*Machine for drain and pipe cleaning at household level in Taloda:* This is a free service to public. This machine has attended 10 complaints and it is estimated that this machine has saved Rs 10000 (10 services X Rs 1000/service) to the public.

One mobile toilet in Taloda and Shahada: The Mobile toilets have been effective in avoiding urination and defecating in the open during events, thus maintaining hygienic surroundings at the event location. ULBs provided mobile toilets to 47 functions (total all) and it is estimated that the mobile toilets has saved Rs 47000 (47 services X Rs 1000/service) to the public.

Four Ghanta Gadi (Auto Tipper with segregated compartment) in Dhadgaon: The Ghanta Gadies have been using very effectively since from the beginning. Every day these vehicles transport two batches of waste, approximately 1.2 tonne of dry waste and 0.4 tonne of wet waste. These 4 vehicles have saved around Rs 50000 per month. Earlier the Nagar Panchay at was paying Rs 1 lakh/month to the contractors for collecting garbage from the city.

MDL's intervention has aided in improving the solid and liquid waste management in 5 ULBs. With respect to Swachh Survekshan ranking it was observed that MDL's intervention has contributed to change the ranking of Nandurbar district as a whole and also contributed to better ranking of the other 4ULBs along with other interventions.

The figure below provides Swachh Survekshan ranking before and after (2018 & 2020) the MDL intervention.



Source: 5 ULBS



The machinery and dustbins provided are being used and the ULB stated that they can sustainably operated the same. In Nandurbar and Navapur, the sweeper machine has been kept idle due to technical issues. Therefore ULB authorities, MDL and machine supplier should discuss the problem and execute a solution to resume functioning of the machine. In Shahada, two more mobile toilets could be provided to avoid open defecation and urination at public events and melas since the demand is high. In Dhadgaon Nagar Panchayat, officials put forth the need for one tractor for pulling the vacuum emptier machine, bigger dust bins (20 litre capacity) – 50 nos, Ghanta Gadhi of bigger capacity – 2nos (5 m3) and Road sweeper machine (tractor fitting small capacity)

In terms of facilitating better waste management in ULBs, in each of the ULB wet waste ranging from 250 kgs to 2000 kgs is available per day which is currently being dumped. There is a potential for installing Bio-methanation plants for generating Biogas energy (either for Thermal/ Power) from the wet waste.

MDL has invested in activities that are useful to the larger public. The impact has been significant in terms of educating the public about the importance of segregating waste at source and they have been motivated to follow it by providing separate dust bins. Investing in expensive machinery for waste management at ULBs was a well-intended activity. The drainage clearing machines are being put to full use and has contributed to a more hygienic environment through timely troubleshooting. However, lack of proper technical support and trained support has rendered the road sweeping machines idle. Overall the investment in waste management, sanitation and hygiene has been in the right spirit.



# 1 Introduction of the specific project

#### 1.1 Corporate Social Responsibility in Swachh Bharat Abhiyan

Corporate Social Responsibility (CSR) is a concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives ("Triple-Bottom-Line-Approach"), while at the same time addressing the expectations of shareholders and stakeholders. A properly implemented CSR concept can bring along a variety of competitive advantages, such as enhanced access to capital and markets, increased sales and profits, operational cost savings, improved productivity and quality, efficient human resource base, improved brand image and reputation, enhanced customer loyalty, better decision making and risk management processes.<sup>1</sup>

CSR in Indian context became a more serious discussion after the introduction of Section 135 of the Companies Act, 2013. Interestingly, irrespective of this recent regulation, the practice of CSR is particularly not very new to the Indian Public Sector Undertakings (PSUs) as they have been practicing CSR both morally and statutorily under the Guidelines on Corporate Governance for Central Public Sector Enterprises, 2010 (issued by the Department of Public Enterprises). Thus, PSUs clearly have an added experience and advantage over other private companies in terms of CSR compliance.<sup>2</sup>

Undoubtedly, sanitation stands as one of the national priorities as it has been enshrined as UN SDGs and also India's 60% population doesn't have access to clean sanitation facilities. The Swachh Bharat Abhiyan (SBA) is devised to tackle this problem on a war footing to free India from open defecation by 2020<sup>3</sup>. It is a movement to provide comprehensive sanitation planning, behavioural changes in people and explore private partnership in the goal accomplishment and rehabilitate manual scavengers. The Indian government has identified corporates and PSUs and the civil society as the crucial link in executing and facilitating this development goal<sup>4</sup>.

It is estimated that Rs 1.96 lakh crore will be required to make rural India Open Defecation Free (ODF). It is a fully subsidized project with zero beneficiary contribution. The government envisages a big role for CSR in the SBA (Grameen). The defined areas of interventions leave ample scope for the corporate sector to innovate and undertake a range of activities under CSR. To improve the sanitation facilities, seven key mission objectives have been identified. They are: (1) open defecation elimination; (2) manual scavenging eradicating; (3) scientific solid waste management; (4) to bring behavioural changes related to healthy sanitation; (5) awareness about sanitation and public health dissemination; (6) capacity building of urban local bodies (ULBs); and (7) to promote private participation in CAPEX (capital expenditure) and OPEX (operation and maintenance) model.

<sup>&</sup>lt;sup>4</sup> Lawania, Beena & Kapoor, Shikha. (2018). Leveraging Corporate Social Responsibility for the advancement of Development Goals in India: Sanitation and Cleanliness Movement in India. AABFJ. 12. 10.14453/aabfj.v12i2.4.



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 $<sup>^{1}\</sup> https://www.unido.org/our-focus/advancing-economic-competitiveness/competitive-trade-capacities-and-corporate-responsibility/corporate-social-responsibility-market-integration/what-csr$ 

<sup>&</sup>lt;sup>2</sup> Pandey, Pooja. (2015). Status of Corporate Social Responsibility among PSUs in India 10.13140/RG.2.1.4368.0240.

<sup>&</sup>lt;sup>3</sup> Bhaumik Sukanya, Corporate Social Responsibility in Swachh Bharat Mission, April 28<sup>th</sup> 2021 in https://csrlive.in/corporate-social-responsibility-in-swachh-bharat-mission/

#### 1.1 Swachh Bharat Abhiyan in MDL

Mazagon Dock Shipbuilders Limited (MDL) is committed to undertake various programs for integrating social and business goals in a sustainable manner to create social impact through inclusive growth activities to bring about impact on people and society at large. MDL is committed to continue with its socio-economic, developmental activities to bring about visible impact in people in particular and society at large.<sup>5</sup>.

As per the Union Ministry for Drinking Water and Sanitation report, out of 37 districts in Maharashtra 34 are declared as Open Defecation Free (ODF) Districts (Annual report 2018-19)<sup>6</sup> Under Swachh Bharat Abhiyaan since 2014, Maharashtra has built 50.8 lakh individual toilets across 34000 villages, thus making them ODF villages for the last three years (India Today)<sup>7</sup>. All urban areas in the State have been declared as ODF.

Solid and Liquid Waste Management (SLWM) is another important need for households in villages and urban areas. Solid Waste Management is the process of collecting waste from sources like households, industries, markets, roads and other places, which are then segregated, treated and disposed, whereas liquid waste is discharged outside from villages or cities through drainage with or without treatment. Maharashtra state is one of the highest urbanized states with nearly 50% population residing in urban areas. Currently almost 98.85% of the solid waste generated is collected from 387 Urban Local Bodies (ULBs) and 5 Cantonment Boards and 70% of waste is being treated scientifically.

MDL CSR funds for sanitation sector: From last 5 years MDL has spent an average 20% of CSR funds for sanitation sector, Nearly Rs 245 lakh to 570 lakh annually has been spent for sanitation activities, like toilets constructions for schools, communities and individual households, carrying out cleanliness drives in around MDL, clean ship around MDL, mechanisation of ULBS, improving hygiene condition at schools, flood relief works, supply of garbage bins, contribution to Swachh Bharat Kosh of Govt. of India, and Clean Ganga Fund of Govt. of India –etc. The below figure shows the funds share for sanitation sector from total CSR funds.

<sup>8</sup> https://www.mpcb.gov.in/sites/default/files/solid-waste/msw\_annual\_report\_2019\_202003082020.pdf

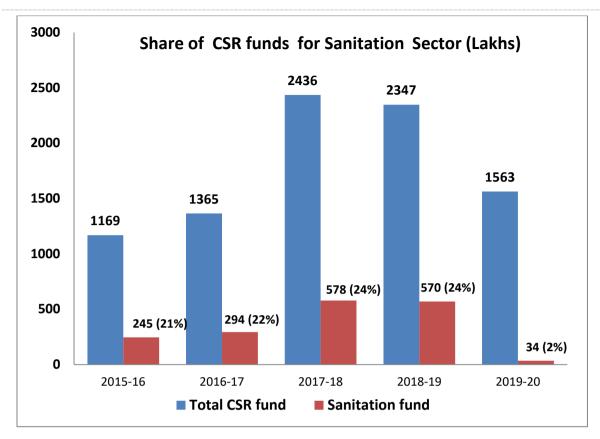


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 $<sup>^{5}\</sup> https://mazagondock.in/writereaddata/pdf\_doc/CSR\_SD/CSR\_BOOKLET\_2016.pdf$ 

<sup>6</sup> https://jalshaktiddws.gov.in/sites/default/files/Annual\_report\_2018\_19\_dws.pdf

<sup>&</sup>lt;sup>7</sup> https://www.indiatoday.in/india/story/union-report-says-84-percent-of-maharashtra-is-open-defecation-free-1146407-2018-01-15



Source: MDL CSR Cell

MDL has implemented Sanitation project under Swachh Bharat Abhiyan in Nandurbar district in Maharashtra. Name of the project is:

i) Mechanization of Five Urban Local Bodies (ULBs) at Nandurbar district

The Energy and Resources Institute (TERI) has been assigned the task of impact assessment of the above project.

#### 1.2 Objective of the Study

The main objective of the impact assessment study was to assess the direct and indirect impact on target groups, community within and outside of the periphery of the MDL project area, document any shortfall in the program which hampered the progress in implementation and also to come out with required corrections for the future. The specific objectives of the study were:

- To study the direct / indirect impact of MDL's CSR projects on the lives of communities / people within the periphery of MDL project areas and other locations
- To study direct/indirect impact of MDL's CSR projects on other target groups, locality and environment



- To evaluate the level of awareness of CSR projects / initiatives amongst the target beneficiaries / concerned stakeholders
- To know the consistency in the process of project implementation together with fulfilment of stated objectives.
- To identify the gaps in the project identification, beneficiary's involvement, implementation of projects and recommendations for improvements.
- To recommend continuation/discontinuation/expansion of scope of the project.



# 2 Details of the specific CSR project

#### 2.1 Project proposal themes and area covered

As per the CSR Act, MDL has undertaken various programs for integrating social and business goals in a sustainable manner to create social impact through inclusive growth and to bring about positive impact on people and society at large.

One of the important theme selected by MDL is Sanitation. Government of India is putting in great efforts to cover basic sanitation for all citizens by constructing toilets and implementing systems for solid and liquid waste management, such as solid waste collection, segregation at source, recycling and utilising wet waste for biogas generation and producing vermin compost, and treating liquid waste before letting into the drainage.

MDL had signed a MoU with Ministry of Drinking Water and Sanitation for about 5 years from 2014-2015 to implement sanitation projects under CSR funds. As per the advisory of the Department of Public Enterprises, GoI, MDL has allotted 33% of CSR funds for implementing projects of Swachh Bharat Mission. In this regard MDL has undertaken the project - Mechanisation of 5 ULBs in Nandurbar District in Maharashtra. The project was started in 2019 with a target to complete the implementation by 2020.

#### 2.1.1 Mechanisation of 5 ULBs in Nandurbar District at Maharashtra

As mentioned in the earlier section, MDL has selected Nandurbar district based on the guidelines of the Department of Public Enterprises (DPE) for Development of Aspirational Districts by Central Public Sector Enterprises (CPSEs) under Corporate Social Responsibility (CSR)9. This project was implemented based on the need assessment, detailed discussions with District Commissioner Nandurbar, Government Officers of Municipal councils and other stakeholders. The District Administration is keen to improve the sanitation services including household waste collection/disposal, drainage cleaning, and open defecation free zones. To strengthen Solid and Liquid Waste Management at ULBs level, MDL has implemented the project Under Swachh Bharat Abhiyaan, in 5 ULBs of Nandurbar district, namely Nandurbar Municipal Council (MC), Shahada MC, Taloda MC Navapur MC and Dhadgaon Nagar Panchayat. Based on the proposal submitted by the Collector's office Nandurbar, MDL has approved and provided financial support for the project and it was implemented through different ULBs. A copy of the proposal is enclosed in **Annexure -1**.

#### 2.2 Target population

#### 2.2.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

To meet the objective of managing and reducing waste in the 5 ULBs, MDL has provided different cleaning equipment and 51000 dustbins (two per family, i.e. one for wet waste and one for dry waste) were distributed to 25500 households in 3 ULBs and one Nagar Panchayat. The focus was given to manage overall solid and liquid waste management,

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 $<sup>^9\</sup> https://dpe.gov.in/csr/csr/development-aspirational-districts-cpses-under-csr$ 

therefore cleaning equipment along with the dustbin were distributed. The usage of the equipment has indirectly benefitted all the 74,872 households comprising 3,79,608 people in the five ULBs.

#### 2.3 Financial outlay

#### 2.3.2 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

As per the information provided by MDL, all the project activities have been completed as per plan during 2018-19 & 2019-20 including supplying of all the machineries, and mini vehicles for collection and transportation of waste. The financial details are given in Table 2.1.

Table 2.1: Financial target and achievement

SN	Estimated Project Cost	Revised Project Cost (Post tendering)	Tax Credit to MDL	Actual Project Cost Booked					
1	209.50	194.28	29.72	164.56					
All figures in Rs. Lakhs									

Source: CSR Team, MDL

Initial financial target was Rs 209.50 lakhs, and further due to post commercial procedure the financial target was revised to Rs 194.28 lakhs. MDL has received Rs 29.72 lakh as tax credit on revised financial target, therefore Rs.164.56 lakhs, i.e. 84.7% was finally booked as project expenditure. This expenditure was made in two years, i.e. in FY 2018-19 an amount of Rs.110.71 lakhs and in FY 2019-20 amount of Rs.53.85 lakhs was booked as direct expenditure under the project. This project has been implemented with 100% contribution by MDL. The ULBs finalised the tender process to buy machineries and other items, and MDL paid the amount to the vendor.

#### 2.1 Implementation approach

#### 2.3.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

MDL has selected this district based on the guidelines of the Department of Public Enterprises (DPE) for Development of Aspirational Districts by Central Public Sector Enterprises (CPSEs) under Corporate Social Responsibility (CSR) <sup>10</sup>. Prior to the MDL intervention, this district was ranked 140th rank as per the Swachh Survekshan 2018 and 2019. After MDL project intervention it reached 41st rank in Swachh Survekshan 2020<sup>11</sup>. This project was implemented based on the need assessment, detailed discussions with District Commissioner, Nandurbar, Chief Officers of Municipal councils and other stakeholders. The District Administration was keen to improve the sanitation services including household waste collection/disposal, drainage cleaning, and open defecation free zones.

To strengthen Solid and Liquid Waste Management at ULBs, MDL has implemented the project Under Swachh Bharat Abhiyan, at 5 ULBs of Nandurbar district, namely Nandurbar

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<sup>10</sup> https://dpe.gov.in/csr/csr/development-aspirational-districts-cpses-under-csr

<sup>11</sup> http://www.swachhsurvekshan2020.org/Rankings/Morethan1Lakh?category=1L-10L

Municipal Council (MC), Shahada MC, Taloda MC Navapur MC and Dhadgaon Nagar Panchayat.

Implementation process was very simple, After internal discussion of Chief Officers of 5 ULBs, it was decided to distribute two dustbins (10 litre capacity) to each household, green colour for wet waste and blue colour for dry waste in four ULBs – Navapur, Taloda, Shahada and Dhadgaon. The team also decided to use different cleaning equipment's for managing the waste generated in five ULBs. Based on the need of 5 ULBs, Nandurbar Collector's Office submitted the proposal (list of machinery with cost) to MDL. The ULBs finalised the tender process to buy machineries and other items, and MDL paid the amount to the vendor. The dustbins were distributed to the households and the machineries were used for road sweeping, clearing blocked drain lines and septic tanks, avoiding open defecation, solid waste collection-etc. The ULBs took the responsibility for day to day operation, repair and maintenance of machineries.

#### 2.2 Implementation agency

#### 2.3.2 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

This project was spearheaded by the District Collector, Nandurbar and the intervention was implemented in four Municipal councils and one Nagar Panchayat. Name of the councils are given below.

- 1) Nandurbar Municipal Corporation
- 2) Taloda is a Municipal Corporation
- 3) Navapur Municipal Corporation
- 4) Shahada Muncipal Corporation
- 5) Dhadgaon Nagar Panchayat

#### 2.3 Extracts of MOU

#### 2.3.3 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

Based on the need assessment and discussion with CSR MDL team, a Proposal (one sheet) was submitted by the Collector's Office, Nandurbar. The proposal had details of items required by Municipal Councils (MCs) / Urban Local Bodies (ULBs) of Nandurbar district. The details of items mentioned in the proposal are given in Table 2.2

Table 2.2: Number of Machineries and items mentioned by Collector office in the proposal

Sr. No.	Name of Council	Equipment/ Machines	Estimated Cost (In Rs. Lakhs)
1.	Nandurbar Municipal council	A. Road Sweeper Machine -2 Nos (Ashok Leyland DOST Chassis)	49.00
2.	Shahada Municipal	A. Vacuum Emptier Machine (Truck Based) – 1 Nos <b>(7 Ton GVW TATA model 709 chassis)</b>	15.00
	council	B. Mobile Toilet (10 Seats) (ASIAN ENTERPRISES 1000 lt)	9.00



Sr. No.	Name of Council	Equipment/ Machines	Estimated Cost (In Rs. Lakhs)
		C. Dustbins – 20000 Nos	20.00
		(10 litres Volume Nilkamal Make/ equivalent)	
3.	Navapur	A. Road Sweeper Machine -1 Nos	24.50
	Municipal	(Ashok Leyland DOST Chassis)	
	council	B. Dustbins – 16000 Nos	16.00
		(10 litres Volume Nilkamal Make/ equivalent)	
4.	Taloda	A. Vacuum Emptier Machine (Truck Based) – 1	15.00
	Municipal	Nos (7 Ton GVW TATA 709 chassis)	
	council	B. Dustbins – 8000 Nos (10 litres Volume	8.00
		Nilkamal Make/ equivalent)	
		C. Kamrodder Machine for Drain and pipe	5.00
		cleaning – 1 Nos.	
		(KAMRODDER 5.5DP diesel Engine)	
		D. Mobile Toilet (10 Seats)	9.00
		(ASIAN ENTERPRISES 1000 lt)	
5.	Dhadgaon	A.Vacuum Emptier Machine (Tractor Based) – 1	7.00
	Nagar	Nos	
	Panchayat	(INFINITY Enterprises 5000 ltr cap)	
		B. Ghanta Gadi (Auto Tipper with segregated	25.00
		compartment - 4 Nos.	
		(Garbage Tipper TATA model 3.2Cu mt	
		Capacity)	
		C. Dust bins – 7000 Nos (10 litres Volume	7.00
		Nilkamal Make/ equivalent)	800 F0
		Total	209.50

#### 2.4 Expected impact/outcome

#### 2.4.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

The two major expected impacts of this initiative was that it will create awareness among citizens about importance of waste segregation at source and they will take action for the same with the dustbins provided. The machineries were intended to ensure a cleaner city/town through better waste management, waste collection, avoiding open defecation in public during gatherings and clearing clogged drains in a timely manner.



# 3 Approach, Methodology and Impact Parameters adopted for impact assessment

The impact assessment of the CSR initiatives was carried out using a multi-dimensional approach. The process included secondary data collection and analysis, primary data collection using methods that were appropriate for the initiative and field conditions. Despite the COVID 19 pandemic, utmost effort was made to personally interact with stakeholders like officers of MDL, implementing agency, Government officials, beneficiaries, operators of machineries etc. to obtain their views and feedback on the usefulness of the initiative, its impact and suggestions for future initiatives.

#### 3.1 Collection of secondary data

Secondary data such as list of beneficiaries, project location and profile, list of machineries and items supplied and other related details were collected from MDL and implementing agencies using a check list. The data collected was compiled and fine-tuned for field work. Data on physical and financial achievements were also collected from the MDL CSR team. Further a brief on the need assessment for mechanisation of ULBs of Nandurbar was also collected to understand the project need.

#### 3.2 Collection of Primary data

Primary data was collected at different levels like individual beneficiary, implementing partners, MDL CSR team, government officials and other stakeholders. Both quantitative and qualitative methods were adapted to generate desired information from the respondents. The following methods were adopted for primary data collection:

- i. Survey
- ii. Key Informant Interview (KII)
- iii. Focus Group Discussion (FGD)

**Survey:** For the survey, an interview schedule based on the relevant objectives and scope of the work listed in the ToR was developed and administered at the individual beneficiary level. Interview schedule having open and close-ended questions was used. Questions were carefully constructed to elicit correct and detailed information from the respondents at the same time giving them freedom of choice.

**Key Informant Interview (KII):** This is a qualitative research method in which data is collected with active participation of stakeholders. This exercise was administered to elicit the views of the implementing agencies, MDL CSR team, and government officers to elicit their views, experiences, problems, possible solutions, suggestions to improve the programme.

**Focus Group Discussion (FGD):** Focus group discussions were conducted by gathering beneficiaries who received dustbins for managing waste at household level to get their feedback on the usefulness of dustbins in waste management.



#### 3.3 Tools used for data collection

The following tools were formulated for each of the above methods and also to ensure participation of all groups of stakeholders in the study.

- i. Key Informant Interview schedule: An interview schedule was prepared to interview stakeholders like MDL officers, ULB officers, implementing agencies, and other stakeholders, for collection of information on machineries usage, benefits, labour saving, operation and maintenance mechanism, advantages, impact, constraints, recommendations, etc.
- ii. Checklist for Focus Group Discussion: A checklist was developed to conduct one FGD in 3 ULBs for understanding the level of acceptance and utilisation of dustbins for managing waste at household level by the beneficiaries.

#### 3.4 Sampling Techniques

The sampling technique adopted for the study is described below:

#### Mechanization of Five ULBs at Nandurbar

MDL has implemented the project in 5 ULBs, hence all 5 ULBs were visited to get the information. One FGD was conducted in 3 ULBs for understanding the level of acceptance and optimum utilisation of dustbins. Key informant interviews were conducted with chief officers, project implementing staff and equipment operators. The table 3.1 provides details of the sample size:

**Table 3.1: Details of Sample Size** 

SN	Project	Data collection tool	Category	Sample size (Nos)
1	Mechanization	Key Informant	Officers ULB	10
	of Five ULBs at Nandurbar	Interview	Officers MDL	3
		Focus group Discussion (FGD)	Beneficiary groups (10 to 20 members in a group) in 3 ULBs	25
			Total	38



# 4 Project Level findings, including survey reports and fund utilisation

#### 4.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

#### 4.1.1 Findings and analysis

The results and impact of the project are derived based on discussions held with officers from 5 ULBs, machinery operators, dustbin users and MDL CSR team. FGDs were conducted with dustbin users at Navapur and Shahada and individual interviews were held in Taloda and Dhadgaon.

This project was implemented in 5 ULBS of Nandurbar district, and TERI team visited all the 5 ULBs and observed the functionality and usage of the machineries provided. The findings from each ULB are given below.

#### 4.1.2 Nandurbar ULB

Table 4.1: Number of Machineries MDL provided to Nandurbar ULB

SN	Benefit received	Nos	Year of Commission	Status of machine	Usage at the time of visit (Yes/No)
1	Road Sweeper Machines	2	July 2019	Working	No

Nandurbar is a Municipal corporation and administrative district in the northwest corner of (Khandesh region) of Maharashtra. The city covers an area of 11.45 km2. There are 12 broad roads of 40 feet width in the city. Everyday 25 workers clean these roads from 6 am to 12 noon. The Corporation is spending around Rs.18 lakh per annum (Rs. 6000/worker/month).

The main objective of procuring 2 sweeper machines under MDL CSR project was to clean the broad roads in a short time and also to reduce the man power. However these machines were not used for a long time due to technical problems and not having trained manpower to operate the machines.

As per the discussions with ULB officials it was known that, one machine was being operated for some time (1 hour/day) for about 6 months (10 to 15 days in a month) since commissioning. After that the UBL stopped using the machines and it has been kept idle near the fire station in Nandurbar due to heavy noise coming from the machines. The UBL staff also mentioned that the public also objected to operate the machine on roads due to heavy noise.

During the operation of the machine it was observed that the operational expenditure of the machine was Rs 3000/month (30 liters of diesel). The machine was operated up to 1 km distance every day. The Machine has a capacity to replace 6 labourers per day and can save Rs.4000/day/6 labourers. This is only an assumption as the ULB have not kept any machine operational data for full day, and therefore calculation of savings on labour is very difficult.



During visit both sweeper machines provided are being kept idle after operating some time due to technical problems and not having AMC. MDL Project was limited to procurement of machinery only but not AMC component. During proposal submission AMC was not involved by ULBs, because ULBs have its own arrangement for AMC for all the vehicles. During meeting ULBS assured to make AMC contract with supplier shortly to fix the problem and reuse the machines. Therefore, presently ULB authorities are in the process of making AMC with supplier to fix the issue and ULBs have assured to resolve the issue shortly. If problem is not solved, other option may be other ULBs with in the same district can get it repaired so that they will get equipment to use in their ULBs.

#### 4.1.3 Navapur ULB

Navapur municipality is situated on the border with the state of Gujarat. It is approximately 100 km both from Surat and Dhule. This municipality is situated 50 km from Nandurbar District. With the objective to improve the solid waste management of the city, Navapur ULB has received one Road Sweeper machine and 16000 dustbins of 10 litre capacity. Details of machineries and items are given in Table 4.4.

Table 4.2: Number of Machineries and items MDL provided to Navapur ULB

SN	N Benefit received		Year of enefit received Nos Commission/distribution		Status of machine / item	Usage at the time of visit (Yes/No)
1	Road	Sweeper	1	July 2019	Working	No
	Machine					
2	Dustbins		16000	March 2018	Good condition	Yes
(10 litres Volume )						

#### a. Road Sweeper Machine:

One machine was received by Navapur ULB for cleaning the roads. However, machine was not used since commissioning due to technical problems like not sucking the dust and also the broom (brush) damaged the road surface during operation. Therefore, the machine has been kept idle at the Navapur pump house.

#### b. Dustbins (10 litres Volume)

At Navapur daily waste collection service is provided to all the households, slums, shops and establishments. The collection and transportation has been outsourced to Savitrimai Shushikshit Berojgar Seva Sahakari Sanstha, Dhule, Maharashtra.

Tractors are used for the primary waste collection. About 20 workers (both ULB and contractors) are engaged in door to door waste collection, street sweeping and transportation of solid waste. Prior to the MDL intervention, households were not segregating the waste at source, mixed waste (dry and wet) were given to the garbage collection vehicle. After MDL intervention, the ULB has created awareness about segregation of waste at source and dustbins were distributed to the entire community among all the wards of Navapura, Two bins (Green and Blue colour ) were given to each household. As per the ULB 70 to 80% of the households are segregating the waste at source.



This has reduced work load at the waste segregation area. At present 1.5 tonne wet waste and 4.5 ton dry waste is generated. Recyclable dry waste is sold to the scrap dealers and the remaining dry and wet waste is dumped after treatment at dumping yard.

#### c. FGD-1 with Dust bin beneficiaries at Navapur

Discussion was held with a group of women at Dhanrath Road, Deverpalli, Navapur. In this locality there are about 620 households. Navapura ULB has provided dustbins to all the households. Each household was given two dustbins (one for dry waste and one for wet waste). The community expressed that before distributing the dustbins the ULB team visited the locality and held discussions with the community to identify the need. The community also attended the awareness programms on waste management conducted by the ULB before distributing dustbins. The awareness program focused on segregation of waste at source and its benefits. All the beneficiaries were happy with the quality and suitability of dustbins and were being used regularly. The community mentioned that prior to the NDL intervention, they did not practice waste segregation. Garbage was strewn around irresponsibly creating unhygienic and dirty environment around the houses. Now Post MDL intervention, such practices have reduced by almost 70 to 80%. The community expressed that it will be better if 20 kg capacity dust bins are provided so that waste could be disposed once in 2-3 days.

#### 4.1.4 Taloda ULB

Table 4.3: Number of Machineries and items MDL provided to Taloda ULB

SN	Benefit received	Nos	Year of Commissio n/distributi on	Status of machine / item	Usage at the time of visit (Yes/No)	Operated (Km)	Total complaints / melas attended
1	Vacuum Emptier Machine (Truck Based 7 Ton capacity )	1	April 2019	Working	Yes	1780	100
2	Kamrodder Machine for Drain and pipe cleaning – 1 Nos. (5.5DP diesel Engine)	1	April 2019	Working	Yes	NA	10
3	Mobile Toilet (10 Seats) (1000 lt)	1	March 2019	Working	Yes regularly	NA	20
4	Dustbins - (10 litres Volume)	8000	March 2019	Working	All in use	NA	-



Taloda is a Municipal Council city in Nandurbar district, Maharashtra. Municipal There are 5,028 houses in the jurisdiction of the Council. MDL has provided dustbins, mobile toilets, vacuum emptier machine and drain and pipe cleaner to this UBL. At the time of the visit, mobile toilets were operated by the ULB and free service is provided to the public. However, the ULB collects Rs. 100 per annum in property tax from each household for repair and maintenance of the mobile toilets. Details of machineries and items are shown in above Table 4.5.

#### a. A Vacuum emptier machine (Truck Based -7 Ton capacity)

A Vacuum emptier machine ((Truck Based) (7 Ton )) has been provided to clear the blocked drainages in the city. This machine has a pump and a tank. The pump is designed to pneumatically suck liquids, sludge, slurries from the underground drainages into the tank of the truck. The main objective for selecting this vehicle/machine is to enable transport of the liquid material via road to disposal site or Faecal sludge Treatment Plant (FSTP). Before intervention of MDL, public was dependent on private service providers like manual scavenging or vacuum emptier machines, therefore MDL intervention has been helpful to the public.

At the time of visit, the vehicle condition was good and functional since commissioning in March 2019. This vehicle has attended 100 complaints and covered a distance of 1780 kms. This vehicle is operated by Taloda ULB and the average monthly expenditure ranges from Rs 5000 to 6000 as diesel costs depending on public demand and work load. The usage of the machine has reduced the manpower of 6 people. In a month at least 2 to 3 complaints are attended. In one use, the machine can suck 2000 litres of liquids from the drainage. The government has not been able to generate any income or savings through the usage of the machine. However, the free service has brought much relief to public and they have been able to save money which was otherwise spent on private service providers. The private service providers charge Rs 5000 based on the quantum of work. Before MDL intervention, the public were dependent on private service providers. It is estimated that this vehicle has saved Rs 5 lakhs (100 services X Rs 5000/service) to the public since the commissioning of the machine. The machine has provided other benefits like keeping the wards clean and hygienic, quick resolution of complaints and avoiding sewage overflow onto the streets.

#### b. Machine for Drain and pipe cleaning (5.5 DP diesel Engine)

The public were dependent on private service providers before this useful intervention by MDL. This is a small portable machine used for clearing choked drains in households. The machine is in good working condition and also being used regularly since commissioning. The machine consumes 0.5 litre diesel/hour for operation. This machine has 100 feet length connecting vibrator rod which can be inserted to the household drainage pipeline for clearing the blockages. At the time of visit, the machine has attended 10 complaints since commissioning. This is a free service from the ULB and has saved Rs 10000 for 10 complaints to the public.

#### c. Mobile Toilet (10 Seats - 1000 lt capacity)

Portable toilets are quite popular and are usually rented out during events and melas because they come with all fittings like toilet seats, water storage and easy waste collection.



The main advantage is it can be set up anywhere easily and can be moved from one place to another.

As mentioned in the earlier section the ULB is providing the service at free of cost to the public. Before MDL project intervention, the ULB was hiring mobile toilets for public functions and melas. The ULB was paying Rs 1000 per day. After MDL intervention, the ULB has got one tractor driven 10 seater mobile toilet. Based on the request from the public, ULB provides the mobile toilet to the public functions and meals. The fire department fills the required quantity of water into the water storage tank and cleans toilet seats at regular intervals. The ULB makes appropriate arrangements for waste disposal from mobile toilets. An average of 2000 to 2500 people use the toilets in each event. At the time of visit, the mobile toilet unit has provided service for 20 events and more than 50000 people have used them. The mobile toilet has been effective in avoiding urination and defecating in the open during events, thus maintaining hygienic surroundings at the event location.

#### d. Dustbins - (10 litres Volume Cello Make)

Dustbins were distributed to the community covering 80% of the households of the city. Totally 8000 bins (10 litre capacity) were distributed. Before providing dustbins, people were using a single dustbin and mixing wet and dry waste together. After MDL intervention, that has reduced by almost 50 to 60% and people are segregating the waste at source. This has reduced the work load of waste segregation at the dumping yard by 20 to 30%. At the time of visit, the ULB officials shared that around 1 ton of wet waste and 2.5 ton dry waste is being generated everyday. Dry waste that can be recycled is sent for recycling and the remaining dry and wet waste is being dumped at the dumping yard.

#### d. Discussion with individual beneficiary of dustbins at Taloda ULBs:

In Taloda four households were visited to observe the use of dustbins, all of them expressed that the quality of dustbin quality is good and is being used regularly to segregate waste at source. All of them attended the awareness program on waste segregation, cleanliness and hygiene conducted by Taloda ULB. This program has helped them to understand the importance of waste segregation at source.

#### 4.1.5 Shahada ULB

In 2018, Shahada ULB was planning to establish a systematic garbage collection system by introducing 8 mini garbage tipper mounted vehicles for garbage collection and distributing dustbins to all households for segregating the waste at source. At the same time the MDL intervention was planned by Nadurbar district authorities in Shahada ULB. This intervention gave a boost to the waste management plan of Shahada ULB. Details of MDL intervention is given in Table 4.6.



Table 4.4: Number of Machineries and items MDL provided to Shahada ULB

SN	Benefit received	Nos	Year of Commiss ion/distri bution	Status of machine / item	Usage at the time of visit (Yes/No)	Operated (Km)	Total complaints / melas attended
1	Vacuum Emptier Machine (Truck Based) (7 <b>Ton</b> <b>GVW</b> )	1	April 2019	Working	Yes	4424	300
2	Mobile Toilet (10 Seats) ( 1000 lt)	1	March 2019	Working	Yes	NA	27
3	Dust bins - (10 litres Volume )	20000	March 2019	Working	Yes	NA	-

#### a. A Vacuum emptier machine (Truck Based -7 Ton capacity):

At the time of visit, the condition of the vehicle was good and functional. The, vehicle is being operated by the Shahada ULB and has attended 300 complaints and covered a distance of 4424 kms. The average expenditure per month is about Rs 3000 to 5000 for diesel costs depending on public demand and work load. On an average, the vehicle is used for at least 18-20 days in a month is operational for about eight months in a year. At a time the machine can attend two complaints and has the capacity to suck 2000 litres of liquids waste from the drainage. Earlier the public was dependent on private vacuum emptier machines. After MDL intervention, ULB started providing service to public at reasonable charges of Rs. 2000/service whereas, private service providers charge Rs 3000/service. Due to the MDL intervention, about Rs 300000 has been saved by the public as well as ULB of by attended 300 complaints. The machine has provided other benefits like keeping wards clean and complaints are resolved quickly.

#### b. Mobile Toilet (10 Seats – 1000 litres capacity)

This is a tractor driven mobile toilet, where the ULB sets up the toilet at the event location. The fire department fills the water tank and also cleans the toilet seats at required intervals. At the end of the day, waste disposal is done by the ULB, and the waste collected is transported to the FSTP for treatment. The mobile toilet has been used for Navarathri melas, marriages and other social events. Before the MDL project intervention, the ULB was hiring mobile toilets for events at Rs 1500 to 2000 per day. After MDL intervention, the ULB provides the mobile toilet unit at a nominal charge of Rs. 500 per day.

On an average 500-1000 people have used the toilet in each event. The service has been provided to 25 events, wherein over 20000 people have used the system. The mobile toilet has benefited the public in different ways, such as avoiding urinating and defecating in open fields during events and melas and this in turn has helped to maintain hygiene in surrounding areas of melas and public events.



#### c. Dustbins

Dustbins were distributed to the community in all the wards of Shahada city; A total of 30000 bins (10 litre capacity - 20000 from MDL and 10000 from ULB) were distributed. Before providing dustbins, as mentioned in the other cities, in this city also people were using single bin and mixing wet and dry waste together.

Post MDL intervention, this practice has reduced by almost 70 to 80% and people are following segregation at source except in tribal and mining areas. The ULB has placed focus on creating awareness on segregating waste at source. Around 5 SHGs and ULB staff were involved in the awareness programs. This exercise has created more awareness in the community and has helped reduce the work load of waste segregation at the dumping yard. As per the ULB, the city generates around 2 tonnes of wet waste and 4.5 tonnes of dry waste per day. After recycling whatever possible, the remaining is sent to the dumping yard.

#### d. FGD-2 at Shahada

Discussions were held with a group of men and women at ward number -1, Shahada. In this locality there are about 800 households. Shahada ULB has provided dustbins to all the 800 households. Each household has got 2 dustbins (one for dry waste and one for wet waste) of 10 litre capacity. All of them expressed that the MDL initiative was good and provided best quality dustbins and they are using the bins regularly segregating the waste at source. All of them attended the awareness program on waste segregation, cleanliness and hygiene conducted by Shahada ULB. This program has helped them understand the importance of waste segregation at source.

#### 4.1.6 Dhadgaon Nagar Panchayat

Table 4.5: Number of Machineries and items MDL provided to Dhadgaon

SN	Benefit received	Nos	Year of Commiss ion/distri bution	Status of machine / item	Usage at the time of visit (Yes/No)	Operated (Km)	Total complain ts attended
1	Vacuum Emptier Machine (Tractor Based) ( 5000 ltr cap)	1	April 2019	Working	Yes regularly	NA	60
2	Ghanta Gadi (Auto Tipper with segregated compartment (Garbage Tipper 3.2Cu mt Capacity)	4	March 2019	Working	All machiner ies in Use	Vehicle - 1:7380, Vehicle - 2:8842, Vehicle - 3:7178 Vehicle - 4:11811	
3	Dustbins (10 litres Volume)	7000	March 2019	Working	Bins are in use	NA	

Dhadgaon block head quarter is also known as Akrani Tehsil of Nandurbar district in Maharashtra, India. It is situated 100km away from district headquarters Nandurbar. The total geographical area of village is 307 hectares. Dhadgaon has a total population of 1,253



people. There are about 266 houses in Dhadgaon city. The tehsil is surrounded by Madhya Pradesh state in the north and east, Shahada and Taloda tehsils in the south and Akkalkuwa in the west. Shahada is the nearest town to Dhadgaon which is approximately 65km away.

#### a. Vacuum emptier machine (Tractor Based - 5000 ltr capacity)

This is a tractor driven vehicle and the condition of which was good and functional at the time of visit. The vehicle has attended to 60 complaints since commissioning. The Nagar Panchayat hires a private tractor to pull and operate the machine. The vehicle is operated by Nagar Panchayat and an average monthly expenditure of Rs 5000 is spent for diesel and tractor hiring charges depending on public demand and work load. On an average, the vehicle is operated for 4-5 days a month and is operational for about 10 months in a year. It has reduced the manpower of five members to the ULB and as per the government rule manual scavenging is also an offence. The machine has replaced manual scavenging and supported for better service. Presently the ULB is providing service to the public free of cost.

#### b. Dustbins

Dustbins were distributed to the community in all the wards of Dhadgoan city; A total of 7000 bins (10 litre capacity) were distributed to 3500 households. Before providing dustbins, as mentioned in the other cities, people in Dhadgoan were also using a single bin and mixing wet and dry waste together. Despite having a large tribal population, the practice of not segregating waste has reduced by 70% nearly. As per the ULB, the city generates approximately 1.2 tonnes of dry waste and 0.4 tonne wet waste everyday. After recycling whatever possible, the waste is sent to the landfill.

#### c. Ghanta Gadi (Auto Tipper with segregated compartment)

The MDL intervention has provided four Tata Ace mini garbage tipper mounted vehicles for collection and handling of garbage from different locations. The capacity of each vehicle is 3 cum. The tipper has two compartments to collect dry and wet waste separately. It has hydraulic unloading system to empty the garbage collected from the households. Since commissioning, the Nagar Panchayat has utilised all the four vehicles very efficiently. Every day the vehicles transport two batches of waste, approximately 1.2 tonne of dry waste and 0.4 tonne of wet waste which is generated in this city. The recyclable material is recycled, while the remaining is dumped in the landfill. These 4 vehicles have saved around Rs 50000 per month. Earlier the Nagar Panchayat was paying Rs 1 lakh/month to the contractors for collecting garbage from the city.

#### d. Discussion with individual dustbin beneficiaries at Dagon ULB

In Dhadgoan 5 households were visited and interactions were held with individual beneficiaries. All of them expressed that the quality of dustbin quality was good and is being used regularly to segregate waste at source. Only 3 households interviewed had attended the awareness program on waste segregation, cleanliness and hygiene conducted by Dhadgoan Nagar Panchayat. This program has helped them to understand the importance of waste segregation at source. Beneficiaries from Dhadgoan expressed that it will be better if bigger capacity bins of 20 kg capacity are provided, so that waste can be disposed once in 2-3 days.



# 5 Appreciation

The implemented project got appreciation from all stake holders mainly public and Chief Officers of ULBs from Nandurbar District. The project implemented in Nandurbar district has supported to improve Swachh Surveskshan ranking. This has given good identify for the state as well as in central. Details of improvement in Swachh Surveskshan ranking and project appreciation by the officials is given below.

#### 5.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

#### 5.1.1 Swachh Survekshan Ranking

Swachh Surveskshan ranking is carried out by the Ministry of Housing and Urban Affairs (MoHUA), Government of India since 2016. This is considered as one of the world's largest urban sanitation and cleanliness' survey conducted under the ambit of the Swachh Bharat Mission (Urban). This is an annual survey of cleanliness, hygiene and sanitation in cities and towns across India. Based on cleanliness, ranking is given to each city/ town.

MDL intervention has aided in improving solid and liquid waste management in 5 ULBs. With respect to Swachh Survekshan ranking it was observed that MDL's intervention has contributed to better ranking of the ULBs along with other interventions. The table 4.8 below provides Swachh Survekshan ranking before and after the MDL intervention.

Table 5.1: Swachh Survekshan ranking

			Swachh Survekshan Ranking				
SN	Name of the ULB	Year	Before	Year	After		
			intervention		Intervention		
1	Nandurbar	2019	122	2020	41		
2	Navapur	2018	164	2020	101		
3	Taloda	2018	300	2019	49		
4	Shahada	2019	74	2020	13		
5	Dhadgaon	2019	329	2020	328		

Source: 5 ULBs. Navapur and Taloda 2019 data before intervention ranking and similarly after intervention 2020 data Taloda were not available.

#### 5.1.2 Letter of appreciation

District Collector office, Nadurbar has appreciated MDL for Supporting Swachh Bharath project in Nandurbar for providing cleaning equipment, dustbins and mobile toilets for the financial year 2018-19 and 2019-20. The letter mentions the support of MDL project, due to which, under Swachh Survekshan 2020 the Nadurbar Municipal Council has improved its ranking to 41<sup>st</sup> position from 122<sup>nd</sup> in Swachh Survekshan 2019 and 140<sup>th</sup> in Swachh Survekshan 2018. The ranking of municipal Councils like Navapur, Taloda, Shahada and Dhadgaon Nagar Panchyath has also improved considerably. Shahada Muncipal Council has improved its ranking to 13 in west zone from last year's rank of 74. This has given good



identity to the Nandurbar district at the state and central level. Appreciation letter received from District collector office, Nadurbar is enclosed in Annexure-2

#### 5.1.3 Statements of stakeholders



#### Mr Rajendra Shinde, Chief Officer, Nandurbar Municipal Council

Five urban local bodies in Nandurbar district received proper help for SWM and related works through the CSR from Mazgaon Docks Shipbuilder Limited, Mumbai. The equipment like mobile toilets and vaccum emptiers were much needed and due to financial incapacity,ULBs were unable to purchase it. So it helped ULBs to provide proper sanitary services to its citizens and it also resulted in improvement in rankings in Swatchh Bharat Abhiyan



# Mr Mahesh Chaudhari, Chief Officer, Navapur Municipal Council

This is a good project which supported to manage the waste mangement in Navapur ULB. The dustbins provided to the households are being used. With respect to the sweeper machine, we are in a process of making AMC contract with the supplier to fix up the problem to reuse the machine



# Ms Sapna Vasava, Chief Officer, Taloda Municipal Council

MDL has provided, mobile toilets, vacuum emptier machine and drain and pipe cleaner and dustbins to this UBL. We are utilising this equipment very well. This MDL intervention has supported very much in managing waste in Taloda ULB.





# Mr Rahul Wagh, Chief Officer, Shahada Municipal Council

In 2018, Shahada ULB was planning to establish a systematic garbage collection system from all households, At the same time the MDL intervention was planned by Nadurbar district authorities in Shahada ULB. This intervention gave a boost to the waste management plan of Shahada ULB and aslo contributed to get better Swachh Survekshan ranking



#### Mr Anant Jawadwar, CO, Dhadgaon Nagar Panchayath

Dhadgaon Nagar Panchayat is newly formed in 2015. At the time of establishmet it did not have any infrastructure for garbage collection transportation and processing. Being a small council and lack of financial provision it seemed very diffcult to work on this aspect. Also the area of council is large and has scattered population with diffcult terrain. Mazgaon Dock has provided us sufficient number of good new vehicles which made us easy to cope with our problem of garbage collection. Since then we are regularly collecting the household waste which help us keeping the area clean.



# 6 Evaluation of implementation agency and effectiveness of implementation

#### 6.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

This project has been implemented with 100% financial contribution by MDL. The Collector's office, Nadurbar spearheaded the project and 5 ULBs (Nandurbar Municipal Corporation (MC), Shahada MC, Taloda MC, Navapur MC and Dhadgaon Nagar Panchayat) were identified by the office. A Chief Officer, from one of the selected ULB, was nominated to monitor the project implementation and facilitate between MDL and 5 ULBs. After detailed discussions with 5 ULBs, the Collector's office summarised the requirements and prepared the proposal and submitted to MDL for CSR funds. All ULBs have chalked out a plan to utilise the equipment supplied in the project systematically. This intervention has helped to increase Swachh Surveskshan ranking of ULBs. The ULBs finalised the tender process to buy equipment's and other items. MDL paid the amount to the vendor directly.



# 7 Further community needs and way forward

#### 7.1 Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

#### 7.1.1 Nandurbar

Overall project intervention shows a positive connotation, however both sweeper machines provided are being kept idle due to technical problems and not having AMC. MDL Project was limited to procurement of only machineries, AMC component was not involved. It is because of the reason that these ULBs are told to have a different arrangement for AMC under different funds. Therefore, ULB authorities are in the process of fixing the issue and are in coordination with the supplier and they have assured to resolve the issue shortly. If problem is not solved, other option may be other ULBs with in the same district can get it repaired so that they will get equipment to use in their ULBs.

#### 7.1.2 Navapur

The sweeper machine provided is kept idle due to technical issues. Therefore in similar way of Nandurbar, Navapur municipal councils also have to make arrangement for AMC under different funds to fix up the problem to resume functioning of the machine. The ULB can include this machine under their general annual maintenance contract.

#### 7.1.3 Taloda

The machinery and dustbins provided are being used and the ULB stated that they can manage the sustainable operation of the same.

#### 7.1.4 Shahada

Two more mobile toilets could be provided to Shahada Municipal Corporation to avoid open defecation and urination at the public events and melas since the demand is high.

#### 7.1.5 Dhadgaon

In Dhadgaon Nagar Panchayat, officials put forth the need of i) one Tractor for pulling vacuum emptier machine ii) Bigger dust bins (20 litre capacity) – 50 nos iii) Ghanta Gadhi bigger capacity – 2nos (5 m3) iv) Road sweeper machine (Tractor fitting small capacity). In terms of facilitating better waste management, in each ULB wet waste ranging from 250 kgs to 2000 kgs is available per day which is currently being dumped. There is a potential for installing Bio-methanation plants for generating Biogas energy (either for Thermal/ Power) from wet waste.



### 8 References

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# 9 Photo Feature

# Project-1: Mechanisation of 5 ULBs in Nandurbar District in Maharashtra

#### Nandurbar ULB:



Photo 1: Meeting with Chief Officer at Nandurbar ULB, Nandurbar



Photo 2: Road Sweeper machines (2nos) parked near fire station at Nandurbar





Photo 3: Meeting with ULB officer at Nandurbar

## Navapur ULB:



Photo 4: Meeting with Chief Officer at Navapur ULB, Navapur





Photo 5: Road Sweeper machine (1no) parked near water pumping station at Navapur



Photo 6: Meeting with system operator at Navapur





Photo 7: FGD with dustbin beneficiaries at Dhanrath Road, Deverpalli, Navapur.

## Taloda



Photo 8: Meeting with ULB staff at Taloda





Photo 9: Vaccum Emptier Machine (Truck Based) at Taloda



Photo 10: Kamrodder machine (1no) for drain and pipe cleaning at Taloda





Photo 11: Mobile toilet (10 seats) at Taloda



Photo 12: AGM (HR) and Manager (CSR), MDL CSR committee ULB visit, Taloda





Photo 13: Interaction with Dustbin beneficiary at Taloda

## Shahada



Photo 14: Meeting with Chief Officer at ShahadaULB, Shahada





Photo 15: Mobile toilet (10 seats) at Shahada ULB, Shahada



Photo 16: Vacuum Emptier Machine (Truck Based) at Shahabad





Photo 17: Vacuum Emptier Machine (Truck Based) at Shahada

# Dhadgaon



Photo 18: Meeting with Nagar Panchayat staff at Dhadgaon





Photo 19: Ghanta Gadi (Garbage Tipper) (4nos) at Dhadgaon



Photo 20: Vacuum Emptier Machine (Tractor based) at Dhadgaon





Photo 21: Ghanta Gadi (Garbage Tipper) (4nos) at Dhadgaon



Photo 22: Dustbin using by beneficiary at Dhadgaon



## **Annexures**

#### **Annexure -1**

A copy of the proposal of Collector office, Nandurbar

# COLLECTOR OFFICE, NADURBAR

Ph: 02564-221001

Fax: 02564-210041

Ref no. NP/WS/ 986

Date: 12 | 12 | 2018.

To Hon. General Manager (A&I) Mazagaon Dock Shipbuilders Ltd, Mumbai-400010.

Subject: -

Regarding re-submission of proposal under support for CSR projects on "Swachh Bharat Mission" in Nandurbar Dist. of

Maharashtra.

Reference:

1. Your letter No. CSR/2018-19 dt. 01/10/2018

2. Meeting with Hon. ACS on 25/10/2018.

3. Letter from this office Dated 22/11/2018.

#### Respected Sir,

According to above subject, this office had submitted the proposal under "Support for CSR projects on 'Swachh Bharat Mission' in Nandurbar District of Maharashtra" by letter on Date 22/11/2018. In that respective letter the rates and quantity of sweeper machine had been quoted wrong by mistake. So, we are again re-submitting the proposal with correction in the cost and quantity as follows.

Sr.No.	Name of Council	Necessary Equipments	Estimated Cost (In Lacs)
1.	Nandurbar Municipal council	A. Road Sweeper Machine -2 Nos (Rate Rs.24.5 Lac/Unit) (Ashok Leyland DOST Chassis)	49.00
2.	Shahada Municipal council	A. Vaccume Emptier Machine (Truck Based) – 1 Nos (7 Ton GVW TATA model 709 chassis)	15.00
		B. Mobile Toilet (10 Seats) ( ASIAN ENTERPRISES 1000 lt)	9.00
		C. Dust bins – 20000 Nos (10 liters Volume Nilkamal Make)	20.00
3.	Navapur Municipal council	A. Road Sweeper Machine -1 Nos (Ashok Leyland DOST Chassis)	24.50
		B. Dust bins – 16000 Nos (10 liters Volume Nilkamal Make)	16.00
4.	Taloda Municipal council	A. Vaccume Emptier Machine ( Truck Based) – 1 Nos (7 Ton GVW TATA 709 chassis)	15.00
		B. Dust bins – 8000 Nos (10 liters Volume Nilkamal Make)	8.00
		C. Kamrodder Machine for Drain and pipe cleaning – 1 Nos. (KAMRODDER 5.5DP diesel Engine)	5.00
		D. Mobile Toilet (10 Seats) (ASIAN ENTERPRISES 1000 lt)	9.00



5.	Dhadgaon Nagarpanchayat	A.Vaccume Emptier Machine (Tractor Based) – 1 Nos (INFINITY Enterprises 5000 ltr cap)	7.00
	2.	B. Ghanta Gadi (Auto Tipper with segregated compartment - 4 Nos.  ( Garbage Tipper TATA model 3.2Cu mt Capacity)	25.00
		C. Dust bins – 7000 Nos (10 liters Volume Nilkamal Make)	7.00
			209.50

All above mentioned equipments and vehicle's cost is including GST, other tax, and cost of onsite delivery(transportation). We are requesting you to accept this letter.

Thanking you.

Your Sincerely

(Rahul B. Wagh)
District Administrative Officer
Urban Development Department
Collector Office, Nandurbar



## Annexure -2(A)

## Impact Assessment of MDL CSR Projects in Sanitation Sector

Project -1: Mechanization of Five ULBs at Nandurbar Questionnaire for Key Informant Interview - Implementing Agency (ULBs)/MDL

ULB:		Taluk/Block :				
District		State :				
1.	Name of Nodal Officer/respondents :					
2.	Designation:					
3.	Contact Number:					
4.	Office address :					
5.	Department					
6.	Responsibilities					
7.	Machineries and items received und	er MDL project				
	Name of the machine	Make/specification	Nos	Functioning /Non functioning	Using /Not using	
	a) Road Sweeper Machine	Ashok Leyland DOST Chassis				
	b) Vacuum Emptier Machine (Truck Based) – 1 Nos	7 Ton GVW TATA model 709 chassis				
	c) Mobile Toilet	( ASIAN ENTERPRISES 1000 lt) – 10 seats				
	d) Dust bins	(10 liters Volume Nil Kamal Make/ equivalent)				
	e) Kamrodder Machine for Drain and pipe cleaning	(KAMRODDER 5.5DP diesel Engine)				
	f) Ghanta Gadi (Auto Tipper with segregated compartment)	(Garbage Tipper TATA model 3.2Cu mt Capacity)				
	g) Any other machine/item received please note down					
8.	Financial details (Lakhs)	Sanctioned:	Expend	iture :		
9.	Project year of commencement and completion ( Month/Year)	Start:	End:			
10.	Have you conducted any awareness programs, trainings under the	Yes/No				

11.	If Yes, note down the details	
12.	If functioning and using machineries,	please note down the below mentioned details:
Road	l Sweeper Machine	
13.	Operation and maintenance mechanism	
14.	Operational expenditure per month	
15.	Average number of hours used per day	
16.	Number of days used in a month	
17.	Number of months used in a year	
18.	Usability and Convenience	
19.	Total area covered per day ( Area and length)	
20.	How many kilometres has the	
21.	machine been operated so far (Kms)  Present condition of the machine	
22.	How much manpower has been reduced per day	
23.	What are the advantages of using the machine	1. 2. 3. 4.
24.	Before procuring the machine, how were the roads cleaned previously	
25.	How much money was spent monthly before adoption of the road cleaning machine (Rs)	
26.	How much amount has been saved by using this machine (Rs)	
27.	What are the constraints of using the machine?	
28.	Potential for future by using similar kind of machines	
Vacu	um Emptier Machine	
29.	Operation and maintenance mechanism	
30.	Operational expenditure	
31.	Average number of hours used per day	
32.	Number of days used in a month	



33.	Number of months used in a year	
34.	How many kilometres operated so far (Kms)	
35.	Present condition of the machine	
36.	Total number of complaints covered per day	
37.	Manpower reduction per day by using the machine	
38.	What are the advantages of using the machine	
39.	Monthly savings in Rupees by using the machine	
40.	Before adopting the machine, what type of practices were done?	
41.	Monthly spending before start of the project	
42.	Any potential for future implementation	
Mob	ile Toilet	
43.	Number of Melas /Hatts covered	
44.	Operational mechanism	
45.	Present condition of the item.	
46.	Operational expenditure and income	
47.	Number of people used per day	
48.	Number of days used per annum	
49.	Water source	
50.	How many kilometres has the unit run so far (Kms)	
51.	What is the fecal sludge disposal mechanism ?	
52.	Amount charged per person	
53.	Total number of persons used so far	
54.	What is the frequency of cleaning	
55.	Benefits and limitations	
56.	Potential for replication	
Dust	bins	
57.	Criteria for household/area selection	
58.	Total number of areas covered and name of the area,	



59.	How many bins provided for each household	
60.	Has the colour coding maintained	
61.	Percentage of people using dustbins	
62.	Before getting dustbins, how was the waste collect and stored	
63.	Mode of disposal	
64.	What is the method of segregation and further processing of the waste?	
65.	What are the benefits of using dustbins	
66.	Potential for replication	
Mac	hine for Drain and Pipe Cleaning	,
67.	Operation and maintenance mechanism	
68.	Operational expenditure	
69.	Number of days used per annum	
70.	Number of hours used per day	
71.	Total number of complaints attended per month	
72.	How many kilometres run so far (Kms)	
73.	Present condition of the item.	
74.	What is the manpower reduction per month	
75.	How much is spent for cleaning per month?	
76.	How much amount is saved per month by using the machine	
77.	What are the benefits of using the machine	
78.	What are the constraints of using the machine	
79.	Potential for future implementation	
Gha	nta Gadi (Auto Tipper )	
80.	Number of vehicles received under the project	
81.	Operation and maintenance mechanism	



ſ		
82.	How many kilometres run so far (Kms)	
83.	Present condition of the item.	
84.	Operational expenditure per month	
85.	Number of days used per month	
86.	Quantity of waste transported per auto tipper	
87.	Manpower reduction	
88.	What are the benefits?	
89.	Prior to the project, how was the solid waste collected and transported?	
90.	How many auto tippers were there before the project started	
91.	Potential for future implementation	
92.	Advantages and limitations	
Any	other machine/item received/ informat	tion please note down the details
93.	Do you think the MDL project has supported in improving solid and liquid waste management in your ULB?	Yes /No
94.	If Yes, What extent?	
95.	What was the Swachh Bharat ranking of this area before starting of the project	
96.	What was the Swachh Bharat ranking after implementing the project (year wise) and over the past few years.	
97.	Any other Remarks/Suggestions/ Recommendations for effective	
	implementation and replication of the programme	

organizate of investigator.	Signature of officer
Date:	Office seal
	Date:



## Annexure -2(B)

Project -2: Mechanization of Five ULBs at Nandurbar FGD check list for dust bin receivers/beneficiaries

SN	Parameters	Details			
1.	Location details	Name of Area	Name of	ULB	Name of block/taluk
		Name of Municipality/ town panchayat	Name of	district	State
2.	Number of households in the ward				
3.	Number of Households who received dust bins				
4.	How many dust bins received by each household				
5.	Is there a colour code (✓)			Green / Blue	
6.	Did the ULBs staff discuss the community need with you before providing dustbin? ( < )	Yes/ No			
7.	If yes, what was the process?				
8.	Have you attended any awareness program on waste management (✓)	Yes No		No	
9.	If Yes, which are the topics covered				
10.	Suitability of dustbins for the households	Yes	No	Partially	Not suitable
11.	If not suitable, reasons				
12.	Opinion of quality of dustbin	Good		Average	Poor
13.	Is it presently used or has it been discarded?	Presently us	ing	D:	iscarded
14.	Present system of waste collection				
15.	Usefulness/ Impact of the Benefit (waste maintenance/ improving living conditions/area /Odour / flies etc.)				
16.	What is your suggestion /Remarks on benefits				



SN	Participant Name	Signature
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#### Note:

- Picture during FGD including ULB staff
- Picture of community benefit with few people around it including ULB staff
- List of FGD participants with signature including ULB staff







#### Annexure -2

Ph. No.: Off.: (02564) 221001 Resi.: (02564) 221002 Fax: (02564) 210041

Office of the Collector & Dist. Magistrate, Nandurbar - 425 412 (Maharashtra)

D.O. Letter No. : Date : 21 /08/2020

# Dr. Rajendra Bharud I.A.S. Collector

# Letter of Appreciation

This is with reference to the Swachh Bharat project supported by your organization in FY 2018-19 and 2019-20 under which Machines, Equipment, Dustbins, Mobile toilets etc were procured/supplied by your organization under CSR to 04 Municipal Councils and 01 Nagar Panchayat of Nandurbar District.

In this regard, we would like to inform you that the All India Ranking of Nandurbar District under Swachh Sarvekshan 2020 (SS20) has considerably improved. The rank of Nandurbar District is now 41 whereas the rank in the last two years were 122 in SS19 and 140 in SS18.

The ranking of Talukas like Shahada, Taloda, Navapur and Nandurbar has also improved considerably. Please refer the attachments with this letter.

We express our gratitude to the CSR team of Mazagon Dock Shipbuilders Limited, Mumbai for supporting Nandurbar District in undertaking the waste management project. The said project under CSR of your organization has significantly contributed to the efforts of District Administration – Nandurbar in improving the ranking of the District in SS20.

Congratulations to MDL

Thanking you,

Dr. Rajendra Bharud District Collector, Nandurbar

To, HoD (CSR) Mazagon Dock Shipbuilders Ltd, Mumbai - 400010

#### Annexure - 2 conti

