

Operational Plan

For

WASH Facility

Kirtipur Municipality

2021





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1. INTRODUCTION

1.1. BACKGROUND

Sanitation workers have long been marginalized across South Asia because of stigma around the nature of their work and discrimination based on caste, ethnicity and religion. Awareness and behavior change apart, limited facilities access has magnified the occupational and health hazards they already faced. The goal of SDG to ensure access to water and sanitation to all has actually been excluded for sanitation workers and for this reason they are in intense vulnerability bearing health risk for own self and their dependents. Proper and safe sanitation and hygiene facilities is a vital requirement for addressing sanitation worker's safety and also for their dignity.

To ensure dignity, safety and rights of the sanitation workers Environment and Public Health Organization (ENPHO), with the support of the Bremen Overseas Research and Development Association (BORDA) and in collaboration with Kirtipur Municipality established WASH Facility Center for the sanitation workers in Kirtipur Municipality under the project 'Integrated urban water management at the center of municipal public services' project (2018-2020) " The project is designed in line with SDGs 6 (water) and 11 (sustainable cities), aiming to support municipalities and environmental service providers to improve the living conditions of all inhabitants, protect natural resources, and develop livable and inclusive cities.

Kirtipur Municipality has designated four different private partners for managing generated at household level. Meanwhile, around 50 sanitation workers are providing valuable services through those private partners. Solid Waste Management Center is located at Tribhuvan University premises. The companies here are segregating waste and transferring them to vendors or to landfill site. Additionally, organic waste collected from the city is recovered to compost. Taking on the actual need of in this place, the WASH facility has been established and handed over on 23 March 2021 to Kirtipur Municipality.

The facility is nearby the bus-park of Kirtipur municipality and is in sight of pedestrian habitants and students of the university. With the packaged facility of water, sanitation and hygiene inside, the operating and maintenance is the foremost concern took by the counterparts, Kirtipur Municipality, ENPHO, BORDA and also waste private partners. The more facility means parallel expenses on operation.

This document is therefore prepared by ENPHO in co- operation with Kirtipur Municipality and waste private partners for proper and smooth operation and maintenance of the center. This document will further support Kirtipur Municipality to decide and assign care taker or grab attention from investors. The attractiveness of the facility aesthetically and hygienically is both crucial along with its consistent operation.

1.2. WASH Facility Overview



I. About WASH Facility

The WASH Facility is located at Naya bazar, ward 9 in Kirtipur Municipality. The pre-fabricated sanitation center constructed in 710 sq. ft. is inbuilt with two toilet compartments; male and female with handwashing basins. A unique addition to this facility is laundry service with washing machine. For water supply, facility of water tank, dug well and water pump is available for handwashing and toilet use. Purified water can be consumed inside the facility. The facility was constructed mainly targeting sanitation workers to maintain their safety and health. More than 50 Workers had one toilet only for sanitation and were not properly accessed to comprehensive WASH facility. Now, Kirtipur Municipality has its ownership inclusive commitment of operation and maintenance, sustainability and take it to the level of renowned and replicable facility.

II. Contribution and Investment:

Kirtipur Municipality:

- Provided land with total area 710 sq. ft. altogether for structure and resting area.

BORDA and ENPHO

- Technical Support for design and Estimate
- Roofed pre-fabricated structure with below mentioned facilities with full tile floor, plumbing, and electrical installation.
- WASH facility as detailed in annex I
- Attached wooden sitting zone with tiled garden landscape.

Total Investment

NRS 46,26,801.39 (Rupees Forty-six lakh, twenty-six thousand, eight hundred one only)

1.3. Purpose

I. Purpose of WASH Facility

- The foremost aim of the WASH facility is to provide safe and hygienic WASH service to sanitation workers of Kirtipur Municipality.
- The modern equipped facility can also extend its service to public especially aiming to floating population; students, drivers and pedestrians.
- The facility including waste transfer station can be developed as educational observation site for students.

II. Purpose of the Operation Plan

The operation plan provides synopses and structures for following points:

- Frame the services the facility can provide and explains business opportunity.
- The minimum operation cost and pricing of the services.
- Alternatives for operating the facility smoothly also considering purpose of the WASH facility.
- Opportunities for marketing and income generation
-

1.4. Operation Options

I. Source of income generation

The services WASH Facility can provide for income generation could be as follows:

* **Toilet use for urination**

* **Toilet use for defecation**

* **Laundry Service**

* **Drinking Water Service**

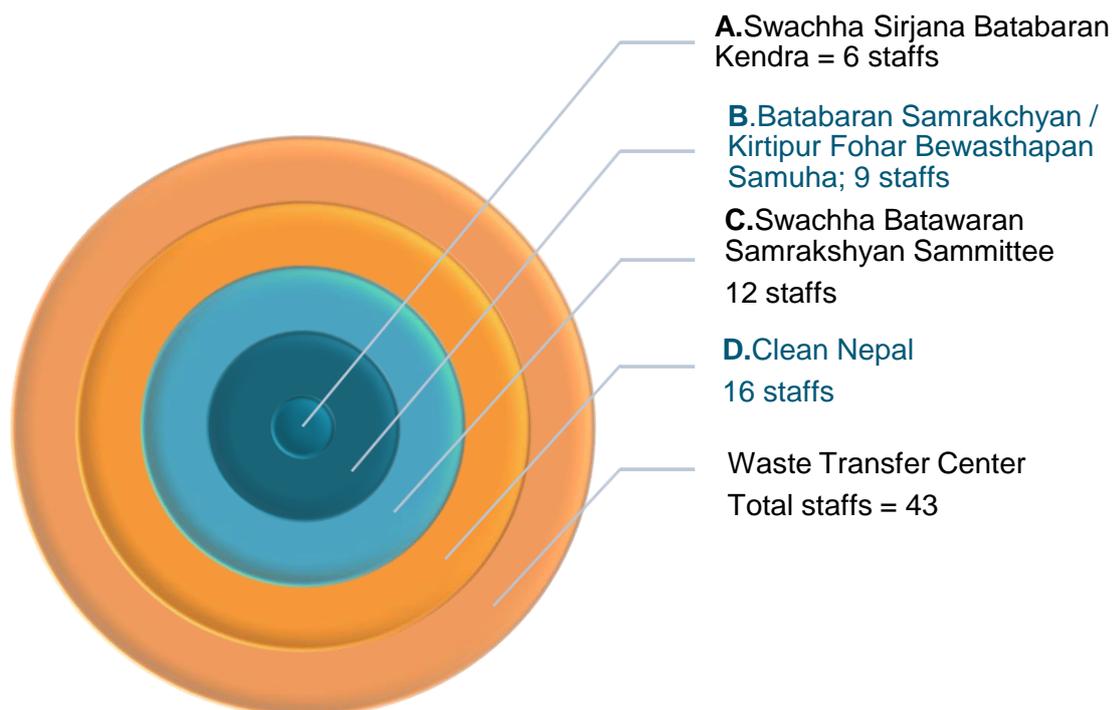
* **Bathing**

II. Number of targeted users

Kirtipur Municipality is emerging as a favorable place for student to rent. Most of the population are not living here permanently and may not have proper access to laundry and bathing. The priority targeted facility users are 50 above "in-house sanitation workers". For

income generation and smooth operation of the facility, public use and other revenue generating alternatives should be planned. Therefore, other focused beneficiary is public which comprises students, drivers, helpers and other floating population.

In-house Facility Users



III. Expected Facility Users

The users are numbered assuming case of "At least" scenario. However, the facility user number can rise than expected if proper strong effort is put in marketing and promotion of WASH Facility. The assumed number for user for individual facilities are as follow:

Table 1: Assumed Facility Use

Services	Unit	Assumed no of use Public	Assumed no of use In-house staffs
* Toilet use for urination	times	50	100
* Toilet use for defecation	times	10	50
* Laundry Service	Wash	4	4
* Drinking Water Service	glass	20	50
* Bathing	times	10	25

IV. Probable Options for Operation

Option I: Only use by in - house staffs by paying Break Even Point cost for operation and not allow public

- ↳ Deposit amount in division by all 4 waste managing companies; A, B, C and D in proportion of 37%, 28%, 21% and 14 % simultaneously.
- ↳ A staff should be assigned for operation, cleaning and maintenance of facility.
- ↳ All staffs should take responsibility to well operate the facility and make it clean and well maintained.
- ↳ For cost contribution - owner may bear full cost or 50 /50 by owner and employee self. In this case Kirtipur municipality may support for a care taker)
- ↳ A small space shall provide in rent to local vendor for extra revenue.
- ↳ There will be no extra income generation in this option except if provide for rent.

Option II: Allow public to use the WASH Facility for profit and take minimum Break Even Point cost with in-house staffs.

- ↳ Income can be generated if public is permitted to use the WASH Facility.
- ↳ Applying a specific schedule can manage the flow of user for in-house and public.
- ↳ A staff should be assigned for operation, cleaning and maintenance of facility.
- ↳ All staffs should take responsibility to well operate the facility and make it clean and well maintained.
- ↳ For remaining cost contribution - owner may bear full cost or 50 /50 by owner and employee self. In this case Kirtipur municipality may support for a care taker)
- ↳ A small space shall provide in rent to local vendor for extra revenue.
- ↳ Registration of visitors and financial auditing will be vital for transparency.

Option III: Entrust facility to an entrepreneur for operation and maintenance.

- ↳ This approach will fulfil both objectives of livelihood and of operation and maintenance of the facility. (Run a tea shop inside and also operate the facility.)
- ↳ This option will be hassle free regarding financial transparency.
- ↳ In-house users will not pay the cost or they may need to pay if public use and business profit is lower than expected during plan.
- ↳ The entrepreneur can be benefitted through revenue of public use & in addition run a business. (*For instance business could be of tea shop, barber shop, etc*)
- ↳ Entrepreneur should simply apportion amount monthly for operation and maintenance of WASH Facility in future. Taking reference to the user's flow, amount for O & M fund.
- ↳ This option will decrease amount from operator's salary.

Above options can be adopted in case of the WASH Facility. For the validity and feasibility check, Kirtipur municipality in support with in-house sanitation entrepreneurs shall trail for 1st few months to exactly audit flow of users and expenses in operation cost. This will help to clearly choose the exact option for operation of the facility. Kirtipur municipality will be responsible and authorized for taking the further decision.

1.5. Resources and Expenses

I. Resources for operation

Table 2: Resources for operation

• Laundry (Per load) : Per load = 8 kg of clothes		
• Resources	• Unit/use	• Quantity
* Water	• Liter	• 60
* Detergent	• Gram	• 50
* Electricity	• Kwh	• 1
• Toilet use for urination		
* Water	• Liter	• 3
• Toilet use for defecation		
* Water	• Liter	• 5
• Bathing		
* Water	• Liter	• 50
• Drinking Water		
* Jar Water	* Liter	*
• Other Operational cost/ year		
* Operator	• No.s/year	• 1
* Cleaning materials (Harpic) /other acids	• No.s/year	• 24
* Soap	• No.s/year	• 365
* Brush	• No.s/year	• 4
* Mopping tools	• No.s/year	• 4
* Sanitizing liquids	• No.s/year	• 12
* Electricity for operation(LS)	• Kwh/year	• 365

II. Unit Operation Cost and Pricing of Facilities

Operating Expense = NRS 2,00,625 Yearly

NRS 549.66 per day

Operating expense dividing 4 major source of income= NRS 137.41

Table 3: Unit operation cost for each facility

Facilities	Unit Cost	Minimum Operating Cost
laundry /Wash i.e 6 to 8kg	52.00	34.35
Bathing	17.50	13.74
Toilet	1.05	3.80
long toilet	1.75	13.74
Total	52.00	

1.6. Financial Plan

The encouraging thing for facility operation is the ready-to-use structure is built in one of the favorable site of Kirtipur Municipality. Further, Kirtipur Municipality will not have to invest for its operation. Deployment of suitable plan is prerequisite to achieve the goal of collecting fund for smooth operation and maintenance of the facility. The startup investment will be in negligible number.

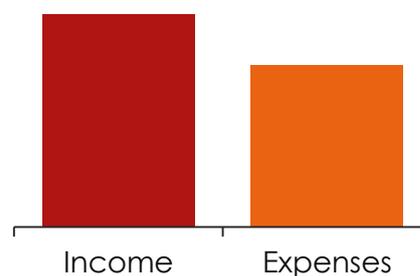
Table 4: Start-up investment

Items	Estimated Cost	
Water	-	Available dug well, water tank and pump can be used for water.
Electricity		
Detergent		
Operator		
Sanitary materials		

I. Financial Plan for Public Users

The priority of the facility is providing service to sanitation workers more than earning profit. On the positive note, the facility can earn profit if option II is enrolled as mentioned in heading 1.4. The income can be increased if small space is provided in rent for business. The summary illustrates the total profit for depositing in operation and maintenance fund. The calculation is done on the basis of assumed users in table 1 and yearly balance summary is presented in table 5 below.

Table 5: Summary of yearly balance if used by public



SUMMARY	
Total yearly Income	₹ 521,950.00
Total yearly Expenses	₹ 396,385.45
BALANCE	
	₹ 125,564.55
Total monthly Profit/Loss	₹ 10,463.71

Table 6: Operation expenses for public users

OPERATION EXPENSES

Item	Units	Frequency /day	Total days	Consumption	Cost NRS	Cost of each unit (NRS)	Total Expenses/ye ar NRS
Assumption 1: Cost of water 0.35/lt							
Assumption 2: Water consumption 60/wash							
Water for WM	NRS/ ltr	4	365	60	0.35	21	30,660
NRS 26.4 is power consumption kWh with NRS 11 /kWh							
Assumption 1- WM of 2400 watt							
Assumption 2- It will be operated for atleast 4 loads/ day							
Electricity for WM	NRS/kWh	4	365	1	11	11	16,060
Assumption 1: 1000gm powder detergent costs NRS 400							
Assumption 2: per wash, detergent consumption is 50gm							
Detergent for WM	NRs/Gram	4	365	50	0.40	20	29,200
Operator	NRS/Mnth	1	365	1	500	500	182,500
Cleaningmaterials (Harpic)/other acids	Nos/mnth	1	12	2	125	250	3,000
Soap	No.s/day	1	365	1	25	25	9,125
Brush	No.s/yr	1	1	4	200	800	800
Moppings	No.s/yr	1	1	4	400	1,600	1,600
Senitizing liquids	No.s/Yr	1	12	1	300	300	3,600
Water for bathing	Person/day	10	365	50	0.35	18	63,875
Water for toilet use and cleaning	Person/day	50	365	3	0.35	1.1	19,163

Toilet for defecation		10	365	5	0.35	1.8	6,388
Electricity for operation	LS	1	365	1	33.33	33.33	12,165
Drinking Water	liter	20	365	1	2.5	2.5	18,250

Table 7: Yearly income from public users

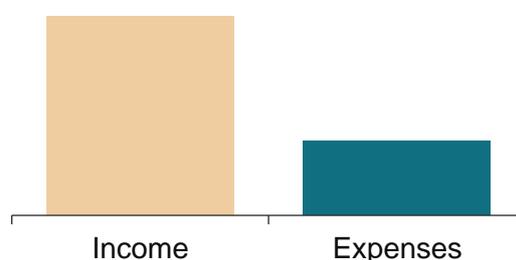
YEARLY INCOME							
Item	unit	quantity	days	Price/unit (NRS)	Income/ Day Cost (NRS)	Income/Yearly Cost (NRS)	Remarks
Laundry	kg/day	4	365	120	480	175,200	per wash assumed to be 6kg, Hence can charge NRS 20 /kg
Toilet use by public	person /day	50	365	5	250	91,250	
Bathing charge	person /day	10	365	50	500	182,500	
Water serving Service	person /day	20	365	5	100	36,500	
Long toilet	person /day	10	365	10	100	36,500	
Total					1,430	5,21,950	

II. Financial Plan for Public Users to Maximum Number

The table 8 is only the reference summary to illustrate the facility can be operated in a very attractive profitable business if public users are increased to a like number of sanitation workers in-house. Nevertheless, such costs cannot be charged to in-house users. Considering the major objective of the facility, sanitation workers should be in priority to use the facility in minimal cost. The table 8 and table 10 calculates the assumed profit if the number of public users will be around 25, 100, 50 & 50 for bathing, urination, drinking water and defecation daily simultaneously including 4 cycles of laundry per day.

Table 8: Summary yearly balance if number of public users will be alike in- house users

SUMMARY	
Total yearly Income	1,042,075
Total yearly Expenses	564,285



BALANCE (NRS)	477,789.55
Total monthly Profit(NRS)	39,815.80

Table 9: Income if number of public users will be alike in- house users

MONTHLY INCOME							
Item	unit	Qty	days	Price	Per Day	Yearly Income (NRS)	Remarks
Toilet use	person/day	100	365	5	500	182,500.00	
Laundry 6to8kg /wash	kg/day	4	365	120	480	175,200.00	Can charge upto NRS 20 /kg
Bathing charge	person/day	25	365	45	1125	410,625.00	
Drinking Water	person/day	50	365	5	250	91,250.00	
Defecation	person/day	50	365	10	500	182,500.00	

III. Financial Plan For In-House Users

The summary balance in table 9 is calculated on the basis of number of in-house Facility users. In total 50 staffs working in the municipality, is calculated in summarized total expenses in table 10.

Table 10: Operation cost for in-house users

Item	Units	Number, frequency/day	Total days	Consumption /Wash/day/mnth	Cost	Cost of each unit	Total Expenses /year
Assumption 1: Cost of water 0.35/lt							
Assumption 2: Water consumption 60ltr/wash							
Water	NRS/ litres	4	365	60	0.35	21	30,660
*NRS 11 is power consumption kWh with NRS 11 /kWh							
Assumption 1- Washing machine of 2400 watt							
Assumption 2- It will be operated for atleast 4 loads/ day							
Electricity for machine	NRS/kWh	4	365	1	11	11	16,060
Assumption 1: 1000gm powder detergent costs NRS 400							
Assumption 2: per wash, detergent consumption is 50gm							
Detergent	NRs/Gram	4	365	50	0.40	20	29,200
Operator	NRS/Mnth	1	365	1	500	500	182,500
Cleaning materials (Harpic)/ other acids	No.s/mnth	1	12	2	125	250	3,000
Soap	No.s/day	1	365	1	25	25	9,125
Brush	Nos/year	1	1	4	200	800	800
Moppings	No.s/year	1	1	4	400	1,600	1,600
Senitizing liquids	No.s/year	1	12	1	300	300	3,600
Water for bathing	Person/day	25	365	50	0.35	18	159,688
Water for toilet use and cleaning	Person/day	100	365	3	0.35	1.1	38,325
Long toilet		50	365	5	0.35	1.8	31,938
Electricity for operation	LS	1	365	1	33.33	33.33	12,165
Drinking water		50	365	1	2.5	2.5	45,625

1.7. Business Descriptions

I. Public Users

The unit cost price of facility with operation cost is illustrated in table 11 and service cost that can be charged. The service charge can be decreased according to the decision of the management committee.

Table 11: Unit cost and charge for facility use

Services	Unit Cost with operating cost	Charge for facility use	Profit/loss per unit	Remarks
Laundry /Wash i.e 6 to 8kg	86.35	120	33.65	Per kg charge @NRS 20
Bathing	31.24	50	18.76	
Toilet	3.80	5	1.20	
long toilet	15.49	10	-5.49	
Total			48.12	

II. In-House Users

The main targeted beneficiaries of the facility need accessibility to clean and safe sanitation. Nonetheless, it can be persistent only if the facility will be economically independent. Implementation of option 'I' is solely dependence to contribution from 4 companies working in the waste transfer center. Few arrangements can be done to minimize cost burden to sanitation workers. If option I is chose, cost reducing actions include:

- * Support by Kirtipur Municipality for hiring care-taker.
- * Generate revenue by giving a space on rent for business.
- * Contribute in proportion by staffs and company.

Currently all 4 companies have been depositing NPR 5,000 monthly as a contingency fund and for operation and maintenance of the whole area. Add up extra amount similarly can help to manage the deposits.

The calculation of cost division is done in table 12 in which expense is summed up in two different circumstances; first, if facility needs to buy water and other is, if adequate water available in existing water sources. Cost is divided according to number of staffs. A staff will need to contribute NRS 36 if they have to buy water and NRS 17 per day if they use existing source.

Table 12: Break Even Point Cost for in-house users to cover operation cost

Expenses in (NPR)					
Yearly (If buy water)		5,64,285.45		Monthly	47,024
Yearly (If no need to buy water)		2,58,050		Monthly	21,504
Cost Division to 4 sanitation stakeholders in-house					
Name of stakeholders	Swachha Sirjana Batawaran Kendra	Clean Nepal	Batanbaran Samrakchyan/Kirtipur Fohar Beswasthapan Samuha	Swachha Batawaran Samrakshyan Sammittee	
Number of staffs	6	16	9	12	
percentage	14%	37%	21%	28%	
Contribution for facility utilization	Buy Water	6561	17497	9842	13123
	Not buy	3010	7956	4515	6021
Monthly Contribution per staff	Buy Water	1094			
	Not buy	502			
Daily Contribution /staff	Buy Water	36			
	Not buy	17			

For management of crowd and equal opportunity to use the facility a discussed schedule can be followed. This will manage conflict among staffs and optimal use of the facility. For instance, schedule below is drafted according to the number of staffs.

Swachha Sirjana Batawaran Kendra	Clean Nepal	Batanbaran Samrakchyan/Kirtipur	Swachha Batawaran Samrakshyan Sammittee
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		Fohar Samuha	Beswasthapan
Sun & Wednesday	Monday & Friday	Sun & Wednesday	Tuesday & Thursday

1.8. Sustainable Operation Plan

I. SWOT Analysis

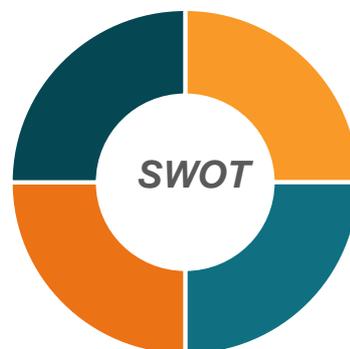
Kirtipur Municipality and four in-house stakeholders will decide to choose the better option to operate the facility smoothly and maintain its attractiveness and hygiene to the sustained time being. The strengths, weaknesses, opportunities and threats will be backing for mitigation measures for sustainability.

STRENGTHS

- Situated in prime area of the municipality and easy access to targeted people.
- Equipped with modern sanitation facilities and comfortable place for taking rest.
- Supportive and collaborative 5 stakeholder's involvement

OPPORTUNITIES

- New and unique facility which is definitely a curiosity for people.
- The municipality is an emerging town for students and other floating population
- In ownership and support of local body
- No worries for investment retention and profit



WEAKNESSES

- Requires trial period to actually understand the circumstances.
- Operation team needs capacity building to take it to the level as dreamt by project team.

THREATS

- This facility may need a focal person to regulate it as aimed.
- Operator/care taker's negligence.
- Regular provision of water and continuous collection of O&M fund
- Change of staffs in waste transfer station and in facility. Behavior of staffs matters.
- Conflicts among stakeholders

II. Operational Activities

Activities in led with Kirtipur Municipality

- Conduct orientation and training to care taker and facility users.
- Detail orientation for operating equipment like Washing machine, RO and other accessories.
- Form WASH Facility Management Committee and conduct regular meeting.

The management committee shall include municipality, representative from 4 sanitation companies, representative of staffs and local representation.

- ↳ Conduct regular monitoring and supervision by the management committee.
- ↳ Timely replenishment of sanitation utilities and repair quickly as per need.
- ↳ Regular supply of water and electricity.
- ↳ Establish of operation and maintenance fund.
- ↳ Select reliant and trustworthy care taker or responsible operator.
- ↳ Municipality agreement with to be selected second party and in-house facility users.
- ↳ Assign a focal person from Kirtipur municipality.
- ↳ Develop a complaint and feedback mechanism to assigned person.
- ↳ Put necessary messages and notices where ever necessary.

Hygiene
messages

Warnings and
Notices

Time and
Schedule

Dos &
Don't s

Service Costs &
Rules

- ↳ Furthermore, the decision to enroll the appropriate operational plan shall be decided by meeting of the management committee.

Activities to implement through care taker and users

- ↳ Set up registration system to record number of users.
- ↳ Maintain logistics, supplies, consumption and plan for purchase.
- ↳ Follow rules and regulation, maintain discipline while using the facility.
- ↳ Feel ownership and wise use of resources.

III. Marketing Activities for Revenue Generation

- * Install board to display facility availability in front of the gate.
- * Peer to peer communication for promotion of facility.

2. APPENDIX

Appendix I : Template for purchase and Expense Record

Expense Records													
		Months 2078											
COST ITEMS		BAISHAKH	JESTHA	ASADH	SHRAWAN	BHADRA	ASHOJ	KARTIK	MANGSIR	POUSH	MAGH	FALGUN	CHAITRA
Sanitary Utilities	Harpic	Number											
		Expenses											
	Brush	Number											
		Expenses											
	Acids	Number											
		Expenses											
	Soap	Number											
		Expenses											
	Sanitizer	Number											
		Expenses											
	Broom/ jhadu	Number											
		Expenses											
	Mop	Number											
		Expenses											
	Detergent	Number											
		Expenses											
Water	Tanker	Tanker/Jar											
		Expense											
Electricity	bills	Unit											
		Expense											
Operator	Salary												
		Allowance											
Maintenance And Repair	materials												
		Technician charge											
		Misc											

Annex II: Facilities Supported by ENPHO/BORDA

Sanitation



Sanitation Facility

Sanitation Facility	Unit	Number	Additional Information
Male Toilet	No.s	2	Commode with cleaning sanitary equipments
Female Toilet	No.s	2	

Water



Water Reservoir with tank stand and RWH

Water Facility	Unit	Number	Additional Information
RO Water Filter	No.s	1	
Water tank	No.s	1	1000 liter
Dug well	No	1	
Rain Water Collection gutter	Sets	1	

Hygiene



Hygiene Facility	Unit	Number	Additional Information
Shower room (Women)	No.s	2	
Bathing unit (Men)	No.s	2	
Handwashing basins	Nos	2	In each section of men and women
Washing Machine	No.s	2	fully automatic 8kg front loaded Samsung Washing Machine.

Other Facilities



Other Facility	Unit	Number	Additional Information
Paved and landscaped sitting area	area	1	
Lockers	sets	2	