



SHG Business Models in Sanitation

June 2022

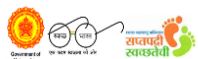


Acknowledgements

The Swachh Bharat Mission has successfully achieved open defecation free cities and aims towards achieving safe conveyance and treatment of waste. Government of Maharashtra launched “Swachh Maharashtra Mission Urban (SMMU)” , in alignment with the Swachh Bharat Mission (Urban), of Ministry of Urban Development, Government of India. The SMMU has developed strategic components to ensure coverage of sanitation facilities to all ULBs in the state. This is being done through financial and programmatic support to households and ULBs for community and/or household level sanitation. It is heartening to note that the state is performing extremely well and making an impact on millions of lives.

The Swachh Maharashtra Mission strategy envisages converging the sanitation aspects with the livelihood opportunities. With SBM providing new infrastructure creation in cities, there emerges a compelling requirement for developing skilled human resources that support its operations, management, and maintenance in a sustainable manner. The Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) under the aegis of MoHUA, envisages creation of livelihood opportunities for the urban poor. The SBM- NULM convergence in Maharashtra recognizes the huge opportunity linked to livelihood creation for urban poor, especially for women (eligible under the NULM), and sanitation workers who are the most stigmatized and excluded populations of the country.

Drawing from the principles of DAY-NULM and SBM-U’s convergence guidelines, Center for Water and Sanitation (CWAS), CRDF, CEPT University, and Urban Management Centre (UMC) have developed a strategy for the State of Maharashtra to operationalize a convergence plan. This document will help Urban Local Bodies (ULBs) and the SHGs and marginalized communities to identify a suitable business model for the sanitation work opportunity. The team is thankful to the immense support of the Directorate of Municipal Council, Maharashtra, Govt. of Maharashtra- Urban Development Dept and Swachh Maharashtra Mission for Urban Areas.



Outline

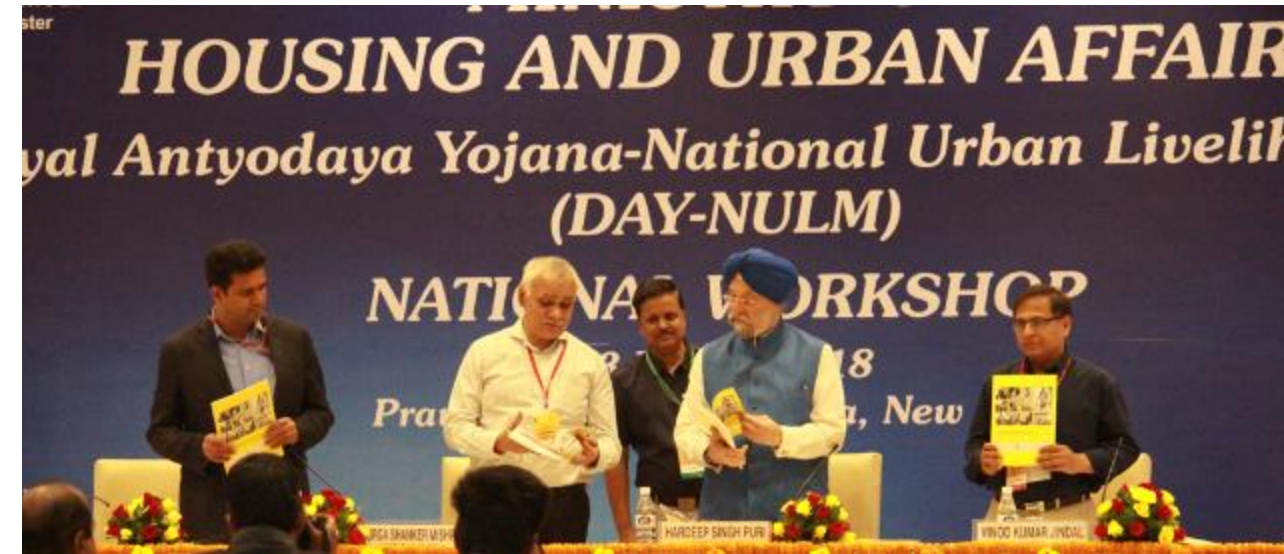
1. Context of SBM and NULM convergence
2. Engaging SHGs across the sanitation value chain
3. Summary of Business Models in sanitation
4. Summary of other Business Models in sanitation and SWM
5. Key lessons emerging from the existing SHG linked Business Models
6. Business Model details and Case Studies

Convergence Guidelines by MoHUA

The Ministry of Housing and Urban Affairs (MoHUA) published the DAY-NULM and SBM convergence guidelines for the implementation of the program.

“Empowering Marginalized Groups - Convergence Between SBM and DAY-NULM”-
March 2018,

The guideline outlines how infrastructure and operational structures specific to each of the two missions may be utilized to achieve dual objectives.



Source : MoHUA, Empowering Marginalized Groups - Convergence Between SBM and DAY- NULM, March 2018

Framework for convergence

- Construction of Individual Households Toilets
- Construction of Community & Public toilets
- Door to Door Collection and Segregation
- Behaviour Change communication
- Waste to Energy

SWACHH BHARAT MISSION - URBAN

- Social Mobilisation and Institutional Development (SMID)
- Employment through Skill Training and Placement (ESTP)
- Self -Employment Programme (SEP)

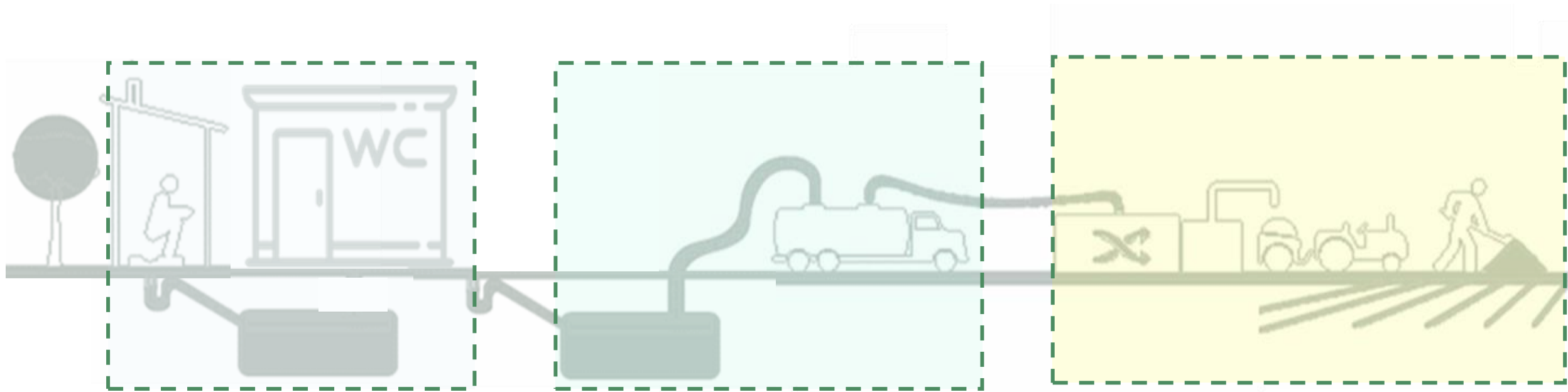
DAY-NULM

SANITATION/SBM LIVELIHOODS CONVERGENCE

- Strengthening community engagement platforms for sanitation/SWM workers
- Skilling and placement in Sanitation/SWM sector jobs
- Promoting Sanitation/SWM based livelihoods**
- Financial Access and support for Sanitation/SWM enterprises**
- Capacity Building of SHGs on Financial literacy/ soft skills/ Entrepreneurship development modules**
- Capacity building of Mission Management units for Sanitation/SWM livelihoods convergence

Source : MoHUA, Empowering Marginalized Groups - Convergence Between SBM and DAY- NULM, March 2018

Possibilities of Engaging SHGs in the Sanitation Value chain



1. Operations and maintenance of CT/PTs

1. SHGs using Government-owned vehicles for operations for scheduled desludging
2. SHGs filling data in monitoring apps during desludging activity
3. SHGs leasing government owned vehicles for demand desludging activity
4. SHGs independently running demand based desludging services

1. SHGs operating Faecal Sludge Treatment Plants
2. SHGs performing landscaping and urban forestry work at FSTPs
3. SHGs operating sanitation resource center at FSTP site
4. Composting at the FSTP site

Summary of Business Models for SHGs in Sanitation – 1/2

Name of model		Scope of model	Type of Contract	Value	Capacity Building
Access and Collection					
1	Operations and maintenance of Community Toilet/Public Toilet by SHGs	ULB awards a contract to a SHG for operating and maintaining the CT/PT blocks. The ULBs will pay monthly fees to the SHGs.	Service contract between ULB and SHG	Opex cost: ~Rs. 20,000 per toilet block per month	No specific capacity building is required
1a	Operations and maintenance for Community Toilet/Public Toilet by ALFs at Hingoli, Maharashtra	ULB awards a contract to ALF for operating and maintaining the CT/PT.	Work order given by ULB to SHGs. Service contracts for three years	Rs. 13,200 per toilet block per month paid by ULB to ALFs	No capacity building required
Conveyance					
2.	SHGs using Government-owned vehicles for operations for scheduled desludging	The SHG group will lease the desludging trucks from ULB and run the operations and maintenance for scheduled desludging service of septic tanks	SHG leasing infrastructure from ULB. Service contract between ULB and SHG	Opex cost: ~Rs. 1500 per trip	Technical capacity building Capacity building on using app for monitoring
3.	SHGs filling data in monitoring apps during desludging activity	The SHG group will accompany the desludging operator and fill in the data required during desludging. This will be filled on an online platform	Service contract between ULB and SHG	Capex investment ~Rs. 10,000 Opex cost ~ Rs. 15,000	Capacity building on using app for monitoring
4.	SHGs leasing government owned vehicles for demand desludging activity	The SHG group will lease the desludging truck from the local government and will use it to provide demand-based desludging service in the city.	Service contract between SHG and ULB. SHG leasing infrastructure from ULB	Opex cost: ~Rs. 1500 per trip	Technical capacity building and following SOP Capacity building on using app for monitoring
4a.	CLF using government owned vehicle for demand based desludging activity in Latur, Maharashtra	The CLF uses desludging truck of ULB to provide desludging service in the city of Vasai-Virar. Total 23 SHG members are involved in this work. The demand reached to CLF through ULB or directly by households too.	Service contract between CLF and ULB	The Solid Waste Department pays Rs. 500 per septic tank cleaning to ALF members	ALF members were trained on usage of PPE and operations of desludging by the ULB.



Summary of Business Models for SHGs in Sanitation– 2/2

	Name of model	Scope of model	Type of Contract	Value	Capacity Building
5	SHGs independently running demand based desludging services	The SHG group will buy their own desludging trucks and run the demand based desludging service	License from ULB	Capex investment: 15-20 L per truck Opex: ~ Rs. 1500 per trip	Technical capacity building
Treatment					
6	SHGs operating Faecal Sludge Treatment Plants	The SHG group will operate and maintain the FSTP handed over to them by ULB. It will self regulate and monitor the operations as well	Service Contract	Opex cost: ~Rs. 50,000 per month	Technical expertise is to be built of SHGs for operating the FSTP In-depth knowledge of SOP for Operating and maintaining FSTPs
6a.	SHGs operating FSTP at Berhampur, Odisha	The SHG group will operate and maintain the FSTP of Berhampur. The ULB will pay monthly fees to the SHG group	Service contract for 12 months	Contract value of Rs. 158,880 per month	BeMC conducted capacity building of the CLF with the help of SUDA and OWSSB. BeMC trained CLF on using tools and equipment before starting work
7	SHGs performing landscaping and urban forestry work at FSTPs	The SHG group will carry out the landscaping work at the FSTP area, urban forestry maintenance out of treated WW and solids at FSTP	Service contract	Opex cost: Maintenance charge- ~Rs. 15-20,000 per month Labor charge ~Rs. 300/day	Skill development for gardening and for any particular urban forestry method adopted at the site
7a.	SHGs performing landscaping and urban forestry work at Sinnar FSTP	The SHG will maintain the landscape and urban forest at the FSTP site. Of the 3 bids received, one SHG was awarded the contract.	Integrated one year contract for landscape and urban forest work	Contract value of Rs. 35,000 per month	SMC will organize at least one training session for SHG to provide them handholding support to understand landscaping and urban forest maintenance work
8	SHGs operating sanitation resource center at FSTP site	The SHG group will operate and maintain the resource center which will be located at the FSTP site.	Service contract	Opex cost: ~Rs. 10-15,000	Technical capacity building on operating the devices, etc at the resource center
9	Composting at the FSTP site	The SHG group will operate and maintain the composting facility at the FSTP site	Service contract	Opex cost: ~Rs. 15-20,000	Skill building on making compost from dried sludge and SWM organic waste

Summary of Other Potential Business Models for SHGs in Sanitation and SWM – 1/2

Name of model	Scope of model	Type of Contract	Value	Capacity Building	
Other Business models					
1	Sanitary napkin manufacturing unit	The SHG group will manage and implement the production, sales and distribution of napkins. The revenue will be based on the sale of sanitary napkins.	No contract/license required	Capex investment: Rs. 2.5 lakh Opex cost: 1.5 lakh per month	Technical training of SHG group on production technique of napkins
1a.	Production of sanitary napkins by SHGs in Wani, Maharashtra	3 ALF initiated 'Stay Fine', a women's based enterprise was established. They used the seed capital of the SHG's revolving fund under the ALF. ULB has provided designated space to the enterprise in the council office. The sanitary napkins are sold door-to-door through ASHA workers	No contract/license	Capex investment: Rs. 4.5 lakh	Capacity Building of SHGs by ULBs to initiate enterprise ULB organised multiple study tours for women to understand the production process involved in setting up a sanitary napkin production unit
2	Vermicomposting unit	The SHGs will set up the Vermicompost unit and prepare the vermicompost. The revenue will be based on sale of vermicompost and earthworms.	No contract/license required	Capex investment: Rs. 5,000 Opex cost: Rs. 2,000 per cycle	Skill building on making compost
3	Engaging SHGs in Door to Door Waste Collection in Bhadravati, Maharashtra	The SHGs conduct door to door waste collection from households, segregation and composting in Bhadravati. The SHG will lease the collection vehicles from ULB	7 months Contract between ULB and SHG	The SHG will collect Rs. 38 per household	--
4	Engaging SHG for Door to Door Waste Collection in Tuljapur, Maharashtra	SHG women have been contracted in their own ward to collect door to door waste. They are appointed as "Swachhta Tai". They are also involved in awareness activities in relations to SWM	Contract between ULB and SHG	--	--

Summary of Other Potential Business Models for SHGs in Sanitation and SWM– 2/2

Name of model	Scope of model	Type of Contract	Value	Capacity Building	
Other Business models					
5	Engaging SHG in cleaning and supervision of waste collection in Panchgani, Maharashtra	SHG performs sweeping, and provides supervision of segregated waste during door to door waste collection. One SHG is responsible for cleaning while the other two are involved in supervision of segregation of waste	Two years Contract between ULB and SHG	Rs. 8,000 per person per month is paid by ULB	Skill building workshops are conducted with SHG groups monthly on various topics related to solid waste management
6	Engagement of SHG in Operations and Maintenance of Hand Wash Facilities in Sinnar, Maharashtra	Supervision of functioning of Hand Washing Facilities by SHGs SHG members monitor facilities regularly and report to SMC in provided format. They also create awareness about hand-washing practices	SHGs are engaged for monitoring and awareness in their localities	--	SHG attends the fortnightly meetings organised by SMC to discuss on points related to hand washing facilities.
7	Engaging SHGs for awareness in communities in Mira Bhayander, Maharashtra	SHGs are engaged for awareness in communities for dry and wet waste segregation and other SWM awareness. They also prepared facemasks during Covid-19 period.	Work order was given by ULB to SHGs	--	SHG women trained in vocational courses such as tailoring have been stitching masks for sale to citizens

Key lessons emerging from the existing SHG linked Business Models (1/2)

Contracts leveraging SHGs

Background

- The process of bidding or tendering for contracts require potential bidders to have high turnovers, even when the work is small and could easily be done by an independent SHG
- A major challenge for SHGs is inconsistent payment cycles

Lessons

- SHG-friendly and context-specific EOI/RFP/contracts are needed; ULBs need to adopt clauses that allow SHGs to fulfil alternative criteria to qualify for the bidding process
- Incentivize engagement of SHGs for formal contract for municipal services either through state; directives through GR or linking with flagship programme is a key
- Need to ensure payment based on work done by SHG with regularity

Key lessons emerging from the existing SHG linked Business Models (2/2)

Handholding support and guidance

Background

- The SHGs are unaware of the work opportunities in the sanitation sector

Lessons

- To encourage and support the SHGs in taking up sanitation related work, handholding support from the ULBs is needed
- ULBs need to identify particular areas of work in which the SHGs can be involved and raise awareness in its regards

Capacity Building

Background

- Many SHGs lack in entrepreneur development
- Continuous skill development is needed to strengthen the SHGs

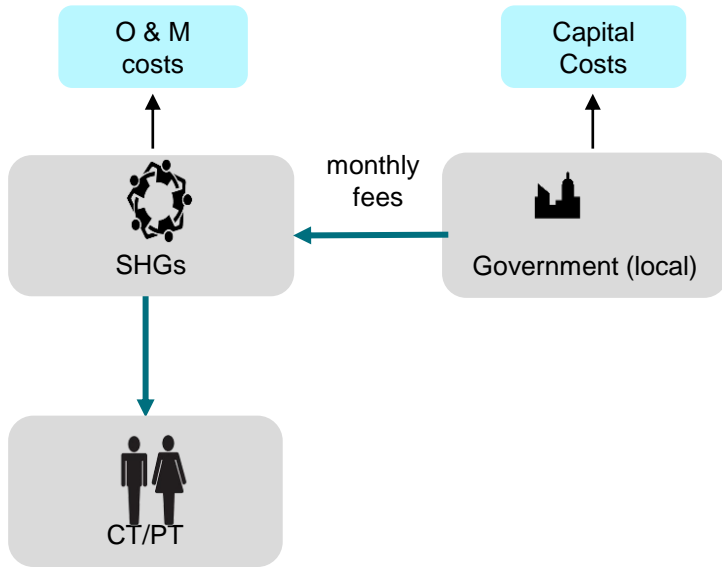
Lessons

- Capacity building of SHGs in the field of work is needed.
- Technical/ skill development lessons, entrepreneurial skill development and support is required for SHGs



SHGs at Community Toilets/ Public Toilets

BM-1: Operation & Maintenance of Community Toilet/ Public Toilet contracted to SHGs (1/2)



Model description: ULB awards a contract to a SHG for operating and maintaining the CT/PT. The ULBs will pay monthly fees to the SHGs. Payment can be decided against a fixed deliverable. Minor repairs are such as for handles, tap, bulb, etc. will be done by SHGs.



Funding and Financing:

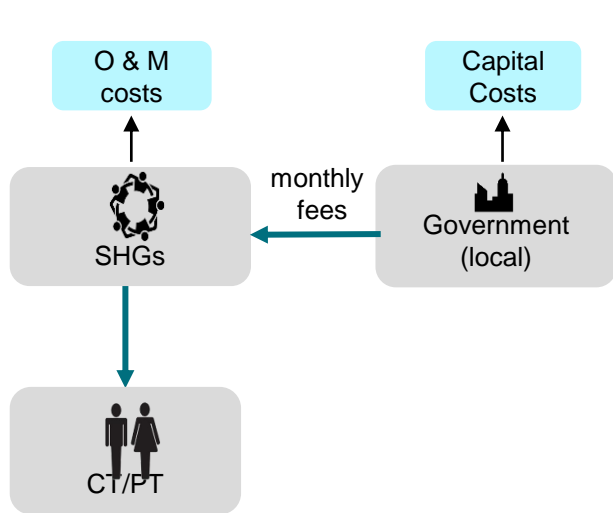
Capex Cost	By ULB/state government
Opex cost	By SHG
Expenditure under Opex:	<ol style="list-style-type: none"> 1. Operations and maintenance of toilets <ul style="list-style-type: none"> • Cleaning agents • SHG to bear charges for all petty expenses consumed on site: Brooms, wipers, cleaners, dustpan, dustbins, etc. • Petty expenses= ~10,000 2. Human resources <ul style="list-style-type: none"> • 2 worker per toilet block in single shift – 4 worker per toilet block • Cost: 4000*4= 16,000 3. Electricity cost and periodic maintenance of CT/PT will be funded separately by ULB. Provision of water supply will be the responsibility of the ULB
Sources of revenue for SHGs:	<ul style="list-style-type: none"> • The SHGs funds the cost through a fixed O&M fee from the municipality.



Mode of operation:

Mode of Operation	Service contract between SHG and ULB
Payment to SHG as per service contract	The municipality typically funds it through a combination of local taxes and state and national government financial assistance

BM-1: Operation & Maintenance of Community Toilet/ Public Toilet contracted to SHGs (2/2)



Monitoring/ performance evaluation for service contract payments:

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of CT/PTs
- SHGs to maintain daily attendance record
- Signed daily checklist sheet of cleaning items at CT/PTs to be submitted to ULB every month



Risks:

Delayed payments to SHGs



Capacity building

No specific capacity building is required

Case 1a: Operation & Maintenance of Community Toilet / Public Toilet contracted to SHGs in Hingoli, Maharashtra (1/2)

The ALFs have been involved in good morning pathaks during making Hingoli ODF and are now involved in O & M of toilets. In order to implement this a resolution was passed in June 2017 in the general body meeting that under the Swachh Maharashtra Abiyan, SHGs would be involved in O&M of all CT/PTs in the city. Work orders were signed by the ALF and the ULB, with a period of engagement for 3 years.



Funding and Financing:

Capex Cost

By ULB/state government

Opex cost

By SHG

Expenditure under Opex:

1. Operations and maintenance of toilets
 - Petty expenses: Cleaning agents, brooms, wipers, cleaners, bucket, mug, etc.
 - Minor repairs to the handles, tap, bulb, etc.
2. Human resources
 - 2 worker per toilet block in single shift. The women work in two shifts – 5.30 am to 10 am/ 5 to 7 pm – 4 worker per toilet block

Sources of revenue for SHGs:

- The SHGs funds the cost through a fixed O&M fee from the municipality. Amount received to the ALF per toilet block is Rs. 13,200.



Mode of operation:

Mode of Operation

Work order given by ULB to SHGs. Service contracts for three years

S N	Name of ALF	No. of SHGs in the ALF	Total no. of women
1	Rajmata Jijau, Jijamata nagar	15	150
2	Sambhaji Vidyasagar, Mastanshah nagar	15	150
3	Niranjan Baba, Mahadevwadi	20	200
4	Savitribai Phule, tofkhana	10	100
5	Amar, Risala	20	200
	Total	80	800

Case1a: Operation & Maintenance of Community Toilet / Public Toilet contracted to SHGs in Hingoli, Maharashtra (2/2)



हिंगोलीचा स्वच्छता संघ राज्यात प्रथम, तर देशात तिसरा क्रमांक

प्रतिनिधी हिंगोली

येथील नगर परिषद हद्दीतील तब्बल तीन वस्तीस्तर स्वच्छता संघांनी देशपातळीवर प्रथम क्रमांकासाठी राज्याचे नेतृत्व केले. त्यात एका संघाने देशात तिसरा तर महाराष्ट्रातून प्रथम क्रमांक पटकाविला. स्वच्छता मिशन शहरी पातळीवर वस्तीस्तरावर रायविण्यासाठी ८ वचत गटांचा एक संघ तयार करण्यात आला होता. आणि त्या संघांचा स्वच्छता विषयक स्पर्धा लढवण्यात आली होती. त्यात राज्य आणि केंद्रांच्या पथकांनी वस्तीस्तरावर झालेल्या कामांची तपासणी करून देशपातळीवरील स्पर्धेसाठी संघांची निवड केली होती. त्यात हिंगोली शहरातील तब्बल तीन संघांची निवड झाली होती. त्यामध्ये संभाजी विद्यासागर संघ, निरंजनबाबा संघ आणि राजमाता संघ या तीन संघांचा समावेश आहे. तर राज्यातून असे १० संघ देशपातळीवरील स्पर्धेसाठी पाठविण्यात आले होते. आज केंद्रीय गृह आणि शहरी मंत्रालयाच्या वतीने नवी दिल्लीत घेण्यात आलेल्या कार्यक्रमात राज्य आणि देशपातळीवरील प्रथम, द्वितीय आणि तृतीय अशा संघांची निवड करण्यात आली. त्यात येथील

राज्यमंत्री हरदीपसिंग पुरी यांच्याकडून पुरस्कार स्वीकारताना संभाजी विद्यासागर बचत गट संघाच्या मीराबाई गायकवाड व न. प. चे कर्मचारी.

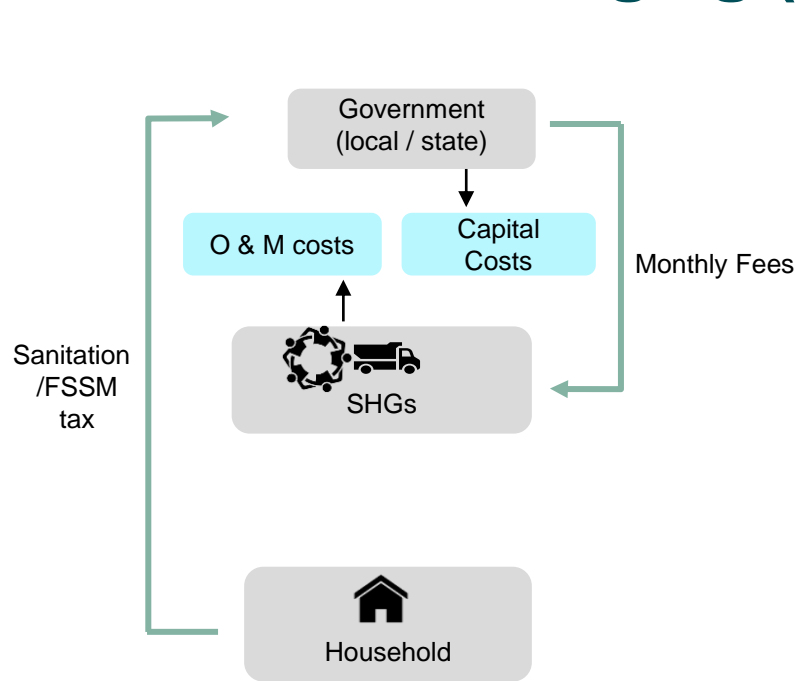
पुरस्कारांचे वितरण गृहनिर्माण आणि नगरी मंत्रालयाचे राज्यमंत्री हरदीपसिंग पुरी, या विभागाचे सचिव दुर्गाशंकर मिश्रा यांच्या हस्ते करण्यात आले. स्वच्छता मिशन यशस्वी करण्यासाठी हिंगोली नगर परिषदेचे मुख्याधिकारी रामदास पाटोल व नगर परिषदेच्या सर्व कर्मचाऱ्यांनी दौड वर्षांपासून चोख कार्यक्रम राबविले आहेत. त्याचोच परिणती म्हणून नगर परिषदेला राज्यात प्रथम क्रमांकाचे पारितोषिकही मिळाले. तर पुन्हा हिंगोलीच्याच वस्तीस्तर संघाने देशात तिसरा क्रमांक मिळाल्याने व राज्यातून पाठविण्यात १० संघात हिंगोलीच्याच तीन संघांनी स्थान मिळविल्याने शहराच्या लौकिकात भर पडली आहे.

Sambhaji Vidyasagar Vastitar Sangh has received a national award on 3rd position – ‘Swachhata Excellence Award’ in 2018



SHGs for desludging service

BM-2: SHGs using Government-owned vehicles for operations for scheduled desludging (1/2)



Funding and Financing:

Capex Cost	By ULB/state government
Opex cost	By SHG
Expenditure under Opex:	<ol style="list-style-type: none"> Operations and maintenance <ul style="list-style-type: none"> The SHGs clean the pre-defined septic tanks as per the schedule Cleaning septic tanks- per trip cost= ~1500 rs/trip Per trip cost will cover fuel cost, human resources cost Human resources <ul style="list-style-type: none"> 1 driver, 2 helpers Cost: $1 \times 15,000 + 2 \times 10,000 = 35,000$/ month Repairs <ul style="list-style-type: none"> Minor repairs cost ~5000 rs/month Periodic maintenance and any major repair of the desludging vehicle will be funded separately by ULB.
Sources of revenue for SHGs:	<ul style="list-style-type: none"> The SHGs funds the cost through fees from the municipality against the number of septic tanks cleaned per month

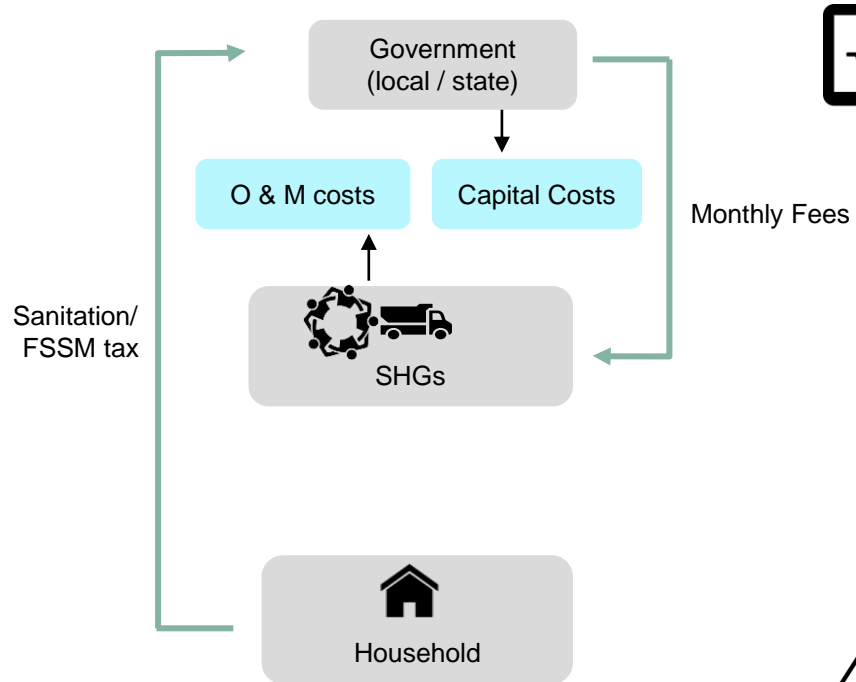
Model description: In this model, the SHG group will lease the desludging trucks from ULB and run the operations and maintenance for scheduled desludging. Under scheduled desludging, all septic tanks in a city are desludged once during a fixed cycle. So pre-defined septic tanks will have to be desludged by the SHG group daily. The SHG will need to have a contract for carrying out scheduled desludging activity in the city.



Mode of operation:

Mode of Operation	Contract with ULB
Payment to SHG as per service contract	The municipality typically funds it through the sanitation tax/ local taxes

BM-2: SHGs using Government-owned vehicles for operations for scheduled desludging (2/2)



Monitoring/ performance evaluation for service contract payments

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of desludging operations
- Paper based monitoring capturing details of septic tank cleaning with signatures of households and FSTP operator. To verify if the collected septage is disposed at the designated site
- A monitoring app can be developed which monitors if the desludging trucks emptied the designated septic tank and disposed the septage at the FSTP/designated disposal site. It will also geotag the household, truck and FSTP site.



Risks:

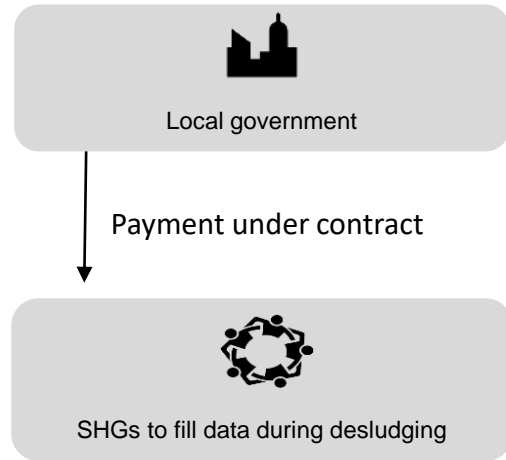
- Breakdown of vehicles which will lead to delay in work
- Delayed payments by ULB



Capacity building

- Technical capacity building
- Capacity building on using app for monitoring

BM-3: SHGs filling data in monitoring app (SaniTab/ SaniTrack) or conducting surveys during desludging services (1/2)



Model description: In this model, the SHG group will accompany the desludging operator and fill in the data required during desludging. This will be filled on an online platform and later any data entry in relations to this will be the responsibility of the SHG group. Monthly payment will be released by the local government as per the contract between SHGs and ULBs.



Funding and Financing:

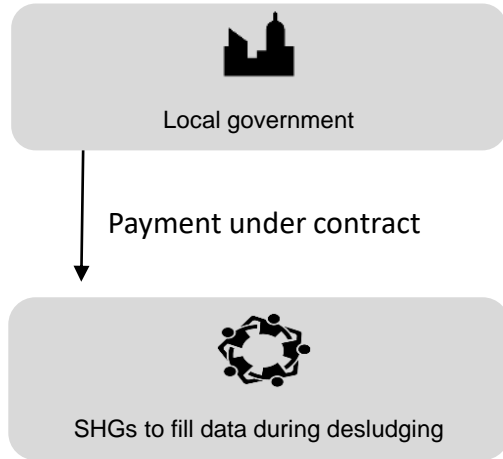
Capex Cost	By SHG/ By ULB
Investment under Capex	Android phones- 2 phones- Rs 10,000
Opex cost	By SHG
Expenditure under Opex:	<ol style="list-style-type: none"> 1. Operations and maintenance 2. Human resources <ul style="list-style-type: none"> • 1 on field data manager • 1 data operator • Cost: $1 * 8,000 + 1 * 8,000 = 16,000$ 3. Repairs <ul style="list-style-type: none"> • Minor repairs cost ~500 rs/month
Sources of revenue for SHGs:	<ul style="list-style-type: none"> • The SHGs funds the cost through fixed monthly fees from the municipality



Mode of operation:

Mode of Operation	Contract with ULB
Payment to SHG as per service contract	The municipality typically funds it through the sanitation tax/ local taxes

BM-3: SHGs filling data in monitoring app (SaniTab/ SaniTrack) or conducting surveys during desludging services (2/2)



Monitoring/ performance evaluation for service contract payments

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of desludging operations
- All details under the data entry checklist against all the septic tanks cleaned per month



Risks:

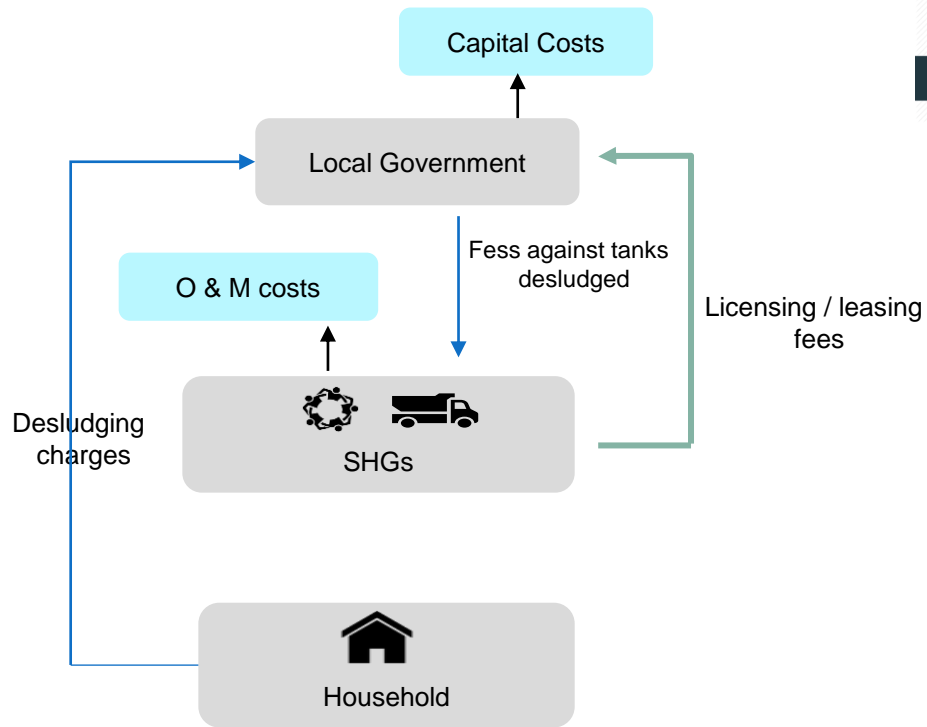
- Delayed payments by ULB



Capacity building

- Capacity building on using app for monitoring

BM-4: SHGs leasing government owned vehicles for demand desludging activity (1/2)



Funding and Financing:

Capex Cost By ULB/state government

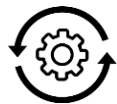
Opex cost By SHG

Expenditure under Opex:

1. Operations and maintenance
 - Cleaning septic tanks- per trip cost= ~1500 rs/trip
 - Per trip cost will cover fuel cost
2. Human resources
 - 1 driver, 2 helpers
 - Cost: 1*15,000 + 2* 10,000= 35,000/ month
3. Repairs
 - Minor repairs cost ~5000 rs/month
4. Periodic maintenance and any major repair of the desludging vehicle will be funded separately by ULB.

Sources of revenue for SHGs:

- The SHGs funds the cost through fees from the municipality against the number of septic tanks cleaned



Mode of operation:

Mode of Operation

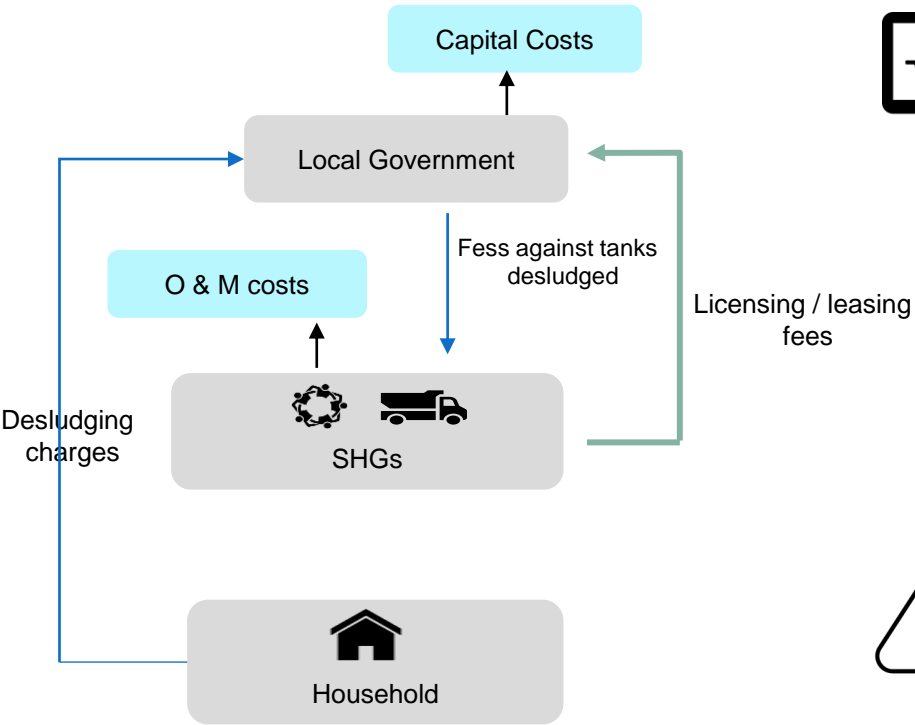
License from ULB and leasing infrastructure from ULB

Payment to SHG as per service contract

The municipality typically funds it through the user charges which are received from the households who gets their septic tanks cleaned

Model description: In this model, the SHG group will lease the desludging truck from the local government and will use to provide demand-based desludging in the city. The household's grievances for desludging the septic tank will be addressed by the SHGs and the households will pay the desludging charges at the Local government office. After completing the desludging activity, SHG members will generate a bill and submits to the ULB based on which they will be paid Rs per tank.

BM-4: SHGs leasing government owned vehicles for demand desludging activity (2/2)



Monitoring/ performance evaluation for service contract payments:

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of desludging operations
- To generate bills against each septic tank emptied to be submitted to ULB. The bill must have the signature of the household where desludging was conducted.
- A monitoring app can be developed which monitors if the desludging trucks emptied the designated septic tank and disposed the septage at the FSTP/designated disposal site



Risks:

- Breakdown of vehicles which will lead to delay in work
- Delayed payments to SHGs
- Low/uncertain demand for cleaning of septic tank



Capacity building

- Technical capacity building and following SOP
- Capacity building on using app for monitoring

Case 4a: Engagement of SHGs in desludging activity in Latur



Funding and Financing:

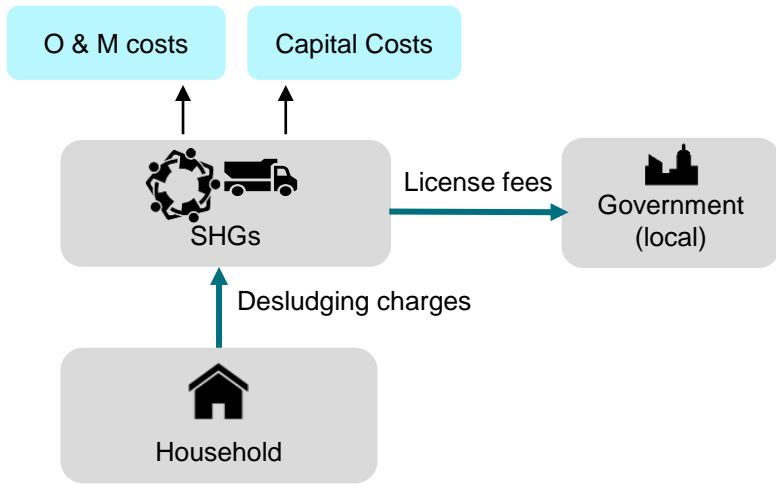
Capex Cost	By ULB/state government/donor
Opex cost	By SHG
Expenditure under Opex:	Operations and maintenance Human resources
Sources of revenue for SHGs:	<ul style="list-style-type: none"> The SHGs will collect Rs. 1.5/ liter for desludging the septic tank The revenue will depend on the number of septic tanks and amount of septage the SHGs desludge



Mode of operation:

Mode of Operation	Service permission given to the SHGs by the ULB
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BM-5: Demand based desludging independently run by SHGs (1/2)



Model description: In this model, the SHG group will buy their own desludging trucks and run the operations and maintenance of the demand based desludging activity. The SHG will need to take license/contract for carrying out desludging activity in the city.



Funding and Financing:

Capex Cost By SHG

Investment under Capex cost

- For desludging truck capacity 3 kl: 25 lakh;
- For desludging truck capacity 5 kl: 40 lakh

Opex cost By SHG

Expenditure under Opex:

1. Operations and maintenance
 - Cleaning septic tanks- per trip cost= ~1500 rs/trip
 - Per trip cost will cover fuel cost
2. Human resources
 - 1 driver, 2 helpers
 - Cost: $1 \times 15,000 + 2 \times 10,000 = 35,000$ / month
3. Repairs
 - Minor repairs cost ~5000 rs/month
4. Periodic maintenance and any major repair of the desludging vehicle
 - Periodic maintenance ~10,000 Rs/month

Sources of revenue for SHGs:

- The SHGs funds the cost through the user charges paid to them by the households whose septic tanks are cleaned

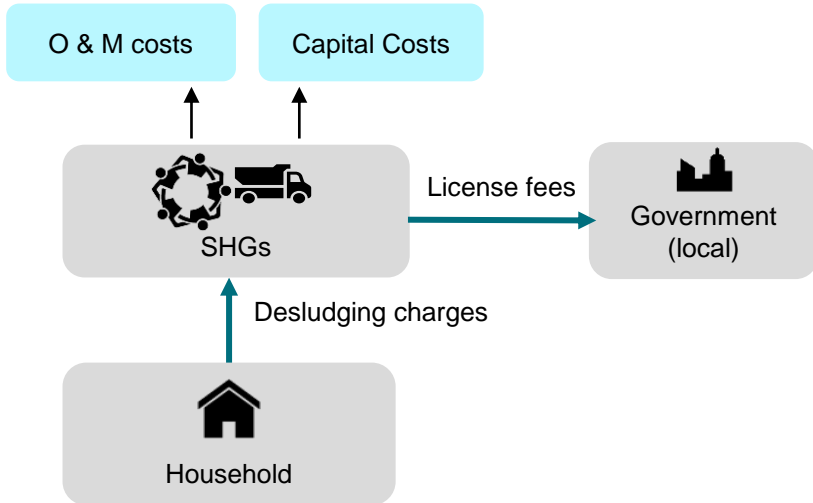


Mode of operation:

Mode of Operation

License from ULB

BM-5: Demand based desludging independently run by SHGs (2/2)



Monitoring of desludging service

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of desludging operations



Risks:

- Breakdown of vehicles which will lead to delay in work
- Investment required is high
- Low/uncertain demand for cleaning of septic tank



Capacity building

- Technical capacity building

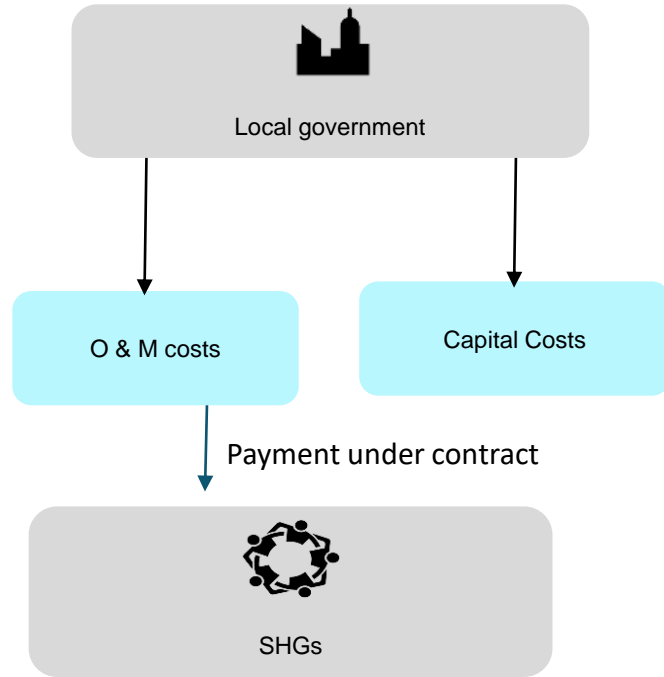


SHGs at Faecal Sludge Treatment Plant (FSTP)

BM-6: SHGs operating Faecal Sludge Treatment Plants (1/2)



Funding and Financing:



Capex Cost

By ULB/state government/donor

Opex cost

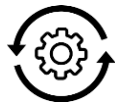
By SHG

Expenditure under Opex:

- Operations and maintenance activities (Based on technology)
 - Scraping of dry sludge from SDBs
 - Replanting Phytorids whenever required
 - Operating the motor pumps
 - Maintaining the site
 - SHG to bear charges for all petty expenses consumed on site during the regular course of O&M allotted to them under the Contract: Brooms, wipers, cleaners, dustpan, dustbins, etc- ~Rs. 5000 per month
- Human resources
 - 1 FSTP operator- Rs. 15,000 per month
 - 2 Helpers- 2* Rs. 10,000 per month
 - 1 Guard- 8,000 per month
 - Salary: 43,000 per month
- Electricity cost and periodic maintenance of FSTP units will be funded separately by ULB. Water supply will be provided by ULB.

Sources of revenue for SHGs:

- The SHGs funds the cost through a fixed O&M fee from the municipality.
- They can also raise revenue from the sale of reuse products.



Mode of operation:

Mode of Operation

Service contract between SHG and ULB

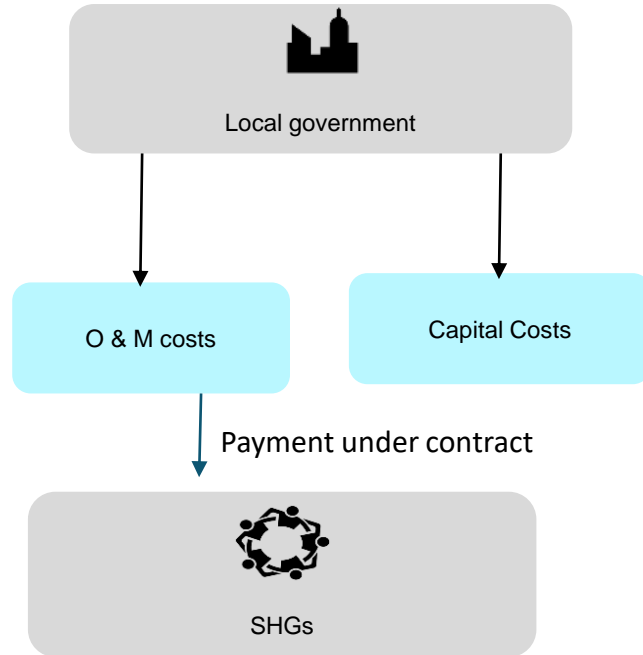
Payment to SHG as per service contract

The municipality typically funds it through a combination of local taxes and state and national government financial assistance

Model description:

In this model, the government finances, designs and constructs the FSTP. The SHG group will operate and maintain the FSTP. It will self regulate and monitor the operations as well. Monthly payment will be released by the local government as per the contract between SHGs and ULBs.

BM-6: SHGs operating Faecal Sludge Treatment Plants (2/2)



Monitoring/ performance evaluation for service contract payments:

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision of FSTP
- SHGs to maintain daily attendance record
- Daily logbook book maintenance at FSTP for disposal of sludge through desludging vehicles
- Logbook maintenance of sludge scrapping frequency and replanting phytorids with images
- Getting quality of treated samples checked regularly. Test reports to be provided.



Risks:

- Delay in payments by the ULB



Capacity building and resources needed

- Technical expertise is to be built of SHGs for operating the FSTP
- In-depth knowledge of SOP for Operating and maintaining FSTPs
- Regular coordination meetings between SHGs and ULBs
- ULB to provide additional compensation for these tasks along with adequate training, tools, equipment and PPE.

Case 6a: Operation and maintenance of FSTP at Berhampur, Odisha by City Level Federation of SHGs (1/3)

Berhampur Municipal Council is the custodian of the FSTP and Agrata CLF is the city level Federation of all the SHGs in the city and is engaged in taking up the task of operation and maintenance work at FSTP. After the joint inspection by BeMC and CLF, the FSTP was handover to CLF for its O&M.



Funding and Financing:

Capex Cost	By ULB/state government/donor
Opex cost	By SHG
Expenditure under Opex:	<ol style="list-style-type: none"> 1. Operations and maintenance activities <ul style="list-style-type: none"> • CLF shall bear all expenses related to operation and maintenance of the SeTP • CLF to bear charges for all petty expenses consumed on site during the regular course of O&M : Brooms, wipers, cleaners, dustpan, dustbins, etc- ~Rs. 5000 per month 2. Human resources <ul style="list-style-type: none"> • 1 Chemist cum plant manager- Rs. 26,000 per month • 1 pump driver cum electrician- Rs. 17,500 per month • 2 Sludge cum vacuum tank operator- Rs. 34,000 per month • 3 watchman- Rs. 45,000 • 2 Gardener- Rs. 30,000 3. Any other form of maintenance activities such as preventive or breakdown maintenance shall be the responsibility of BeMC. Tools, equipments, PPE kits will also be provided by BeMC. expenditure for compliances, certifications, tests, equipment at the lab as prescribed
Sources of revenue for SHGs:	<ul style="list-style-type: none"> • The SHGs funds will be compensate by the BeMC for deploying human resource and performing their duties • CLF can take-up related revenue generating activities such as composting, reuse of biosolid, etc. within the SeTP premises with written approval from BeMC • If tipping fee is introduced in future through cesspool operation vehicles, the same will be collected by CLF and the same will be deducted from amount paid by BeMC to CLF.

Case 6a: Operation and maintenance of FSTP at Berhampur, Odisha by City Level Federation of SHGs (2/3)



Mode of operation:

Mode of Operation

Service contract between CLF and ULB



Monitoring/ performance evaluation for service contract payments:

- BeMC shall deploy one senior Engineer as the Nodal Officer to have overall supervision of SeTPs and deploy a subordinate engineer for assisting him or her to discharge this function
- Daily attendance and HR deployment shall be verified by Nodal officer appointed by BeMC.



Risks:

- Delayed payment by BeMC.



Capacity building and resources needed

- BeMC shall take responsibility of the capacity building of the CLF with the help of SUDA and OWSSB.
- BeMC shall ensure CLF is trained on using these tools and equipment before starting work



Case 6a: Operation and maintenance of FSTP at Berhampur, Odisha by City Level Federation of SHGs (3/3)

Specific responsibilities of the local government or OWSSB:

- BeMC to handover proper working FSTP
- Any other form of maintenance activities such as preventive or breakdown maintenance shall be the responsibility of BeMC.
- Tools, equipments, PPE kits will also be provided by BeMC
- Adequate consumables, equipment, tools, PPE and supplies to conduct the laboratory tests for various parameters of the septage
- To support CLF on testing and regular technical support on managing the SeTP, a technical resource shall be provided by OWSSB at its own cost and deputed at the SeTP
- To submit quarterly report to the state
- It shall conduct bi-monthly review of the O&M along with CLF, Technical resource deployed at the SeTP.
- To ensure disposal of all septage at SeTP by all desludging operators
- To ensure adequate and regular supply of organic municipal solid waste for co-composting inside the SeTP

Specific responsibilities of the CLFs:

- CLF to keep record of PPE. CLF on their own shall procure PPE anytime as per requirement.
- It shall submit a list of all the members/ SHG who would be engaged at the plant along with the resolution signed by all members/SHG to be engaged at the SeTP including their assigned roles and remuneration agreed mutually
- CLF shall always ensure that necessary know-how, expertise and personnel are identified and engaged
- The CLF shall ensure proper safety precautions are taken while operating the SeTP and will use Personal Protective Equipment (PPE)
- The CLF shall ensure for a regular health check-up of all its members

BM-7: SHGs performing landscaping and urban forestry work at FSTPs (1/2)



Funding and Financing:

Capex Cost By ULB/state government/donor

Opex cost By SHG

Expenditure under Opex:

1. Operations and maintenance activities
 - Daily maintenance of landscape and urban forest site
 - Mowing/trimming of all lawn areas- Rs. 10,000-20,000
 - Periodical spraying of pesticides
 - Watering the plants regularly
 - Procurement of various materials like plants, fertilizers, pesticides, lawn mower and other garden tools (khurpi, rake, shovel, hedge shears, pruning shears) required for upkeep of the landscaped areas shall be done by the SHG- ~ Rs. 5000 per month
2. Human resources
 - Labour charges- Rs. 300/day
3. Electricity cost and water supply will be provided and funded by the ULB. Water from the treated effluent tank will be used for watering the plants in landscape area and urban forest. Additional requirement of water will be satisfied by the ULB

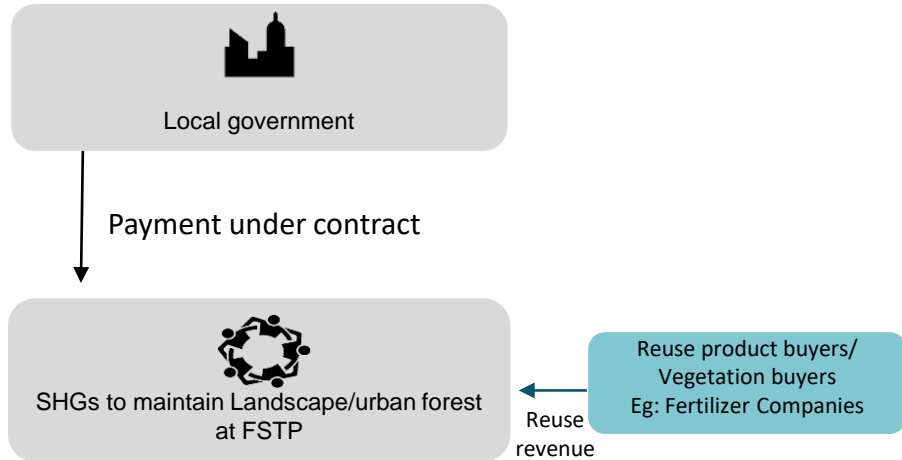
Sources of revenue for SHGs:

- The SHGs funds the cost through a fixed O&M fee from the municipality.
- They can also raise revenue from the sale of fertilizer or vegetation/ plantation grown at FSTP landscape/urban forestry site.

Mode of operation:

Mode of Operation Service contract between SHG and ULB

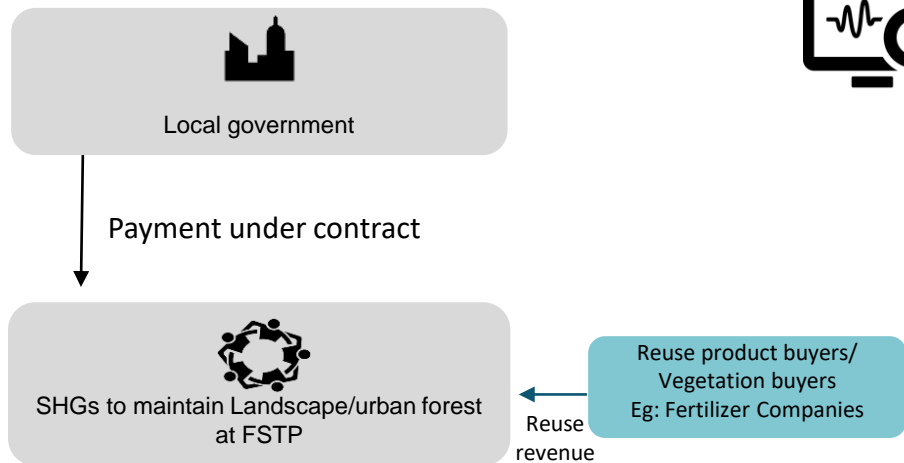
Payment to SHG as per service contract The municipality typically funds it through a combination of local taxes and state and national government financial assistance



Model description: In this model, the SHG group will carry out the landscaping work at the FSTP area, urban forestry maintenance or Cultivating cash crops out of treated WW and solids. Monthly payment will be released by the local government as per the contract between SHGs and ULBs. The revenue from the reuse products can be given as an incentive to the SHG group members.



BM-7: SHGs performing landscaping and urban forestry work at FSTPs (2/2)



Monitoring/ performance evaluation for service contract payments

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of FSTP site who will also inspect the FSTP landscape and urban forestry areas
- SHG will maintain a daily log book of the work done and materials used
- Monthly payment will be made to the SHG against submission of bills, list of materials/plants procured and activities that they have undertaken in a given month



Risks:

- Delayed payments by ULB

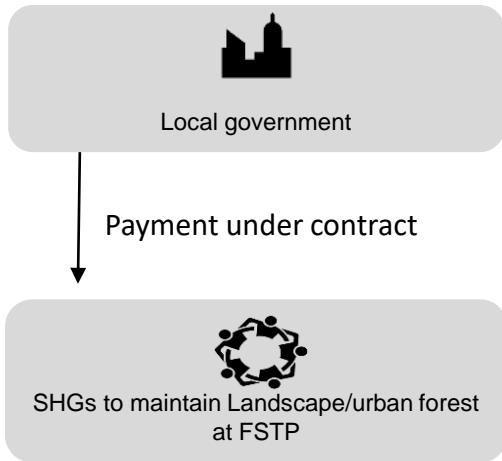


Capacity building

- Skill development for gardening and for any particular urban forestry method adopted at the site

Case 7a: Contract awarded to SHG for maintaining landscape and urban forest at Sinnar FSTP site (1/2)

A tender was floated by Sinnar Municipal Council for SHGs to maintain the landscape and urban forest at Sinnar FSTP. 3 bids were received from 3 SHGs. From this, the contract was awarded to one SHG group. The total contract value is of Rs. 35,000 per month which will be paid by the ULB to the SHG group.



Funding and Financing:

Capex Cost

By ULB/state government/donor

Opex cost

By SHG

Expenditure under Opex:

1. Operations and maintenance activities
 - Daily maintenance of landscape and urban forest site- cleaning, cutting and trimming of plants, spraying insecticides, applying manure, watering plants
 - Procurement of various materials like plants, fertilizers, pesticides, lawn mower and other garden tools (khurpi, rake, shovel, hedge shears, pruning shears) required for upkeep of the landscaped areas shall be done by the SHG
2. Human resources
 - Labour charges
3. Electricity cost and water supply will be provided and funded by the ULB. Water from the treated effluent tank will be used for watering the plants in landscape area and urban forest. Additional requirement of water will be satisfied by the ULB
4. **Total Opex cost ~ Rs. 35,000 per month**

Sources of revenue for SHGs:

- The SHG will fund the cost through a fixed O&M fee from the municipality.



Mode of operation:

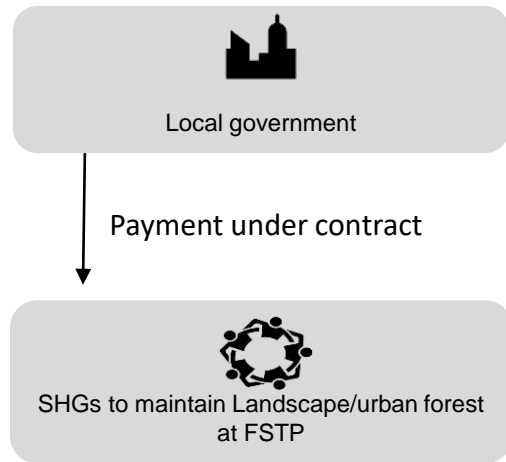
Mode of Operation

Service contract between SHG and ULB

Payment to SHG as per service contract

The municipality typically funds it through a combination of local taxes and state and national government financial assistance

Case 7a: Contract awarded to SHG for maintaining landscape and urban forest at Sinnar FSTP site (2/2)



Monitoring/ performance evaluation for service contract payments

- SHG will maintain a daily log book of the work done and materials used
- Monthly payment will be made to the SHG against submission of bills, list of materials/plants procured and activities that they have undertaken in a given month



Risks:

- SMC will open an escrow account in a nationalized bank to ensure timely monthly payment to SHG. This account will have a deposit equal to at least three months of payment to SHG. This will reduce the risks of delayed payments



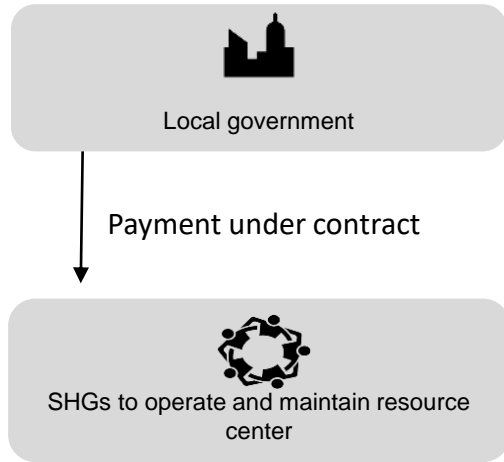
Capacity building

- In case the SHG is not aware on how to carry out maintenance work for the garden and urban forest at the FSTP, SMC will organize at least one training session for SHG to provide them handholding support to understand this aspect

BM-8: SHGs operating sanitation resource center at FSTP site (1/2)



Funding and Financing:



Capex Cost

By ULB/state government/donor

Opex cost

By SHG

Expenditure under Opex:

1. Operations and maintenance activities
2. Human resources
 - 1 resource center in-charge
 - 1 helper
 - Cost: $1 \times 8,000 + 1 \times 5,000 = 13,000$
3. Electricity cost and water supply will be provided and funded by the ULB

Sources of revenue for SHGs:

- The SHGs funds the cost through a fixed O&M fee from the municipality.

Model description: In this model, the SHG group will operate and maintain the resource center which will be located at the FSTP site. Monthly payment will be released by the local government as per the contract between SHGs and ULBs.



Mode of operation:

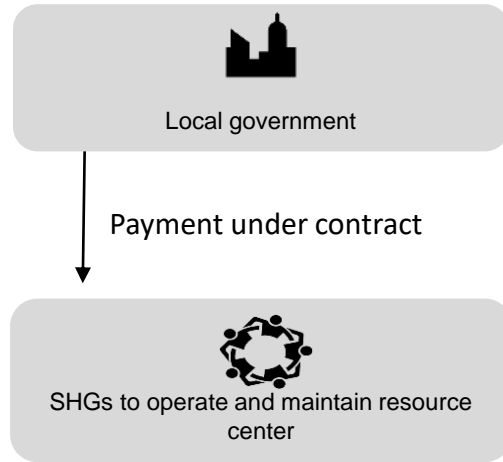
Mode of Operation

Service contract between SHG and ULB

Payment to SHG as per service contract

The municipality typically funds it through a combination of local taxes and state and national government financial assistance

BM-8: SHGs operating sanitation resource center at FSTP site (2/2)



Monitoring/ performance evaluation for service contract payments

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of FSTP site who will also inspect the resource center
- Details of numbers of SHG members that will be employed. Daily attendance record to be maintained by SHGs



Risks:

- Delayed payments by ULB



Capacity building

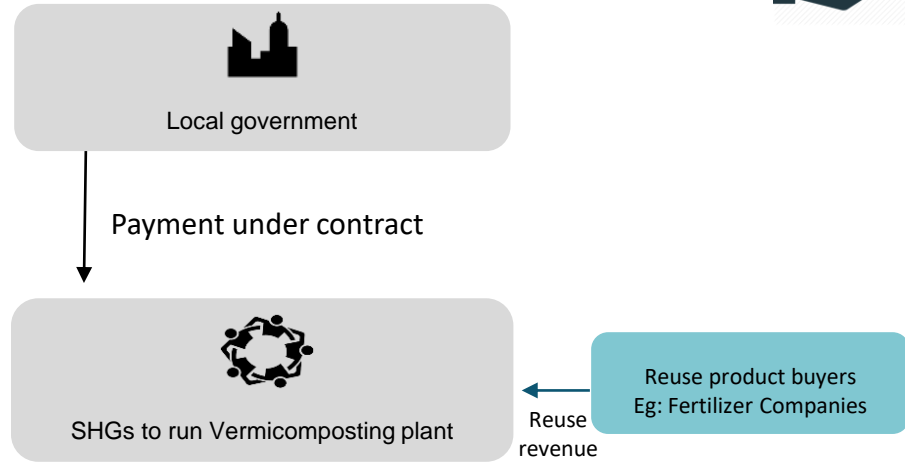
- Technical capacity building on operating the devices, etc at the resource center

BM-9: Composting at the FSTP site (1/2)



Funding and Financing:

Capex Cost	By SHG
Investment under Capex	Shaded space at FSTP site: Brick work, light thatched roof, compost bed ~Rs. 4,500-5,000
Opex cost	By SHG
Expenditure under Opex:	<ol style="list-style-type: none"> 1. Operations and maintenance activities <ul style="list-style-type: none"> • Equipment for daily maintenance: Shovel, crowbar, spade, bucket, bamboo, trowel, etc- ~Rs. 1000 per month 2. Human resources <ul style="list-style-type: none"> • 1 center in-charge • 2 helpers • Cost: 1*8,000 + 2* 5,000= 18,000 3. Electricity cost and water supply if needed will be provided and funded by the ULB
Sources of revenue for SHGs:	<ul style="list-style-type: none"> • The SHGs funds the cost through a fixed O&M fee from the municipality. • The sale of the compost will be an additional source of income for SHGs



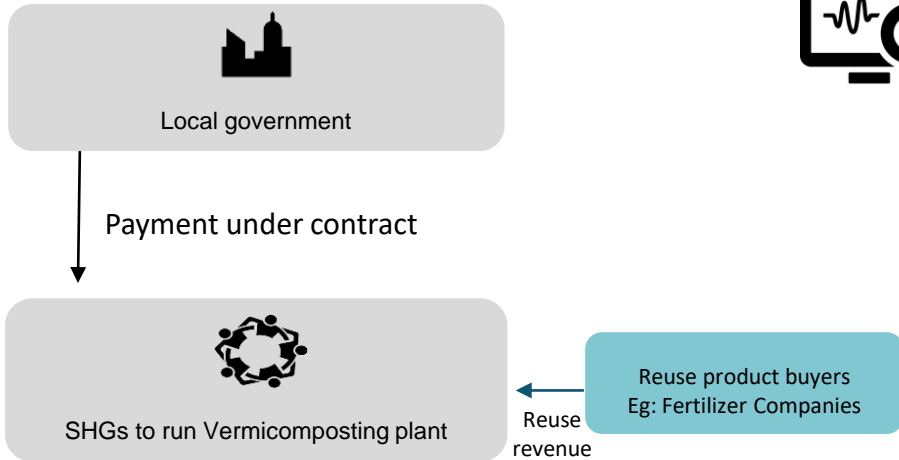
Model description: In this model, the SHG group will operate and maintain the composting facility at the FSTP site. Monthly payment will be released by the local government as per the contract between SHGs and ULBs.



Mode of operation:

Mode of Operation	Service contract
Payment to SHG as per service contract	The municipality typically funds it through a combination of local taxes and state and national government financial assistance

BM-9: Composting at the FSTP site (2/2)



Monitoring/ performance evaluation for service contract payments

- ULB to deploy the City Engineer / Sanitation inspector for overall supervision/ inspection of FSTP site who will also inspect the resource center
- Details of numbers of SHG members that will be employed. Daily attendance record to be maintained by SHGs
- A log book to be maintained by SHGs of the daily activities carried out



Risks:



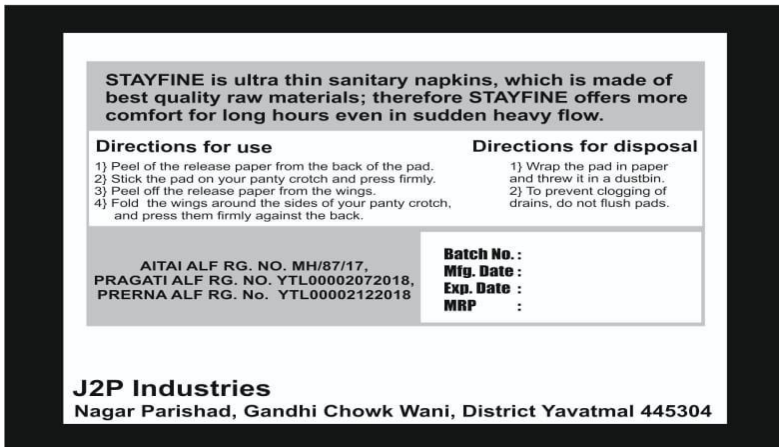
Capacity building

- Skill building on making compost from drier sludge and SWM organic waste



SHGs involved in other sanitation activities

Production of sanitary napkins by SHGs in Wani, Maharashtra (1/2)



Funding and Financing:

Capex Cost	By SHG
Capex investment cost	seed capital of 4.5 lacs from the revolving fund of the SHGs The ULB provided a space in ULB office unit for the set up of this enterprise
Opex cost	By SHG

Expenditure under Opex:

- Operations and maintenance activities
 - Production of sanitary napkins
 - Procuring raw material for production of napkins
- Human resources
 - Labour charges

Sources of revenue for SHGs:

- The sanitary napkins are sold door to door. The revenue of SHGs will be through sale of sanitary napkins.



Mode of operation:

Mode of Operation

Three ALF have come together to form an enterprise by the name of J2P Industries under which Stayfine has been launched

Production of sanitary napkins by SHGs in Wani, Maharashtra (2/2)



Risks:

- The women could not resume the initiative during the lockdown and were involved in stitching face masks from their respective homes.
- The enterprise is currently working towards finding clients and are exploring initiatives to supply the produce.



Capacity building

- Technical capacity building on preparing sanitary napkins

Engaging SHGs in Door to Door waste collection in Bhadravati, Maharashtra



Funding and Financing:

Capex Cost By ULB

Opex cost By SHG

Expenditure under Opex:

- Operations and maintenance activities
 - 4 SHG groups are involved in door to door collection, waste segregation and composting activities
 - Procuring PPE kits for workers
 - 12,000 households are to be covered
 - ULB will provide vehicle maintenance, in case the expenditure is less than Rs. 500 the SHG will undertake the repair work. In case the expenditure incurred is more than Rs. 500, the ULB will undertake the cost.

Sources of revenue for SHGs: • The SHG will fund the cost by collecting Rs. 38 from each household.



Mode of operation:

Mode of Operation Service contract between SHG and ULB



Monitoring/ performance evaluation for service contract payments

- The SHG will not receive any payment for the day when waste is not collected if unavailability of vehicle.

Engaging SHG for Door to Door waste collection in Tuljapur

ULB has collectivised women into various SHGs who have been contracted through a contractor for various SWM activities. SHGs are involved in Swachh Maharashtra activities. Uniforms were also provided by ULB to the SHG members and the member was appointed as “Swachhta Tai”. ULB has been appreciating the activities done by the SHG members by giving Best Swachhata tai Awards on monthly basis.



Funding and Financing:

Capex Cost By ULB

Opex cost

Expenditure under Opex:

1. Operations and maintenance activities
 - Conducting awareness programs under SBM at Schools, colleges, colonies etc.
 - ODF awareness activities like Good morning Pathak, IHHT promotion activities in their respective wards
 - Awareness in their respective wards on waste segregation
 - Accompanying cart for door-to-door waste collection in inaccessible areas for awareness on waste segregation
 - Reuse and Recycle awareness and arranging exhibition for sale

Sources of revenue for SHGs:

- The SHGs will fund these activities through monthly fees received from ULB



Mode of operation:

Mode of Operation

Service contract between ULB and SHG



SHG women involved in waste segregation awareness

SHG women conducting awareness activities in schools

SHG women being awarded by ULB

Engaging SHG in cleaning and supervision of waste collection in Panchgani (1/2)

Pachgani Municipal Council has collectivitised 28 women into 3 SHG groups called the 'Swachagrahis. One SHG comprising of 10 women is responsible for the cleaning of table land while other two groups comprising of 18 women in total accompany the waste collection vehicle and supervise waste segregation. The SHGs oversee the segregation of dry waste into blue dustbins and red dustbins and talk to citizens about importance of segregation of waste.



Funding and Financing:

Capex Cost By ULB/state government/donor

Opex cost By SHG

Expenditure 1. Operations and maintenance activities

under Opex:

1. One SHG will conduct sweeping
 2. Two SHGs are involved in supervision for segregation of waste
2. Human resources
- Labour charges

Sources of revenue for

- The SHG will fund the cost through a fixed O&M fee from the municipality. Rs. 8000 per person per month

SHGs:



Mode of operation:

Mode of Operation

Service contract between SHG and ULB

Engaging SHG in cleaning and supervision of waste collection in Panchgani (2/2)



Monitoring/ performance evaluation for service contract payments

- The council monitors the activities of the SHG groups through geo tagged photos shared on the whatsapp groups. According to the city officials, geo tagging also assists in grievance redressal as the complains can be directed to the worker and addressed directly



Capacity building

- Skill building workshops are conducted with SHG groups monthly on various topics related to solid waste management

Engagement of SHG in operations and maintenance of hand wash facilities in Sinnar

Sinnar Municipal Council (SMC) with support from Water and Sanitation (CWAS), CRDF, CEPT University has provided pedal operated hand-washing (HW) facilities at 22 different locations in the city. Self-help groups (SHGs) and communities have been involved at the various level of decision making and monitoring of the facilities. SMC, through its SHG groups under NULM also identified SHG members who could monitor these facilities regularly and have provided them with monitoring formats on which the SHGs record their observation and report to SMC



Funding and Financing:

Capex Cost By ULB

Opex cost By ULB

Expenditure No expenditure to be incurred by SHG. Opex expenses are done by council

under Opex: Activities carried out by SHGs:

1. Monitoring handwashing facilities
2. Awareness generation for hand washing

Sources of revenue for SHGs:

- The activity is conducted free of cost for now



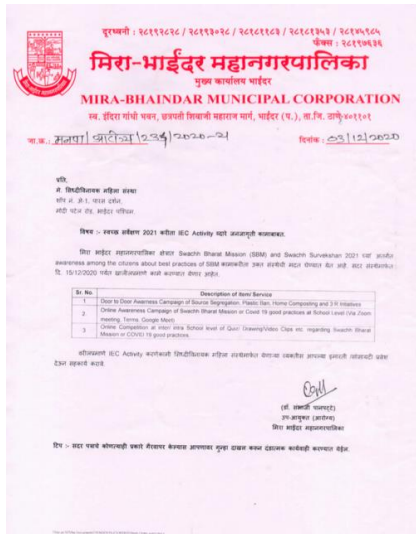
Mode of operation:

Mode of Operation

SHGs are engaged by ULBs for monitoring and awareness in their localities

Engaging SHGs for awareness in communities in Mira Bhayander

Municipal Corporation released a ten day tender to engage 10 SHG groups for awareness activities. 10 SHG groups have been allocated 20 societies each in six wards of the city. A total of 110 women have been engaged for the activities. The SHGs have been provided permit letters by corporation to conduct awareness sessions in residential societies in each ward. The SHG groups have been conducting awareness programs on dry and wet waste segregation and disposal of diapers and sanitary napkins with markings. In group discussions with women, the SHG groups have been focusing on process of home composting in buildings. The SHG groups have taken sessions with society members on Reduce, Reuse and Recycle



Funding and Financing:

Capex Cost By ULB

Opex cost By SHG

Expenditure

1. Operations and maintenance activities

under Opex:

1. Conducting awareness programs on various topics: waste segregation, composting at home, reuse and recycle



Mode of operation:

Mode of Operation

Service contract between SHG and ULB

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CWAS CENTER FOR WATER AND SANITATION

CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION

CEPT UNIVERSITY



About us

The Center for Water and Sanitation (CWAS), CRDF at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.



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