

## Annual Report

# Solid Waste Management in Village Garhi Harsaru under IWRM approach

## Submitted to



## Submitted by


**Taru Leading Edge**

New Delhi, India

**December 2018**

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## Acknowledgement

Setting up a Solid Waste Management system in Garhi Harsaru, a peri-urban Gram Panchayat of Gurugram District, Haryana State of India was a challenging task which could not have been accomplished without the active participation of the Sarpanch, the ward members (wards 17, 18 and 20) and the community members. The project has brought behavioral change in the mindset of the people for proper waste disposal. Before implementation of the project, people were dumping waste in open land and burning it which was a health hazard

Taru Leading Edge is grateful to India Water Partnership//Global Water Partnership for assigning us this project and extending all possible support at ground level. A special thanks to the cleaning staff, Community Motivator and Swachh Committee members, for taking ownership at each step of the project, motivating community members to keep their surroundings clean and actively raising the issues, problems and solutions with our team from time to time.

## Executive Summary



Garhi Harsaru is a Gram Panchayat in the Gurugram district of Haryana with 20 wards in all. A situation analysis of this village revealed that Solid Waste Management (SWM) was one of the neglected areas here. In the absence of a proper waste management system, people dumped their waste in neighboring streets and on open plots. This waste was piled up and burnt regularly which was, leading to excessive air pollution. The drains were choked because of the practice of dumping waste into them and they were cleaned before implementation of the project. Littering was a common practice in Garhi Harsaru Village as observed during a study carried out by TARU Leading Edge with the support of India Water Partnership in 2015. Also, the Gram Panchayat did not have any funds to recruit workers and invest in cleanliness activities for the village. Waste collection and transportation remained a challenge in this village due to the lack of infrastructure.

Considering this, IWP & Taru aimed at developing a Solid Waste Management system in Garhi Harsaru as it was in high demand from the people. Also, it would trigger general environmental sanitation as the visible surroundings would become cleaner. The main objective of this initiative was to develop a community-driven model to improve the solid waste management situation in the village and strengthen the institutional capacity for sustainability of the initiated cleanliness program in Garhi Harsaru. This model is based on the community user charge for door-to-door waste collection and cleaning of nearby drains & streets. The waste is collected by the cleaning staff, who are self-nominated members of the community and appointed by the Sarpanch. The users' charges collected are used to pay the wages of the cleaning staff. The amount collected by the respective ward members and the community motivator is deposited into a joint bank account, opened by the Sarpanch and the ward members, exclusively for this project. The entire waste management system is monitored regularly by a Swachh Committee (SC) consisting of the Sarpanch, Community Motivator, Ward Members and a few community members. The SC holds monthly meetings in order to discuss about the challenges being faced on the ground in terms of SWM and how can they be addressed.

An overall holistic approach was adopted under the project to ensure that the wards remained clean, the drains unclogged, and the streets swept from time to time. Thus, visibly clean surroundings were seen within two months of project implementation. Community ownership was the foundation of this project. Active participation of the Sarpanch, Swachh Committee and community members was the essence of this project that is reflected in the clean streets and surroundings of this village.

Eco Wise Waste Management Pvt. Ltd., a waste management company was contacted in order to set up a safe waste disposal system in place, since under the current practice, the collected waste is being dumped in an open plot designated by the Gram Panchayat.

The peri-urban areas in Delhi NCR face bigger water challenges as the situation there is grimmer, in terms of infrastructure and physical development. Water stress is one of the major problems faced in these areas. In view of the over-dependence on ground water, the water table is falling at an alarming rate, much beyond the capacity of the rainfall to recharge it. It is estimated that on an average, NCR receives about 22542 MCM/year rainfall; about 75% of which is received during the monsoon season<sup>1</sup>. Still, most of this precious resource runs-off without being put to any significant use thereby getting wasted.

Garhi Harsaru is a Gram Panchayat in the Gurugram district of Haryana. The project intervention area selected was Garhi Harsaru village of this Gram Panchayat. As per the National Rural Drinking Water Programme, the total population of this Gram Panchayat is 6,287 and number of households are 1,253, as on 1st April 2018. It has 20 wards in all.

India Water Partnership (IWP) in collaboration with its partner organization, Taru Leading Edge (Taru), started working in this village in 2015. Since then, the following activities have been conducted- action-research study, trainings and capacity building activities, providing community water filters (to a government school and *aanganwadi Kendra*). Last year a major activity undertaken by Taru and IWP involved installation of rooftop rainwater harvesting structure and providing dustbins to a government school in Garhi Harsaru. The structure aims at recharging the groundwater table in order to improve the water availability for future use.

In order to develop an Integrated Water Resources Management (IWRM) program in village Garhi Harsaru, Detailed Investment Plan was developed after need assessment. To kick-off the plan, IWP with its partner Taru Leading Edge developed a Solid Waste Management system in the village in this phase of the program as it is in high demand from the people. Also it could trigger general environmental sanitation as the visible surroundings become cleaner.

A situation analysis of this village revealed the poor cleanliness condition and Solid waste management was one of the neglected areas. In the absence of a proper waste management system, people dumped their waste in neighborhood streets and on open plots. The drains were choked because of the practice of dumping waste in them and they had not been cleaned for a year now. Littering was a common practice, as observed during our study.

At the Panchayat level, there are only 4 sanitary workers appointed by the district, to carry out the waste collection in all the 20 wards. Needless to say, the existing workforce is stressed. Their remuneration is looked after by the district. There is no system of door-to-door waste collection in place. Panchayat directs them regarding the areas that need to be cleaned on an urgent basis. Since there is no designated location for dumping the waste, the waste is dumped in any open space and is burnt. Earlier there were community dustbins but due to the lack of awareness, the sweepers burnt the waste inside the dustbin itself, thereby destroying them, as shared by the ward members. There is no provision of any municipal vehicle carrying away waste from the village. Also, the Panchayat has no funds to recruit more workers or look after the cleanliness of the village.

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<sup>1</sup> [http://www.ncrpb.nic.in/Consolidate\\_pre\\_document.pdf](http://www.ncrpb.nic.in/Consolidate_pre_document.pdf)

## Details of Activities

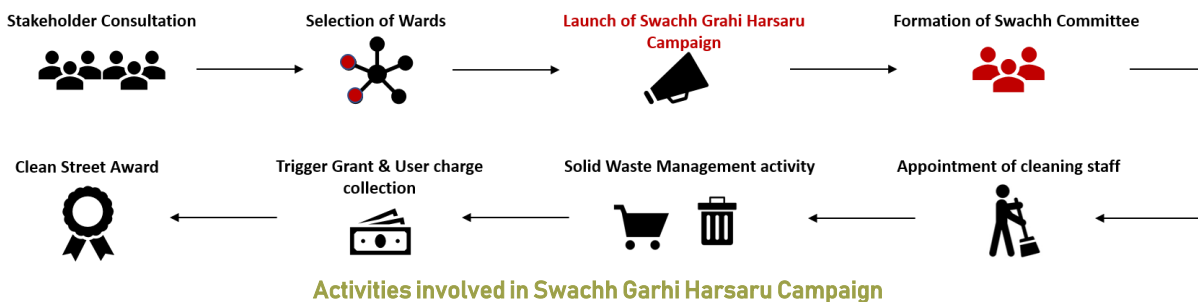
The project activities for **Phase IV** started in August 2018 with a discussion between IWP, TARU, Sarpanch, ward members and other active members of the community. To start off the solid waste management activity at ward-level, 3 wards out of 20 were shortlisted on the basis of the following selection criteria–

- Ward having approx. 70 households
- Active participation of the ward members in undertaking SWM activities in their wards
- Willingness of the community members of selected wards for paying user charges for collection and safe disposal of waste from their houses



Focus Group Discussion for ward selection

On the basis of a Focus Group Discussion conducted with the ward members and the Sarpanch, three wards were shortlisted – 17, 18 and 20. These wards have a total number of approximately 230 households. This was followed by the launch of the Clean Garhi Harsaru or Swachh Garhi Harsaru campaign.



### 1. Launch of the campaign of Clean Garhi Harsaru

The campaign was launched in the presence of community members of ward number 17, 18 and 20, Sarpanch, other Gram Panchayat members, IWP Team and Taru Team to promote the local level initiative on the solid waste management. It was a cleanliness drive starting at the ward level.

Prior to the launch of the campaign, the following activities were undertaken –



- Designing of banner for the Swachh Garhi Harsaru Campaign
- Preparation of ToR defining the roles and responsibilities of Sarpanch, Swachh Committee, Ward members, Motivator and Cleaning staff (Annexure I)

During the launch of the campaign, the following activities were undertaken-

- Sharing IEC material- short videos on waste management to raise awareness within the community
- Explanation of User Fee Model<sup>2</sup> to the community members
- Appointment of cleaning staff by the Sarpanch
- Discussing the responsibilities of the cleaning staff
- Distribution of uniform and protective gears (including a jacket, gloves and mask) to the cleaning staff
- Provision of broom and cart (from Panchayat)
- Appointment of a Swachh Committee- consisting of the Sarpanch, Community Motivator, Ward Members and a few community members<sup>3</sup>



**Awareness generation on solid waste during launch of the campaign**

<sup>2</sup> The community members of these three wards were made aware of the user fee of Rs. 50/- per month that was to be collected from each household by the ward members on a fixed date every month.

<sup>3</sup> Influential ward members, motivator and active members of the community from the selected wards were shortlisted to be a part of the Swachh Committee. They would look after the solid waste management activities in the selected wards and keep the community motivated for their contribution in the campaign.



**Members of Swachh Committee**



**Cleaning staff appointed by the Sarpanch**

Since it is a community driven project, therefore the roles and responsibilities of the cleaning staff was designed after discussion with the community members. As per this, the cleaning staff would be responsible for:

- a) Door to door waste collection from each HH on daily basis (except for Sundays)



- b) Cleaning of drains twice a week
- c) Sweeping of the streets, thrice a week
- d) Dumping of waste at the designated location.



**Start of the waste collection activity in selected wards**



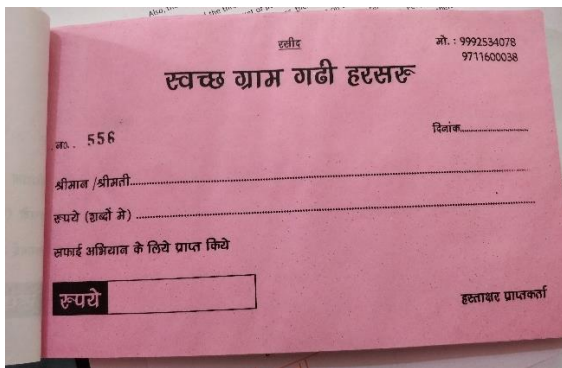
**Door to door waste collection and cleaning of drains**

It was decided that the entire waste management system would be monitored regularly by the Swachh Committee (SC). The SC would hold monthly meetings in order to discuss about the challenges being faced on the ground in terms of SWM and how can they be addressed.

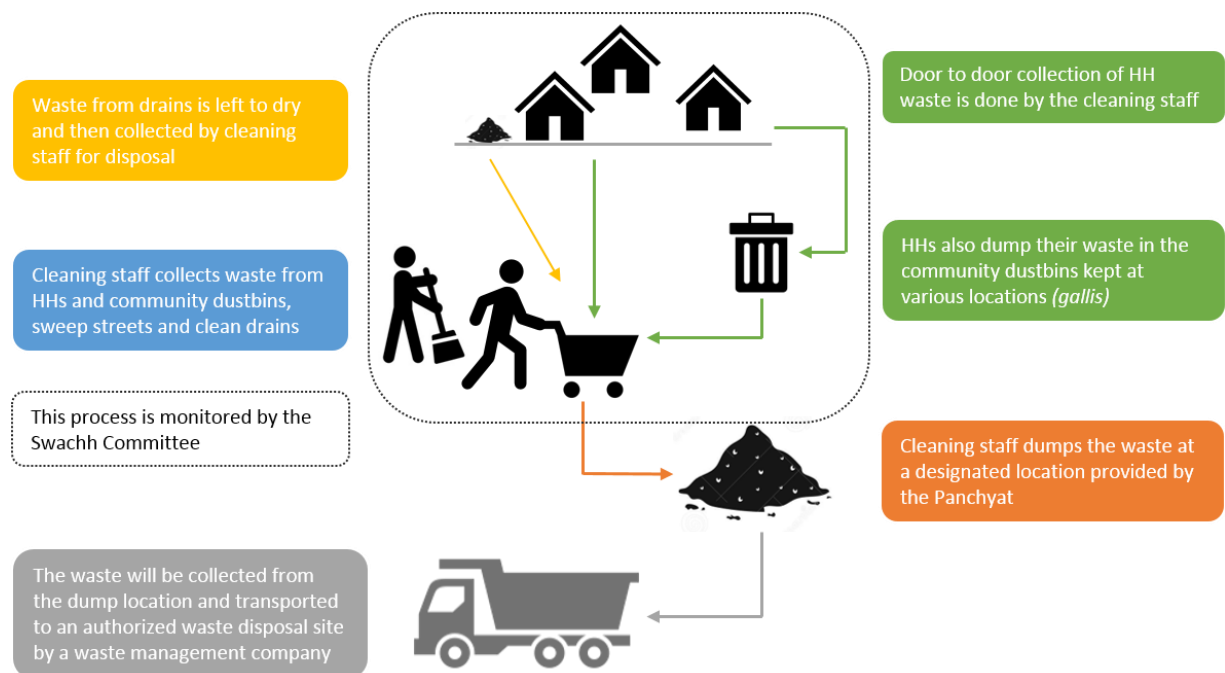


Regular meetings with the committee and community

Panchayat printed a User Fee booklet and the SC members would maintain a register of the amount of user charges collected as well as the attendance of the cleaning staff.



Cashbook and Attendance register



Process of Solid Waste Management Activity



Under this campaign, an incentive-based award 'Best Gully Award' was introduced during the launch of the campaign wherein, an award was given to the cleanest street in the ward on the basis of an evaluation criterion designed by the SC and community members.

### Swachh Gully Award

In order to encourage the community members and keep them motivated regarding the cleanliness of their gullies and nearby areas, the Swachh Gully Award ceremony was organized wherein on the basis of an evaluation criteria, the cleanest gullies were shortlisted.

The evaluation criteria included (detailed criteria in Annexure II)-

- Cleanliness in the gully – No littering, clean drains, street sweeping, cleanliness around dustbin.
- User charge collection- high number of houses in a gully paying user charge.

The Swachh Committee members along with the Taru team were involved in inspecting the gullies by conducting a transect walk in 6 major gullies. On the basis of the aforementioned criteria- Gully no. 2 (ward 18) and Gully no. 4 (ward 20) were shortlisted and their respective ward members were felicitated with a certificate given to them by the Sarpanch. Also, community bins and potted plants were given as a token of appreciation for the efforts undertaken by the ward and community members in ensuring that their gully was the cleanest.



Event of Swachh Gully Award



Evaluation and award of Swachh Gully Award to ward members of Ward 18



Potted plants and Community dustbins as award incentive



Certificate for Swachh award



## 2. Building capacity of the village institution to manage program initiated

The next set of activities was carried out to strengthen the capacity of the Swachh Committee at Panchayat level. Swachh Committee that was formed during the launch of the campaign comprises influential ward members, motivator and active members of the community from the selected wards. Their role is defined as to look after the solid waste management activities in the selected wards and keep the community motivated for their contribution in the campaign.

Regular meetings were conducted by the Taru team and IWP team with the Swachh Committee and community members. These meetings helped our team gain greater insight into the challenges faced on the ground by the cleaning staff as well as the community members. Transparency was maintained in these meetings, wherein the opinion of both- the community members as well as the cleaning staff was duly noted. Both the parties were heard, and the ultimate decision was left up to the Swachh Committee members.

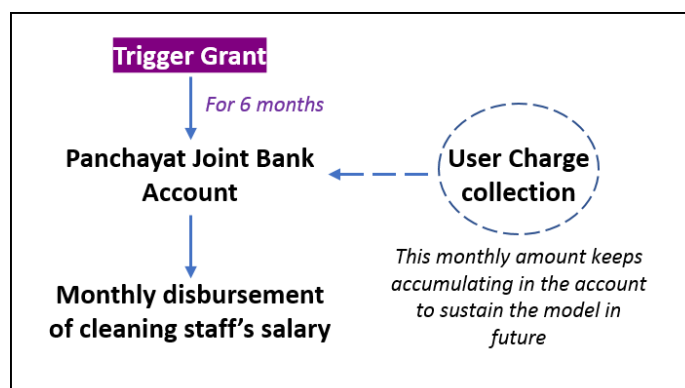
A glimpse of the issues raised by both- the community members as well as the cleaning staff is presented in the table below.

| S.No. | Issue  | Remarks  | Raised by                            | Solution   |
|-------|--|--|--------------------------------------|--|
| 1     | Dysfunctional Cart                               | Difficulty in moving the cart due to wheel disbalance issues                                       | Cleaning Staff                       | Resolution passed by Sarpanch to replace the cart with a new one.  |
| 2     | Untimely waste disposal                          | Few households didn't give away their waste during the time of collection and complained later     | Cleaning Staff                       | SC announced a fixed timing of arrival of cleaning staff for waste collection.   |
| 3     | Leave taken by the cleaning staff                | Community members complained of long leaves taken by the cleaning staff                            | Community members                    | Monthly remuneration to be calculated by the SC on the basis of attendance of cleaning staff thereby discouraging leaves.        |
| 4     | Certain miscreants unwilling to pay user charge  | People make use of the excuse of cleaning staff being on leave as a reason to not pay user charge. | Community members                    | Swachh Committee members take additional effort to encourage these households to pay user charge on time.                        |
| 5     | Open dumping of waste                            | Few community members continue to dump waste in open plots   | Community members                    | Fining system set in place by the Gram Panchayat wherein violators would be fined Rs. 500/- for disposal of waste in open plots. |
| 6     | Requirement of community dustbins in the gullies | Certain gullies are still unpaved thereby making it difficult for the cart to reach                | Community members and cleaning staff | 10 community bins placed at locations decided by the community and SC members.   |
| 7     | Animals knocking over the community bins         | Cows and dogs often knock over the bins in search of food  | Community members and cleaning staff | The location of certain bins changed to make them inaccessible to the animals.   |

### Trigger grant model

The model for solid waste management is community-driven where the community is ready to pay a user charge for door-to-door waste collection. The waste is collected by the cleaning staffs who are members of the community and volunteer for the work upon approval of the Sarpanch. The user charge collected will be used to pay the wages of the cleaning staff. The amount collected by the respective ward members and the community motivator is deposited into a joint bank account, opened by the Sarpanch and the ward members, exclusively for this project. The model is supported by providing trigger grant to carry out the project for 6 months. This trigger grant is utilized by paying the salaries of the appointed staff for this time period. The primary reason behind providing this grant is that the user charge collection during the initial stage of the project is not enough to meet the salary requirement of the cleaning staff.

The user charge collected is accumulated in the account for these 6 months and will be utilized later, to run the project, sustainably.



### 3. Software support

The support extended in this regard included the following activities –

- Sensitizing the community regarding the importance of solid waste management
- Institutionalizing the system of waste management
- Conducting Financial Audits regarding the user charge collected and other expenditures made by the Swachh Committee to ensure transparency and accountability
- Liaising with waste management service providers and the Gram Panchayat to develop a smooth system of waste disposal and treatment
- Monitoring the status of the Rainwater Harvesting Structure set up in the school

### 4. Scaling up

Efforts are underway to scale up this initiative in the remaining wards of the Gram Panchayat. The Sarpanch is playing an active role in this by spreading awareness within her own ward, ward number 19, regarding the successful implementation of the waste collection and disposal activities in ward number 17, 18 and 20. The project team will continue to advocate with local donors to support the programme.

### 5. Monitoring of Rainwater Harvesting Structure in Government School

The Rainwater Harvesting (RWH) structure installed in the previous phase is monitored by the Panchayat and school authority. The structure is installed to harvest rain water from the rooftop of the one big building block of the school. Water collected by the structure directly goes to the ground through a recharge well and thus recharging the underground water table. This helps in replenishing the water table and is of advantage to the village community.

The cleanliness around the structure as well of the roof is ensured by the Panchayat and school authority. Since the installation of this structure, there has been one rainfall season during which the structure harvested the water from rooftop and recharged the ground water table. Therefore in this season, the RWH structure has recharged a volume of 209.3 cubic meters or 2,09,306 litres of water.



**Before and after maintenance image of Rainwater Harvesting Structure installed at Government High School in Garhi Harsaru**



## Voices from the Ground

After successful implementation of the project on the ground, people's perception towards solid waste management changed. They realized that it is not difficult to manage their solid waste and they themselves are the key players in making it successful. This became clear when during each Swachh Committee meeting where people would unanimously state that they are very happy with the clean streets and drains. They feel proud of their gullies now.

*"Before the start of this project, the open area right outside my house was used as a dumping ground by most people in my gully. The level of awareness was extremely poor. But now, things have changed. Everyone is more aware of the importance of solid waste management. With the help of the members of my gully and the cleaning staff, I was able to get the area cleaned. Now this site is clean and is a playing area for the children."* - Asha Devi, Ward 18



Open area outside Asha Devi's house

*"It is very convenient to have a door-to-door waste collection system. We don't have to walk long distances to dispose the waste."* - Santosh, Community member, Ward 20

*"Now we don't allow people to dump waste in the surroundings. We tell them that violation would cost them a fine of Rs. 500 and we bring this to the notice of the Sarpanch and the Swachh Committee."* - Neelam Devi, Ward 18

*"Having community bins in our gullies have made a lot of difference. People throw their waste in them instead of choking the drains."* - Kiran, Ward 18



## Outcome of SWM activity

| Month   | Total number of HHs in ward 17,18,20 | HHs paying User Charges | % of HHs paying user charges | Amount collected (in Rs.) | Remarks   |
|---------|--------------------------------------|-------------------------|------------------------------|---------------------------|---|
| Sep-Oct | 224                                  | 120                     | 54%                          | 6000                      | More than 50% of the HHs paid a user charge which indicates a positive response from the community.   |
| Oct-Nov | 224                                  | 97                      | 43%                          | 4850                      | Decline in the number of HHs paying user charge due to sudden quitting of a cleaning staff for personal reasons. Gap of one week hindered the waste collection procedure. |

## Impact

1. People are more aware about their surroundings than before. They are now taking ownership in the Swachh Garhi Harsaru Campaign. Since most people are paying a user charge, they are now strongly opposing the residents who are dumping their waste in the open plots, thereby indicating that the level of awareness has increased.
2. Plots which were once used as dumping grounds by the community members have now been cleaned by their own initiative.
3. Impressed by the current door-to-door collection practice, community members in the neighboring wards are willing to pay as high as Rs. 150 per month for door-to-door waste collection.
4. Fining system is to be set in place by the Sarpanch wherein violators will be charged Rs. 500 for dumping waste in the open. The money collected from the fines will be deposited in the User Charge Collection bank account.
5. Dustbins are set up at sites decided by the community and they are satisfied with the service. They feel that due to the presence of dustbins, their gullies are now cleaner than before because it is easy to dispose off waste. Also, it is easy for the cleaning staff to collect waste from dustbins as at many places it is difficult to move the cart because of the topography and unpaved road.



## Way Forward

The solid waste management system is almost in place in the selected wards of Garhi Harsaru, with door-to-door collection, street sweeping and drain cleaning being done on a regular basis by the cleaning staff. Eco Wise Waste Management Pvt. Ltd., a waste management company is being brought on board to ensure safe disposal and treatment of the collected waste. The corporates are also being approached to provide CSR funds to scale up the project in whole village.

## **Solid Liquid Waste Management in Village Garhi Harsaru under IWRM approach**

### **Scope of work**

#### **1. Gram Panchayat of Garhi Harsaru**

Gram Panchayat of Garhi Harsaru to provide full support and cooperation in carrying out the following activities –

- a) Launch of the Clean Garhi Harsaru Campaign in the three wards- 17, 18 and 20 (to begin with)
- b) Panchayat to identify human resources such as community motivator and ward members from the village itself, required for building capacity of the village institution.
- c) Formation of a Swachh Committee which would include Ward members, Panchayat and community members for transparency and accountability of Panchayat.
- d) Preparation of user charges booklet and management of user charges finances. Arrangement of carts and other cleaning equipment required for carrying out the SLWM activities.
- e) The Swachh Committee would hold monthly meetings in order to discuss about the challenges being faced on the ground in terms of SLWM and how can they be addressed. Taru and IWP would regularly attend these meetings.
- f) Monthly Report to be prepared by the Panchayat along with support from the Community Motivator and ward members and submitted to TARU team. For onward submission to IWP & GWP-SAS Regional office Colombo Report would include – number of HHs paying user charges, amount collected, and challenges faced.
- g) Scaling up of the initiative by encouraging more wards to participate in the campaign.
- h) Assessment of the selected wards for the Gully Award by swachh committee at the end of the 6 months campaign.
- i) Previous work done in the earlier phases of this project include installation of one RWH structure and installation of 2 dustbins at the government school, and installation of one water filter in Anganwadi. Village Panchayat of Garhi Harsaru will monitor and manage these assets and also repair, if required.
- j) Panchayat need to ensure safe disposal of solid and liquid waste management in partnership with local agency /contractor.


#### **2. Community Motivator**

Motivator appointed for the project holds following responsibilities –

- a) Providing support in launch of Clean Garhi Harsaru campaign.
- b) Raising awareness of the households of the selected wards on SLWM for segregation at source HH level and support Panchayat in scaling up the initiative.
- c) Organizing swachh committee meetings and regularly share the updates by providing written notes, notes to be recorded in a file with TARU team.
- d) Monitoring the ongoing SLWM activities in the selected wards.
- e) Providing support to Panchayat and ward members, wherever required, to carry out the programme.

#### **3. Ward Members**

Ward members of the selected wards to provide full support and cooperation in carrying out the following activities –

- 
- a) Motivating HHs, within their respective wards, to pay user charges for SLWM activities.
  - b) Collection of user charges from each HHs within their ward, at the end of every month.
  - c) Supervising the SLWM activities and coordinating with the motivator and cleaning staff.
  - d) Maintaining a register for user charges and sharing it with Panchayat, to keep a track of charges collected per month.

#### 4. Cleaning Staff

The two cleaning staff appointed for the programme will carry out the following activities –

- a) Door to door waste collection from each HH of the selected wards on daily basis (except for Sunday). It is to be ensured that HHs give segregated waste.
- b) Cleaning of drains of the selected wards 2 times in a week.
- c) Sweeping of the streets of the selected wards, every alternate day in a week (i.e. 3 times a week).
- d) Dumping of the segregated waste at the designated location.



## Annexure II: Evaluation Criteria

### Swachh Garhi Harsaru Campaign

Place: Garhi Harsaru

Date: 14/12/2018

### Evaluation Form – Swachh Gully Award

| Swachh Gully Award |                          |   |        |              |        |             |
|--------------------|--------------------------|---|--------|--------------|--------|-------------|
| Ward Number:       |                          | Ward Member Name:   |        |              |        |             |
| Gully Number:      |                          | Assessor:   |        |              |        |             |
| S.No.              | Indicator                | Things to Observe   | Score  |              |        | Total Marks |
|                    |                          |   | Good   | Satisfactory | Bad    |             |
|                    |                          |   | 5      | 3            | 0      |             |
| 1                  | Cleanliness in the gully | No littering  |        |              |        |             |
|                    |                          | Clean drains  |        |              |        |             |
|                    |                          | Street Sweeping   |        |              |        |             |
|                    |                          | Cleanliness around dustbin  |        |              |        |             |
| 2                  | User Charge Collection   | Amount Collected (average of 2 months) (number of HHs paying user fees/ total number of HHs in the gully) | (>80%) | (50%-80%)    | (<50%) |             |
|                    |                          |   |        |              |        |             |

### Evaluation Criteria

| Methodology  |
|--|
| • Assessors will visit all gullies in each ward- 17,18, 20                                     |
| • Assessors will move around the gully area and observe/assess if the area is clean or not     |
| • Assessors will not interact with anyone. It will be purely their assessment of the situation |
| • Assessors will click the pictures to support their observation/assessment                    |