Waste Flow Diagram (WFD) Report

Savar Municipality Bangladesh

2025

WASTE CONCERN

BORDA SOUTH ASIA

german cooperation

A REPORT ON

Waste Flow Diagram
Savar Municipality

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Abbreviations

3R	Reduce, Reuse, Recycle
BMZ	Federal Ministry for Economic Cooperation and Development
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GHG	Greenhouse Gas
ISWA	International Solid Waste Association
MSW	Municipal Solid Waste
NGO	Non-Governmental Organisations
SDG	Sustainable Development Goals
WFD	Waste Flow Diagram

Chapter 1
About the Waste Flow Diagram

1.1. What is a Waste Flow Diagram?

The Waste Flow Diagram (WFD) tool estimates the amounts of solid waste that leak into nature and oceans from various sources. Through a scenario function, it simulates how improved waste management could reduce environmental pollution and avoid marine litter.

The WFD was developed since insufficient waste management is considered one major source of marine litter, especially along coasts and rivers. Understanding the leaks and pathways of plastic waste into the environment is key to developing effective measures to beat plastic pollution.

Marine litter poses a global risk to marine ecosystems, the fishing and tourism industry, and possibly human health. About 60 to 90% of marine litter consists of plastics, much of which comes from single-use products and packaging. According to estimates, between 4.8 and 12.7 million tonnes of plastic debris leak into the world's oceans each year. In a business-as-usual scenario, annual marine plastic pollution will triple by 2040.

On behalf of BMZ, the tool was developed in cooperation with GIZ, the University of Leeds, Eawag- Sandec, and Waste Aware. It is based on a preliminary method that was applied in two case studies as part of the report.

1.2. Waste Flow Model

The adequate collection and disposal of municipal solid waste (MSW) is a global challenge, particularly impacting low- and middle-income countries, as recognized by its inclusion in the United Nations Sustainable Development Goals (SDG 11 "Sustainable cities and communities"). Indicator 11.6.1 aims to monitor the "proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by cities". According to current estimates, 2 billion people worldwide have no access to waste collection services, and 3 billion people's waste is managed in an environmentally unsound manner (Wilson et al., 2015). This has severe impacts both on human health and the environment, with one rapidly emerging problem being plastic pollution.

Plastic pollution is a reality and affects all ecosystems of our planet. It causes severe danger to animals, it blocks drains and waterways, triggers and worsens floods, degrades landscapes, and is already present almost everywhere, including the food chain. More than 6,300 million tonnes of plastic have been produced since the 1950s (Geyer et al., 2017), of which 360 million tonnes of plastic were produced in 2018 alone. All of this plastic eventually becomes waste. Currently, only 9% of the total global plastic waste is recycled, while 12% is burned or incinerated. The remaining 79% accumulate on landfill sites or the natural environment.

Oceans are thought to be a major final sink for some of this plastic, as about 80% of marine litter is believed to derive from land-based sources (Eunomia, 2016). For macro plastics, this is largely a result of a lack of waste collection infrastructure and poor waste management practices, particularly within low- and middle-income settings. Furthermore, increasing populations and consumption of resources are exacerbated by these issues, with a need to promote reduction, reuse, and recycling within solid waste management (SDG 12.5). Once in the ocean, the larger macroplastic items undergo degradation into innumerable secondary microplastics that are beyond any control and have deadly impacts on marine life and the health of the oceans (SDG 14.1). It is, therefore, paramount to prevent macro plastic pollution at source before it becomes uncontrolled in the environment and potentially enters waterbodies.

The structure of the waste flow model is introduced, and the underlying simplifications are considered for its development. Additionally, the user interface of the Excel-based model is discussed before specifying the linkage with the SDG indicator 11.6.1 and its accompanying methodology.

Figure 1: *Adequate Solid Waste Management is Linked to Several SDG Indicators*

Figure 1 includes: 11.6 – by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management; 12.5 by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse; and 14.1 – by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land- based activities including marine debris & nutrient pollution.

The WFD aims to provide a rapid assessment methodology for mapping the flows of macro waste in a municipal solid waste management system at the city or municipality level, including quantifying the sources and fate of any plastic pollution. This aim can be summarised into six objectives:

- To provide a rapid assessment of a city or municipality's municipal solid waste management system and visualize the flows of waste, including informing the SDG 11.6.1 sub-indicators.
- To use observational-based assessments to quantify the sources of plastic leakage into the environment from the municipal solid waste management system and determine the eventual fate of this uncontrolled waste.
- To identify the high-priority sources of plastic pollution to make informed interventions
- To allow benchmarking and comparison between cities.
- To run scenarios to gain approximate insights into how proposed interventions may impact the solid waste management system and plastic pollution.
- To quantify the effectiveness of applied interventions.

Chapter 2
Town Profile

2.1. Location

Savar Municipality is situated under the Savar Upazila of Dhaka District in the Division of Dhaka. It is located about 24 kilometres to the northwest of Dhaka city. Savar Municipality was established in 1992. The municipality lies between 23°44' and 24°02' N latitude and 90°11' and 90°22' E longitude. It has an area of 14.08 km^2. Kaliakair and Gazipur Sadar Upazilla bound the Savar municipality to the north, Keranigonj Upazila to the south, Dhaka City to the east, and Dhamrai and Singair Upazila to the west. The Savar municipality is situated on the bank of the Bangshi River.

Figure 2: *Location Map of Savar Municipality*

2.2. Demography

The current estimated population of Savar Municipality is 4,05,247, with an average density of 28,782 persons per sq km. The main income sources of the inhabitants of the municipality are services 28.74%, business 20.55% and agriculture 20.46%. Other income sources include non-agricultural labour, industry, transport and communication, construction, religious service, rent and remittance, and others. The municipality has 09 (Nine) wards.

Table 1: Town Profile of Savar Municipality

Name of the Town/City	Savar Municipality			
Province/District/State/UT	Dhaka/Savar Sub-District, Bangladesh			
Area of the Town (sq. km)	14.08 sq. km (Population and Housing Census-2011, BBS)			
Number of Wards	9			
Total Population	2022: 3,84,093 (Census 2022)		Estimated Present: 4,05,247 (2024)	
	Male	Female	Male	Female
	1,98,719	1,85,374	2,11,060	1,94,187
Population growth rate (%)	2.72% (2011-2022)			
Floating Population (If applicable)	1,966 (Source)			
No. Properties	Residential	Commercial and Institutional	Others	
	55.28%	4.13%	40.59%	
No. of Notified Slums	10			
No. of Non-Notified Slums	None			

Source: BBS. Population Census 2022

2.3. Economy

Agriculture and manufacturing are the two major economic sectors in the Savar area (both municipal and non-municipal areas). The main crops grown are paddy, jute, peanuts, onion, garlic, chilli, and other vegetables. The main fruits cultivated here are jackfruit, mango, olive, papaya, guava, kamranga, berry, and banana. There are 181 combined fisheries, dairies, and poultries, five hatcheries, and 209 poultry farms in the area. Manufacturing facilities include ceramic, garments, and beverage industries, press and publication, footwear, jute mills, textile mills, printing and dyeing factory, transformer industry, automobile industry, biscuit and bread factory, pharmaceutical industry, soap factory, brickfield, cold storage, welding, plant nursery, etc. An export processing zone is located in Savar. The cottage industry includes 8 weavers, 100 goldsmiths, and 29 other workshops.

Based on the field survey, it has been found that, within the municipal area, 21% of the population belongs to the high-income group, 33% is income, and the remaining 46% belongs to the lower-income group.

2.4. Administrative Division

Table 2 shows ward-wise information of the Savar municipality.

Table 2: Ward Level Data

Wards	Area (Sq. Km)*	No. of Households**	Estimated Population in 2024			Remarks
			Total	Male	Female	
1.	1.73	14,772	49,487	24,766	24,721	Badda, Baktarpur, Shahid Maznu Academy
2.	1.27	8,567	28,699	14,376	14,324	Ara para, Uttar Para, Savar Bazar
3.	1.26	12,775	42,796	21,900	20,897	Banpuku, Jaleshyar, Savar City Center, and Razzak Plaza
4.	1.18	6,187	20,727	10,827	9,900	Maddhya Para, Dakkhin Para, Savar Sub-Registry Office
5.	1.51	12,001	40,202	21,030	19,172	Bank Colony, ACED School, Laboratory School
6.	1.61	18,418	61,699	32,654	29,045	Enam Hospital, Savar Upazilla Office, Doel Group of Industry
7.	1.92	21,170	70,920	37,140	33,780	Radio Colony, Savar New Market, CRP, Dgormora Area
8.	1.77	13,071	43,788	22,591	21,197	Raj Ashan, Savar Textile Mill, Savar Catholic Church
9.	1.83	14,008	46,928	25,776	21,152	Anandapur, Genda, Bank Town, Savar Municipal Office
Total	**14.08**	**120,969**	**405,247**	**211,060**	**194,187**	

*Source: * BBS, Small Area Atlas of Bangladesh 2016 ** BBS Population Census 2022*

2.5. Land Use

The land use of Savar Municipality is mixed land use, which consists of residential, commercial, industrial, agricultural, and institutional land use, open space, water bodies, and road networks. Most of the area of the municipality is used for residential use (55.28%) and agricultural use (11.77%). In the municipality, the major status of the inhabitants is the result of migration from other areas of Bangladesh. These people mostly migrate for employment purposes.

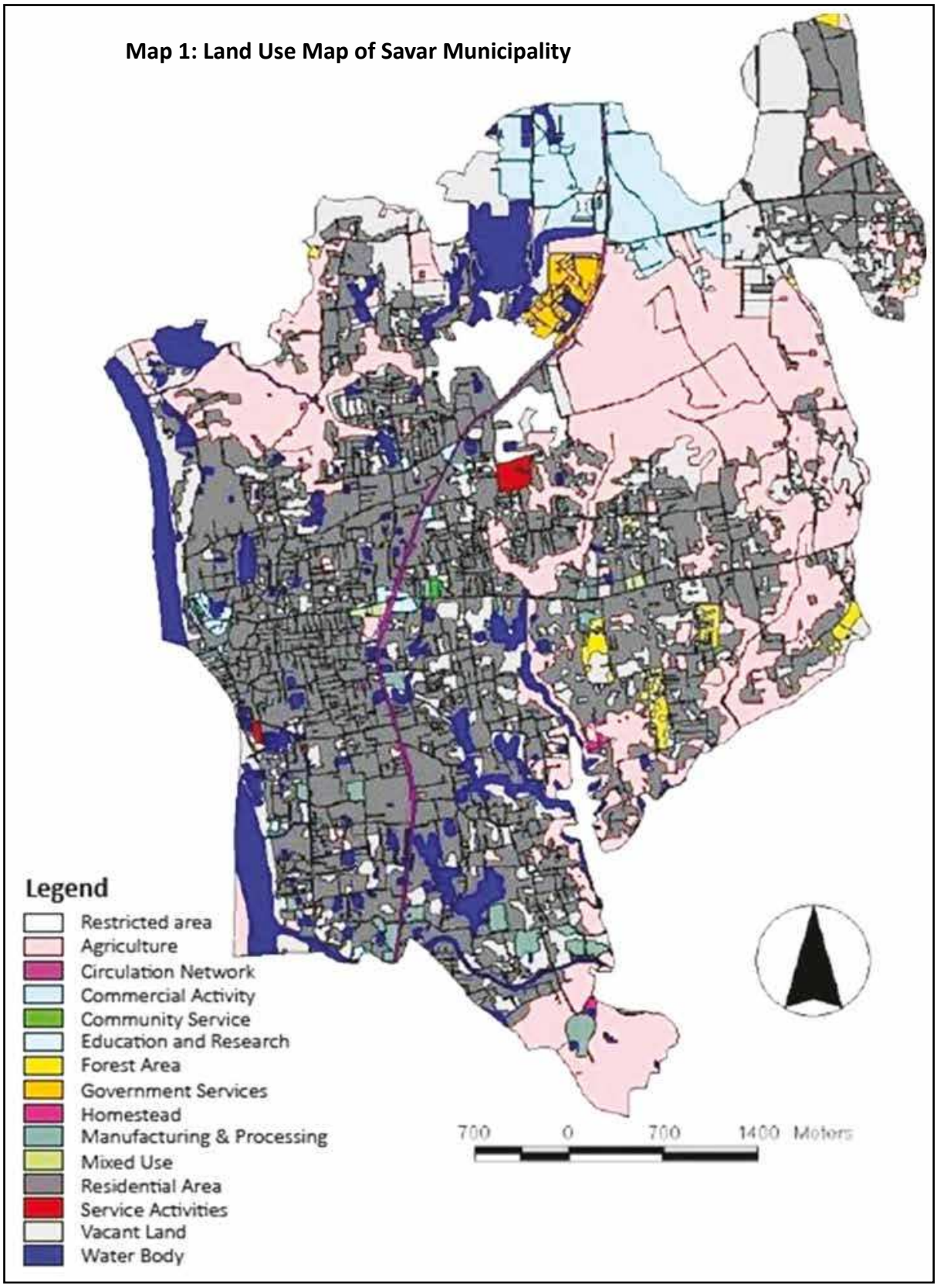

Figure 3: *Land use Map of Savar Municipality*

Chapter 3
Solid Waste Management in Town

3.1. Segregation

The Solid Waste Management system in Savar is based on the end-of-the-pipe solution, i.e., collection, transportation, and disposal. At present, 125.6 tonnes/day (45853.7 tonnes/year) of solid waste is generated within the municipal area. No source separation is practised in the municipality. Currently, 45% of households are covered by a house-to-house waste collection system. Apart from a house-to-house collection system, there are several open secondary storage points in the municipality. At present, there is no transfer station in the municipality. The current waste collection system is highly inefficient, resulting in multiple handling of waste. In addition to this, most of the open secondary storage points act as a point for the segregation and collection of recyclables by the informal sector. The government of Bangladesh, under SWM Rules 2021, has made it mandatory to segregate waste at its source.

Currently, the municipality collects 45 tonnes of solid waste every day. The total number of community waste bins that are available for collection is 24. There is no source segregation of solid waste. Both organic and inorganic waste are collected together and later disposed of in the unofficial landfill site using crude dumping methods. Rickshaw vans collect waste from households, and later, it is unloaded with a shovel at an open secondary storage point. The municipal waste collecting trucks collect waste from open secondary collection points for final disposal using the open crude dumping method.

Figure 4: *Waste Collection Truck*

Figure 5: *Waste Collection Van*

3.2. Transportation

There is a total of 10 waste collection vehicles available with the municipality. Considering the amount of waste generated per day, the number of vehicles available in the municipality is inadequate. These waste collection trucks make a total of 11 trips each day. A list of waste collection vehicles for carrying waste to the landfill for the Savar municipality is given below in Table 3:

Table 3: Waste Collection Vehicle of Savar Municipality

Type of Truck	Capacity	No. of truck	No. of Trip	Total Carried Waste/Day
1. Tipping Truck	3 ton	4	2	24 ton
2. Truck (Mahindra Brand)	3 ton	2	2	12 ton
3. Normal Truck	3 ton	1	2	6 ton
4. Container carrier	1.5 ton	2	1	3 ton
5. Tractor	1 ton	1	1	1 ton
Total carried waste to the landfill/day				**46 ton**

Source: Field Survey, 2021

Figure 6: *Rickshaw Van for Transportation of SW*

Figure 7: *Waste Truck for Transportation of SW*

3.3. Treatment

Currently, there is no solid waste treatment facility available within the Savar municipality. The per capita waste generation rate was estimated at 0.31 kg/capita/day. Also, there is no official landfill site or waste treatment plant. However, there are several informal sector waste collection points in the municipality operated by waste collectors and informal waste recyclers.

Figure 8: *Inorganic Waste Collection for Recycling Purposes*

Figure 9: *Source Separation of Inorganic Waste*

Figure 10: *Landfill Site of Savar municipality*

3.4. Disposal

There is no designated landfill within the Savar municipality. The majority of the generated waste is dumped in nearby roadways, drains, and beside waterbodies. One unofficial landfill has been found, which is at Komlapur, Birulia Union, Savar municipality. But it is located outside of the municipal area. The landfill area is 1.5 acres, and its depth is 12 feet. On average, 67 tonnes of solid waste are disposed of in this landfill site per day. The landfill has been functioning for the last 8 years. Figure 11: Dumping site for generated solid waste

Figure 11: *Dumping Site for Generated Solid Waste*

3.5. Reuse/Recycle

Currently, organic waste is improperly disposed of in a crude dumping manner in unauthorized places and landfills, as there is no compost plant within the municipality. In addition, the municipality lacks a town-wide primary solid waste collection infrastructure. The informal sector collects a small portion of the inorganic waste for recycling. These inorganic wastes have a high market value after being recycled.

Figure 12: *Inorganic Waste Stored for Recycling Purposes by the Informal Sector*

Chapter 4
Methodology

In order to prepare the Waste Flow Diagram (WFD), the following methodology (consisting of six steps) has been followed:

Figure 13: *Methodology for WFD*

4.1. Collection of Population Data and Update for the Current Year

The Bangladesh Bureau of Statistics (BBS) publication was used to estimate the target population of Savar Municipality. Since the information provided in the publication is based on the census year of 2022, the population data would need to be updated to estimate the current population. For instance, if provisions are to be made for the population in the year 2024, then the target population can be determined by the following formula:

$Pt = Po\ (1+r)^n$

Where, Pt = Population of the projected year t (in this case, 2024)

Po = Population of the base year (in this case, 2022)

r = Growth rate

n = Number of years

4.2. Waste Generation Rate (WGR) (kg/capita/day)

Waste is mainly generated from two sources: domestic and non-domestic. Three different income groups (low income, middle income, and high income) were selected to estimate the domestic waste generation. From each of the income groups, a sample survey was conducted to collect data regarding waste generation rate (kg/cap/day). Similarly, a sample size was selected to determine the non-domestic waste generation for the convenience of data collection and to achieve greater accuracy. Markets, katcha bazars, restaurants, schools, and offices have been selected for the determination of the waste generation rate from non-domestic sources. The survey was conducted for a minimum of three days in both residential and non-residential areas. Moreover, a sample survey was conducted to account for the amount of waste generated from street sweeping.

Table 4 below depicts sample sizes required under pre-defined sampling errors for household surveys. This table can provide guidance on the number of households to be included in a survey to obtain reliable results.

Table 4: Calculation of Sample Size for a Household Survey

Total No. of HH	Required Sample Size Allowing 95% Confidence Level		
	±5% Sampling Error	±7% Sampling Error	±10% Sampling Error
100	50	50	49
250	152	110	70
500	217	141	81
750	254	156	85
1,000	278	164	88
2,500	333	182	93
5,000	357	189	94
10,000	370	192	95
25,000	378	194	96
50,000	381	195	96
100,000	383	196	96
1,000,000	384	196	96
100,000,000	384	196	96

Source: Enayetullah, I., Rothenberger, S., Zurbrugg, C., and Sinha, A.H.M.M. (2006): "Decentralized Composting for Cities of Low- and Middle-Income Countries, A User's Manual," EWAG, Switzerland and Waste CWoncern, Bangladesh.

Table 5: Format for Recording Data for Daily Generation Rate of Solid Waste

House No*	Family Size**	Day 1	Day 2	Day 3	Total
1					
2					
3					
.					
.					
. 100					
Total	**A**				**B**

During the survey, total waste generation from these categories has been measured and summed up for individual categories. Then, the total waste has been divided by the total population for individual categories.

$$\text{WGR (waste generation rate)} = \frac{\text{Total waste generation}}{\text{Total population}} \text{ kg/capita/day}$$

The total waste generation of the municipality is calculated by multiplying WGR by the municipality's current population.

Figure 14: *Waste Generation Survey*

Figure 15: *Measurement of Generated Waste*

4.3. Waste Composition

The physical and chemical composition of the waste is very important for the selection of waste treatment, recycling, and disposal options. In order to assess the physical composition of waste, a field survey was conducted at the landfill site, and samples of waste were collected from different types of truck loads (open, covered, demountable container, tractor-trailer). The following format has been used to analyze the physical composition of waste carried by the truck.

Figure 16: *Waste Composition Survey at Source*

Figure 17: *Waste Composition Survey at Landfill*

Table 6: Format for Recording Waste Composition

Components	Residential (high/ medium/low income)/ Market Waste			Waste at the Truck				Total Weight	%
	Day 1	Day 2	Day 3	Type 1	Type 2	Type 3	Type 4		
Vegetable/ Food Waste								a	a/A X100
Bones								b	b/A X100
Paper								c	c/A*100
Textile									
Plastic									
Grass/ Wood									
Leather/ Rubber									
Metals									
Glass/									

Components	Residential (high/medium/low income)/ Market Waste			Waste at the Truck				Total Weight	%
	Day 1	Day 2	Day 3	Type 1	Type 2	Type 3	Type 4		
Ceramic									
Miscellaneous									
Total								**A**	**100**

The physical composition of the waste generated from the household and market has also been assessed, along with the physical composition at the landfill site. Households and market areas have been surveyed for three days during data collection. Waste from these two sources has been separated into components similar to those in Table 2.

4.4. Waste Collection Efficiency

Since a weighbridge is not available in Savar Municipality, and reliable records are not maintained at the landfill sites, a survey has been conducted to record the number of trucks and their design load-carrying capacity arriving at the landfill site over a period of 24 hours. This was undertaken to assess the quantity of waste collected by the municipal authority. Based on this data, the estimated amount of waste collected has been determined (number of trips X designed load carrying capacity of the truck). The efficiency of waste collection for the municipality was then assessed by using the following method:

$$\text{Efficiency} = \frac{\text{Total collected wastes by the waste collection vehicle}}{\text{Total waste generation in a municipal}} \textbf{ X 100}$$

Figure 18: *Waste Collection Vehicle (Truck)*

Figure 19: *Commercial Solid Waste Dumped Beside River*

4.5. Waste Collected by Informal Sector

In order to assess the informal waste collection activity in the municipality, a reconnaissance survey has been conducted in the study area. The objective of this survey is to identify the actors involved in waste recycling. Generally, several actors are involved in the waste recycling trade of small towns in developing countries. Actors could include:

- Van Collectors
- Waste Pickers
- Hawkers
- Municipal Waste Collectors
- Small Shops Dealing with Recyclables
- Whole seller
- Industries (Medium and Small).

Typically, shops and industries dealing with recyclable materials are clustered in certain areas of a town. Information about the location of these shops, numbers, and industries has been collected from hawkers, waste pickers, and municipal officials. After the collection of the aforesaid information, a questionnaire survey was conducted amongst these groups to assess the amount and type of waste collected by the informal sector for recycling.

Figure 20: *Waste Collection by the Informal Sector*

Figure 21: *Segregation of Wastes by Informal Sector*

4.6. Identification of Waste Leakage from Hotspots and Quantification of Leakage

The remaining wastes that have not been collected by both the municipal authority and the informal sector have been left on the roadside or disposed of in the waterbodies or low-lying areas that are inundated during the monsoon season. These leftover wastes were also part of the waste composition survey to prepare the WFD. The hotspots were identified for the respective municipality, and the volume of the leakage was quantified.

Figure 22: *Waste Dumping on the Local Road*

Figure 23: *Waste Dumping in the Local Waterbodies*

4.7. Data Analysis and Preparation of WFD

The data from the waste composition survey was checked and analyzed after it was collected. Following the analysis, the WFD for the municipality of Savar was created based on the waste composition data.

Chapter 5
Results & Discussion

5.1. Waste Generation Information

The municipality currently has a population of 405,247 in the year 2024. Waste generation rates in Savar are categorized into three different categories (High income, Middle income, and Low income). The overall waste generation rate from these categories is found to be 0.31 kg/capita/day.

Table 7: Overall Waste Generation Rate at Savar Cantonment Area

Income level	Waste generation rate (kg/p/d)	Non-domestic waste generation rate (kg/p/d)	Total waste generation rate (kg/p/d)
High income	0.49	0.087	0.31
Middle income	0.38		
Low Income	0.17		
Average	0.223		

Source: Field Survey (2021)

A total of 125.6 tonnes of solid waste is produced inside the municipality every day. Out of the produced waste, 76% is organic, and 16.49% is inorganic. The remaining 7.51% are comprised of inert materials that cannot be reused or recycled. Out of all the waste, only 4% (1834.1 tonnes/year) is recycled by the informal sector, where the rest of the 12.49% of the inorganic waste remains unutilized. The bulk portion of the waste (which is organic in nature) remains an untapped resource.

5.2. Waste Management

Waste collection efficiency in the whole municipality area is only 36.6% (16,507 tonnes/year). A bulk portion, 63.4% (29,346 tonnes/year), of the waste remains unmanaged during the process. Out of the collected waste of 16,507 tonnes/year, the majority portion of 14,627 tonnes/year is disposed of in low-lying areas utilizing crude dumping methods. All the unmanaged waste is disposed of in open drains, wetlands, or water bodies that exacerbate land, air, and water pollution. Some of the key findings from the WFD are as follows:

- Out of the inorganic waste of 1834 tonnes/year, which is recycled by the informal sector, a major portion (1192 tonnes/year) is plastic waste, 458.5 tonnes/ year is paper, and the remaining 229 tonnes/ year is comprised of glass waste.
- Out of the unmanaged solid waste of 29,346 tonnes/day, the bulk portion is organic in nature, amounting to 23,614 tonnes/ year. The remaining 5,745 tonnes/ year are inorganic. Table 8 shows the details of inorganic waste derived from the uncollected waste.

Table 8: Break-up of Unmanaged Inorganic Waste

Sources of Inorganic Waste	Waste Quantity (tonnes/day)
Paper	963
Plastic	2522
Glass	367
Metals	92
Others	1788
Total	**5731**

The following figure shows the overall waste management situation of Savar Municipality. The figure is based on the waste flow analysis.

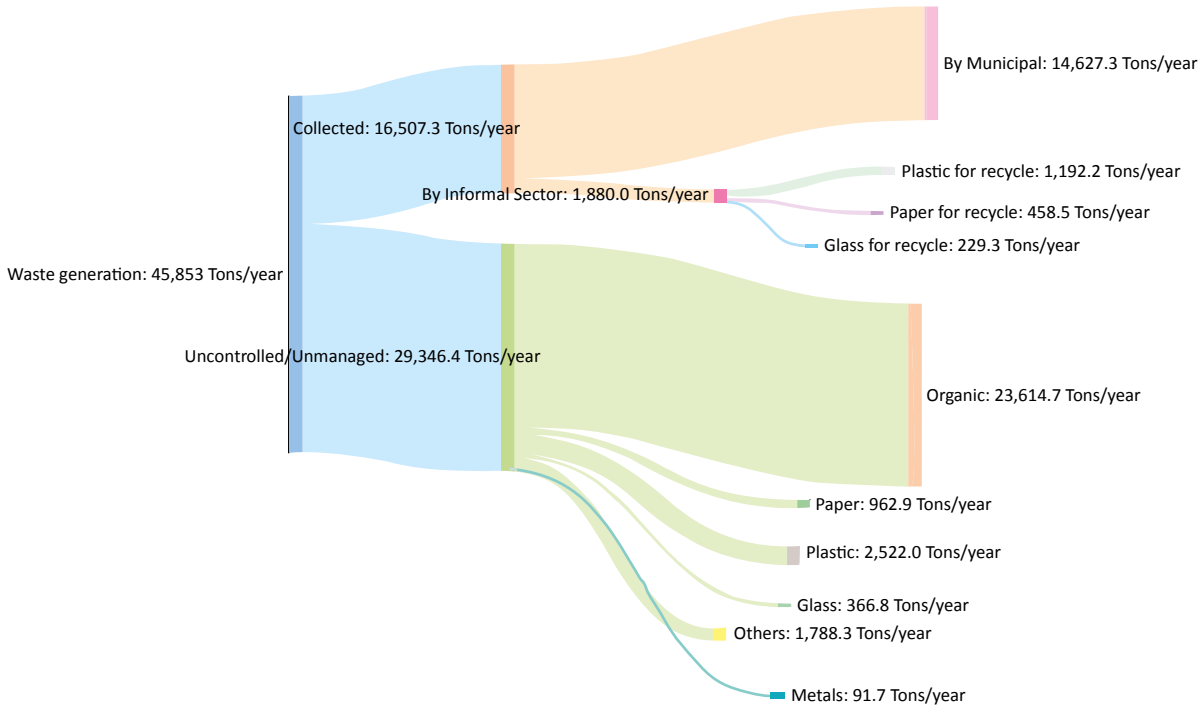

Figure 24: *Sankey Diagram of Waste Flow of Savar Municipality*

Chapter 6
Way Forward

WAY FORWARD

Based on the findings from the waste flow analysis, the following measures may be undertaken by the Savar municipality:

- Currently, waste collection efficiency is only 36% which is far behind the Government of Bangladesh's target to reach 75% collection efficiency by 2025.
- Based on this analysis, the municipality may prepare a waste management plan to meet the requirements of the National 3R Strategy for Waste Management, the Solid Waste Management Handling Rules 2021, and the Nationally Determined Contribution (NDC) of the Government.
- The NDC has set the target that 50% of the collected organic waste should be used for resource recovery to reduce GHG emissions by 2030.
- Only 4% of the inorganic waste is recycled by the informal sector, whereas the potential remains to increase this to 16%. Furthermore, 76% of the organic waste remains unutilized.
- Promotion of source segregation and 3R Strategy (Reduce, Reuse & Recycle) can divert both organic and inorganic waste from open dumps towards resource recovery and also contribute towards the reduction of GHG (Green House Gas) emissions and create green jobs.
- In order to improve waste diversion and recycling, the municipality may establish a transfer station (akin to an MRF) where inorganic waste can be recycled, and organic waste can be transported to composting plants or an AD facility in the periphery of the municipality.
- Awareness-raising programs can be initiated in the municipality using CSR funding since there are a number of industries located within the municipal area.
- Using the WFD, the municipality can fix targets for waste diversion programs and work with the private sector to initiate resource recovery projects such as MRF, Composting, and Anaerobic Digestion Plants using the PPP approach. Moreover, resource recovery projects are aligned with the mandate of support by the Government's Climate Change Trust Fund.
- Diversion of waste towards resource recovery will reduce the amount of waste used for open dumping of waste.
- The current analysis is based on the survey that was conducted only within one season. To obtain a comprehensive picture of the waste management situation, a year-long study is required to gain a deeper understanding of the waste volume and composition.

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Annexures

Annexure 1

Questionnaire - Informal Sector Waste Recyclers

1. Respondent Name and Address:.....
2. Occupation:.....
3. Place of Survey:.....
4. Gender and Age: Male/Female,..... Year.....
5. Education: Illiterate, Primary, JSC, SSC, HSC, Graduate, Masters
6. Number of Family Members: Male ..... Person, Female ..... Person
7. Are any other members of the family involved in plastic recycling work? Y / N

   If yes, how many people, Male ..... person, Female ..... person
8. Why do you take this work as an occupation? a) High income scope, b) Family work, c) Other work is not available, d) Other reason .....
9. How many days do you work in a week?: ..... Days
10. Monthly income/expenditure: Income ..... Taka, Expenditure ..... Taka
11. How many days are you working in this job?: ..... Month/Year
12. Do you have any work except this job: Y/N,

    If yes, what is that job: .....
13. Do you sell or buy any type of Plastic material? Y/ N If yes, then what .....
    1. PET purchase amount (Month/day) ..... Kg

       Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

       Selling price/per kg .....
    2. HDPE purchase amount (Month/day) ..... Kg

       Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

       Selling price/per kg .....
    3. PVC purchase amount (Month/day) ..... Kg

       Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

       Selling price/per kg .....
    4. LDPE purchase amount (Month/day) ..... Kg

       Purchase price/per kg ..... Selling amount (Month/Day)..... Kg

       Selling price/per kg .....

5. PP purchase amount (Month/day) ..... Kg

   Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

   Selling price/per kg .....

6. PS purchase amount (Month/day)..... Kg

   Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

   Selling price/per kg .....

7. Other (Mention name) .....

   Purchase amount (Month/day) ..... Kg

   Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

   Selling price/per kg .....

14. Tin purchase amount (Month/day)..... Kg

    Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

    Selling price/per kg .....

15. Iron purchase amount (Month/day) ..... Kg

    Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

    Selling price/per kg .....

16. Paper purchase amount (Month/day) ..... Kg

    Purchase price/per kg ..... Selling amount (Month/Day) ..... Kg

    Selling price/per kg .....

17. In your information, how many people are in this occupation?: ..... people.

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