CSR Impact Assessment Report

Solid Waste Management Project
Udupi City, Karnataka

Prepared For

HDB FINANCIAL SERVICES
REIMAGINING OPPORTUNITIES

Prepared By

SoulAce
Path to Sustainability

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CONTENT

ABBREVIATIONS

CSR	Corporate Social Responsibility
NGO	Non-Governmental Organization
SWM	Solid Waste Management
MT	Metric Ton
TPD	Tons Per Day
SHGs	Self-Help Groups
DWCC	Dry Waste Collection Center
MRF	Material Recovery Facility
CMC	City Municipal Corporation

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EXECUTIVE SUMMARY

Background

Project activities

- Door-to-door awareness and collection of waste (source segregation)
- Workshop / Training & awareness events on Solid waste management
- Shed development and management

Project year
FY 2018-22

Beneficiaries
20K+ HHs beneficiaries

NGO Partner
Saahas

Project Location
Udipi

Budget
FY 2018-19 - Rs. 49,63,200/-
FY 2020-21 – Rs. 1,11,84,600/-
FY 2021-22 – Rs. 79,98,140/-

SDG Goals

Research Methodology

Application of Quantitative Techniques

The quantitative study was used to assess the impact of divergent CSR Activities through the Structured tool of the Interview Schedule. This helped in getting quantifiable information.

Application of Qualitative Techniques

Qualitative Techniques of Interviews with Key Project Stakeholders, Interviews with Community People were adopted for a better understanding.

Research Design

Geography Covered (States)
35 wards of Udipi

Sample Technique
Purposive & Stratified Random Sampling

Direct Beneficiaries Covered
370 Direct Beneficiaries

Stakeholders
Project team, SHGs, Ward Members, etc.

Key Output:

98.3%

of the respondents reported being familiar with solid waste management, indicating a high level of awareness among the target population.

100%

of the respondents were aware of the SAAHAS intervention for solid waste management, indicating successful communication and promotion efforts by the initiative.

94.2%

of the respondents received education on proper waste disposal from the SAAHAS team, indicating a significant impact in spreading awareness and knowledge about waste management practices.

97%

of the respondents reported being aware of awareness drives conducted by SAAHAS regarding the segregation of wet and dry waste, indicating successful awareness generation efforts.

Impact:

80% of the respondents actively separate or segregate different types of waste at their homes, indicating a positive change in waste disposal practices among the surveyed population.

81.7% of the respondents expressed a high level of satisfaction with the present waste collection service, indicating improved service quality and customer satisfaction.

60% of the respondents mentioned cleaner roads and neighborhoods as a benefit of the garbage collection and disposal services, indicating an improvement in the overall cleanliness and hygiene of the area.

74% of the respondents perceived the waste disposal method in their neighborhood as a problem, suggesting a decrease in improper waste disposal practices.

88% of the respondents reported that the landfill is properly maintained, indicating effective management and upkeep of waste disposal facilities.

95% of the respondents reported being aware of the recycling process for the waste collected from the locality, highlighting an increased understanding of recycling and its environmental benefits.

100% of the respondents collected their waste on a daily basis.

CHAPTER 1: INTRODUCTION

Project Background

HDB Financial Services partnered with Saahas to implement the project "Solid Waste Management" in Udipi, Karnataka. The primary aim of this initiative is to address the issue of solid waste management across 35 wards of Udipi. The program focuses on generating awareness among the communities regarding the importance of adopting proper waste management practices and seeks to instigate behavioral changes that contribute to a cleaner and healthier environment.

To achieve these goals, the project has implemented a range of activities throughout the 35 wards of Udipi. One of the key components is door-to-door waste collection, which ensures that waste is systematically collected from households, promoting a more organized waste management system. Additionally, awareness campaigns and events have been conducted to educate the community about the significance of waste management, encouraging active participation and cooperation from residents.

Furthermore, the project includes the development of sheds in processing units (secondary units) for proper segregation of recyclable waste. These sheds serve as dedicated spaces for waste treatment and processing, enabling the adoption of more efficient and sustainable waste management practices. By improving the infrastructure and facilities available for waste processing, the project aims to enhance the overall waste management capabilities in Udipi.

The impact of the waste management program extends to a significant number of households in Udipi, with an outreach exceeding 20,000 households. By reaching out to such a large portion of the population, the project has the potential to bring about substantial positive changes in waste management practices and contribute to a cleaner and healthier environment in Udipi.

About the NGO Partner

Saahas is a non-profit organization working in the field of waste management. Their core belief is that waste can be transformed into a valuable resource when managed at its source. Since its establishment in 2001, Saahas has been actively involved in assisting communities, both in rural and urban areas of India, in effectively managing their waste. Their approach revolves around the principles of reducing, reusing, and recycling waste, with the goal of achieving 90% resource recovery.

The organization was founded by Wilma Rodrigues, a former journalist, and registered under the Societies Act. Saahas was established to promote waste management practices that align with the progressive Municipal Solid Wastes (Management and Handling) Rules of 2000. Headquartered in Bangalore, Saahas has expanded its operations to other cities such as Gurugram, Surat, Chennai, Hubballi, and Ballari.

Over the years, Saahas has been at the forefront of innovation, incubation, and promotion of waste management programs. They focus on two key principles: "Segregation at Source" and "Decentralized Waste Management." Segregation at Source emphasizes the importance of sorting waste at the point of origin to enable efficient recycling and recovery processes. Decentralized Waste Management involves establishing waste management systems within local communities, reducing reliance on centralized facilities, and promoting community involvement in waste management practices.


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ಉಡುಪಿ ನಗರಸಭೆ
CMC UDUPI
ಒಣತ್ಯಾಜ್ಯ ನಿರ್ವಹಣಾ ಘಟಕ
Material Recovery Facility (MRF)
Sy. No : 21, ಘನತ್ಯಾಜ್ಯ ಸಂಸ್ಕರಣಾ & ವಿಲೇವಾರಿ ಘಟಕ
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CHAPTER 2: RESEARCH METHODOLOGY

Use of Mixed Methodology for Maximum Insights

The research concern here is to understand and assess the impact created by the different interventions under the Solid Waste Management Project supported by HDB FS and implemented by SAAHAS Organization in Udupi City, Karnataka, India. The research gives due emphasis to the social and futuristic impact that the project created across different target beneficiaries and various stakeholders within the city. Toward this end, to gain maximal insights, both quantitative and qualitative techniques were used.

Application of Quantitative Techniques

A quantitative Study can be conducted to collect quantitative data on waste generation, disposal practices, awareness about waste management, and opinions on the effectiveness of the current waste management system. The survey can be administered to a representative sample of households in the city, and the data can be analyzed using statistical techniques such as regression analysis to identify the factors that influence waste generation and disposal practices. A quantitative impact assessment can be conducted to measure the effectiveness of the waste management project in terms of its impact on the environment and the community in Udupi City, Karnataka, India.

Application of Qualitative Techniques

Qualitative research often involves conducting in-depth interviews with individuals. In the case of a solid waste management project, researchers could interview people and staff to gain insights into their attitudes, perceptions, and experiences with waste management. This could include questions about how waste is currently managed in Udupi City, Karnataka, India, what challenges they face, and what they think about the project. The researchers could observe the current waste management practices in Udupi City, Karnataka, India to better understand the context in which the project will be implemented. This could include observing how waste is collected, transported, and disposed of.

Research Design

- Name of the project : Solid Waste Management Project, Udupi City, Karnataka, India
- Project Partner : SAAHAS organization
- Research Design used : The mixed method has been used to conduct the study by giving emphasis to both qualitative and quantitative methods of data collection. Qualitative data has been collected using case studies and open-ended interviews, and quantitative data have been collected using close-ended interviews.
- Sampling Technique : Simple random sampling has been done to assess the impact of the Solid Waste Management Project. The quantitative data was collected from beneficiaries.

Objectives of the Study

The study intends to find out the impact of the CSR Intervention of HDB FS in Solid Waste Management through SAAHAS in Udupi, Karnataka, India.

Specific objectives

- The efficacy with which the implementation of solid waste management is being carried forward by the City Municipal Corporation workers and officials.
- The condition of the infrastructure provided for solid waste management.
- Functioning, employment generation, and income generation among shed workers and SHGs.
- Change in awareness among the households across the wards and to what extent.

Ultimately, the study extensively examined the existing barriers and key challenges, actively seeking feedback from key stakeholders to develop thoughtful recommendations for improvement. Additionally, the study prioritized identifying further requirements relating to the working mechanism, providing training, allocating process machinery, and dispensing fund assistance. Addressing any shortcomings or problems that may arise in the process of maintaining smooth operations was also of utmost importance. Moreover, the study aimed to accurately recognize any operational inadequacies that may exist to better understand how they may be addressed.

The study involved a series of important Key Informant Interviews aimed at gaining insights into the environmental situation in the area. Firstly, the CMC office was visited to meet with the Environmental Engineer responsible for overseeing a variety of environmental conservation initiatives. This visit provided an opportunity to gain insights into the different projects being implemented by the local government to ensure sustainability.

Names of Wards Covered under survey

Location	Bannanje	Beedingudde	Landfill Site	Walking Inspection
Wards Covered	Bannanje Ambalpady Kadiyali GundiBali Kakkaunje	Kinnimulky Tenkapete Ajouarkaadu Indrali	Manipal Indrali Shirreebidu	Tenkapete, Shiribeedu, Bannanje Kadiyali, GundiBailu, Karamballi, Kaktunje Malpe, Vadabandeshwar, Kamadi

Infrastructure

The focus in the initial years was on eight wards and infrastructure was provided to these to facilitate efficient Waste Segregation Management at the sheds of Bannanje and Beedinguddi. The specifics of the machinery and other equipment provided are as below:

Area	Total Sheds	Equipment Details	Remarks	Infrastructure Status
Bannanje	2 Sheds	1 Trommel machine 1 conveyer belt Bins PPE kits Cloth bags distributions	Dry Waste Processing	Functioning
Beedinguddi	3 Sheds	2 conveyer belt 1 Shredder Bins PPE kits Cloth bags distributions	Dry Waste Processing	Functioning
Landfill	2 Sheds	1 compost Turner Bins PPE kits Cloth bags distributions Material Recovery Machine (MRF)	Wet Waste Processing	Functioning (MRF yet to commission)

Systems and Processes

The processes established during the project implementation by SAAHAS are being followed and are continuously being improvised by the parties involved in waste management processing.

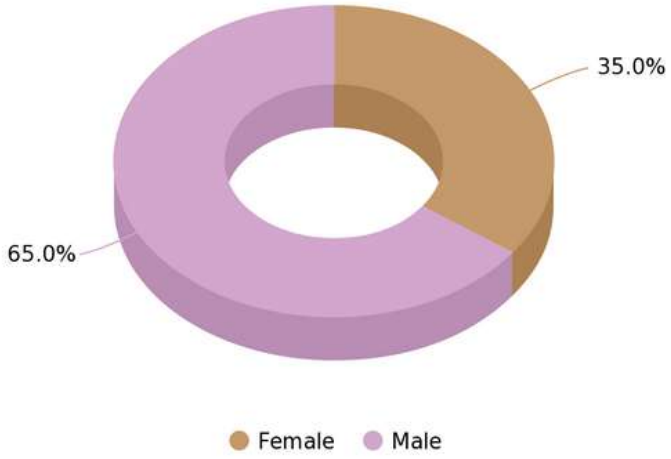
The data monitoring system introduced by SAAHAS for the data collection and record maintenance of waste has been maintained by all the SHGs regarding its outflow and inflow in every transaction. All transactions of all the SHGs are streamlined, collected daily, and up to date. A supervisor from CMC is deputed to monitor the activities of SHG sheds. The implemented practice has been useful to CMC in the daily status of the waste management process and the income recognized from it.

CHAPTER 3: FINDINGS OF THE STUDY

The major findings section of an impact assessment for a solid waste management project will provide insights into the current waste management practices in the village, the effectiveness of the project, and opportunities for further improvements. The findings will help to guide future waste management efforts and improve the sustainability of waste management practices in the village.

General Information

Chart 1: Distribution of respondents by gender

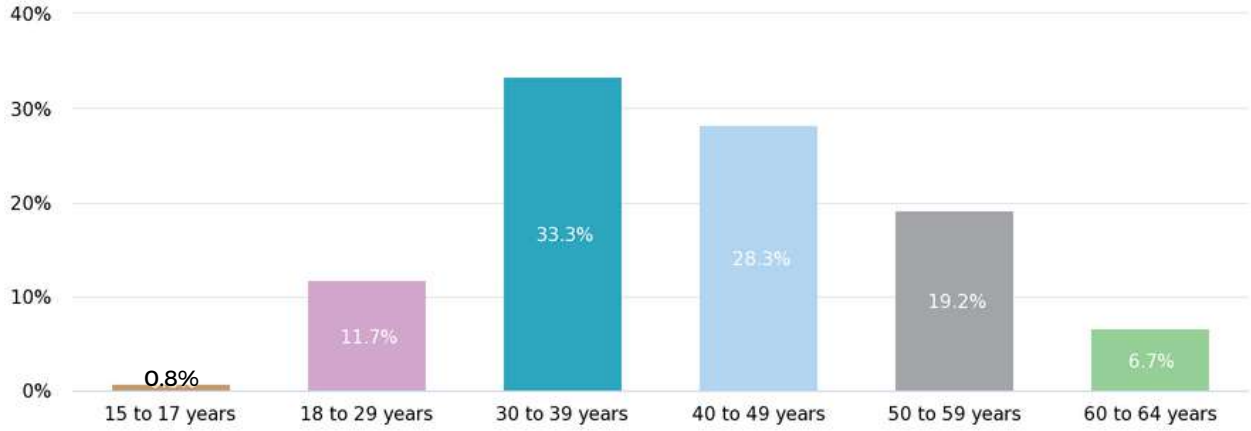


Based on the pie chart, we can deduce that there is a notable gender disparity among the respondents. Approximately 65% of the participants were male, while only 35% were female.

According to Mrs. Sneha, SAAHAS's awareness campaign has played a crucial role in educating residents about effective waste management, including sanitary waste. This approach has significantly improved the waste management system in Udupi, promoting efficient waste management and enhancing the city's hygiene conditions.

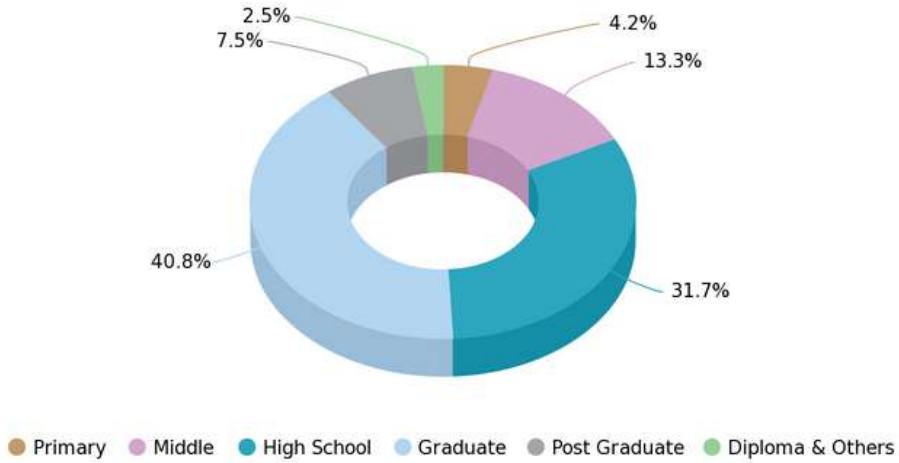
- Mrs. Sneha, an Environmental Engineer at the CM

Chart 2: Distribution of respondents by age group



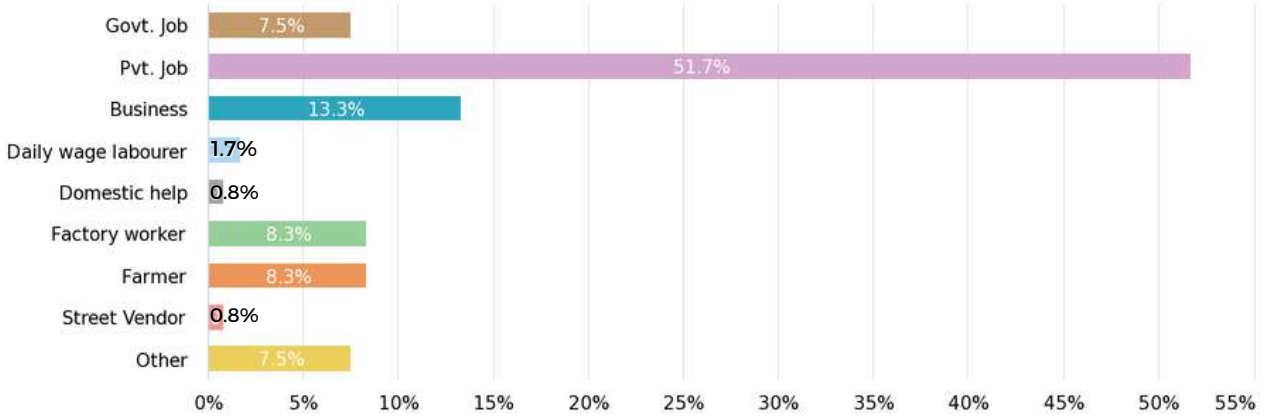
The analysis of the age-group-wise distribution reveals interesting patterns within the respondents' demographics. The largest proportion of respondents, accounting for 33.3%, falls within the age group of 30 to 39 years. Following closely, 28.3% of the respondents belong to the age group of 40 to 49 years, indicating a significant representation of this demographic. Additionally, 19.2% of the respondents were in the age group of 50 to 59 years, suggesting a considerable presence of individuals in this age bracket. Furthermore, 11.7% of the respondents were relatively younger, ranging from 18 to 29 years, while a smaller percentage, 6.7%, consisted of individuals aged 60 to 64 years. It is worth noting that there was a minimal representation of respondents in the age group of 15 to 17 years, comprising only 0.8% of the total respondents.

Chart 3: Distribution of respondents by education level



The analysis of the education-wise distribution reveals that 40.8 % of the respondents are graduates, 31.7 % have completed high school education, 13.3 % have completed middle school education, 7.5 % have pursued post-graduate education, 4.2 % have completed primary school education, and % 2.5 have completed diplomas or other qualifications. These findings demonstrate a diverse range of educational backgrounds among the surveyed population, with a significant number of individuals having higher education qualifications.

Chart 4: Distribution of respondents by occupation

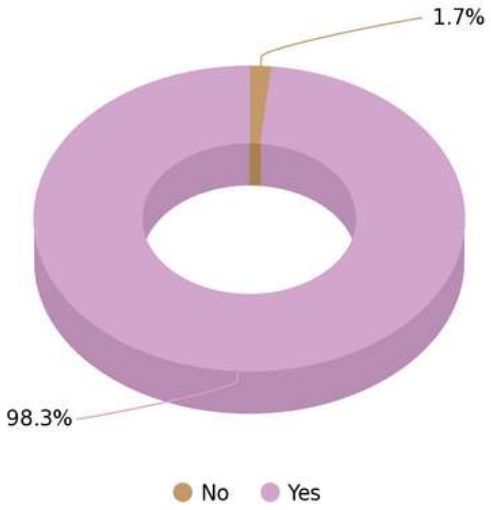


The graph analysis shows that among the respondents, 51.7% have private jobs, indicating a significant presence in the private sector. Additionally, 13.3% are involved in businesses, highlighting the presence of entrepreneurs and self-owned enterprises. The agricultural sector is represented by 8.3% of farmers, while 8.3% work as factory workers, indicating the importance of the manufacturing sector. Government jobs account for 7.5% of the respondents, suggesting employment in the public sector. The remaining 7.5% represent diverse occupations that don't fit into predefined categories. Furthermore, 1.7% work as daily wage laborers and 0.8% are engaged in informal sectors such as domestic help and street vending.

Field visit - Household and Udupi City

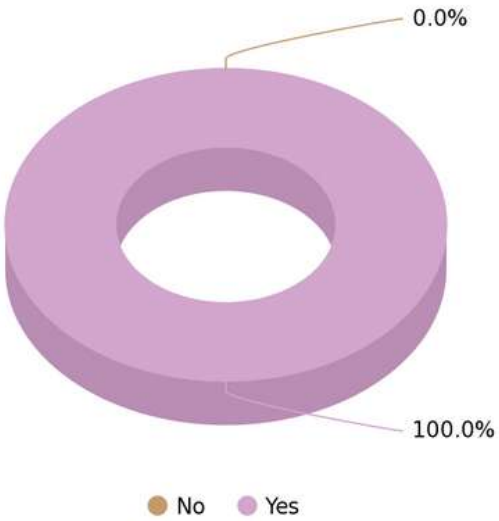
Awareness about Solid Waste Management / Initiative

Chart 5: Have you ever heard about solid waste management?



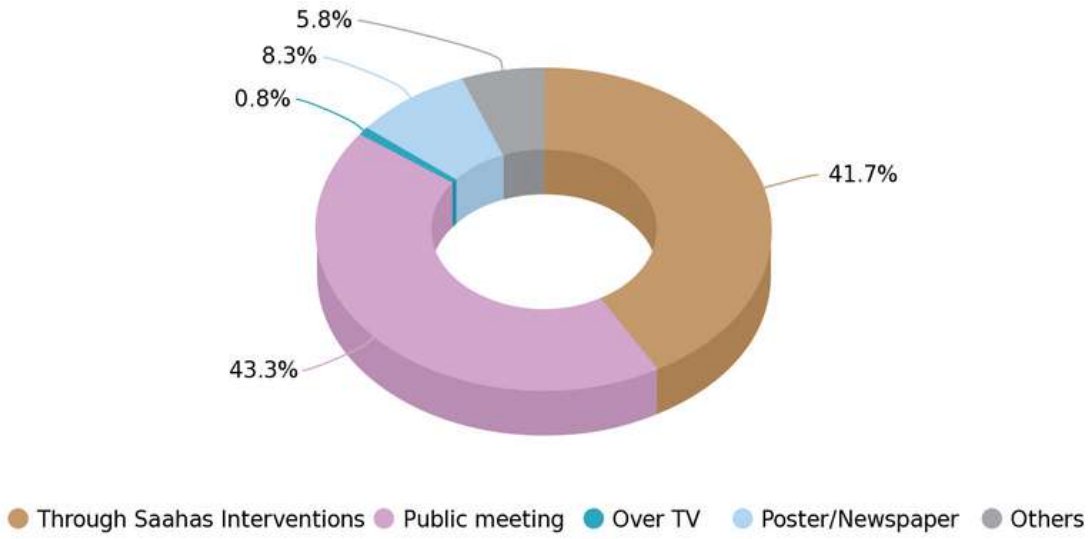
The analysis of the study indicates a high level of awareness regarding solid waste management among the respondents, with 98.3% of them reporting familiarity with the topic.

Chart-6 Awareness of the SAAHAS intervention?



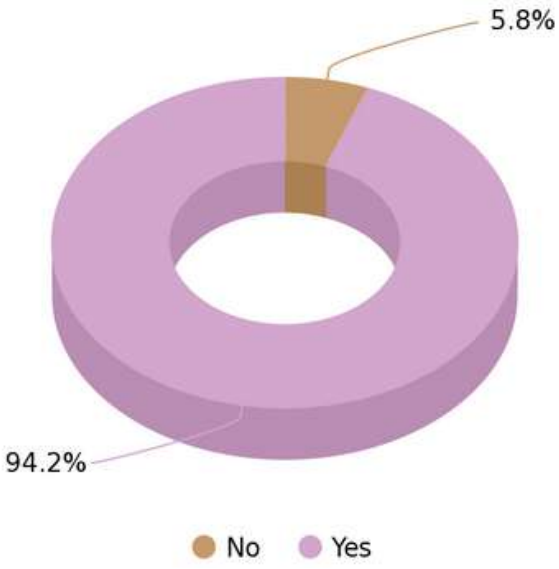
The analysis of the graph reveals that all the respondents surveyed had an awareness of the SAAHAS intervention for solid waste management. This finding indicates that the SAAHAS intervention has achieved a comprehensive reach and visibility among the target population. The 100% awareness level suggests successful communication and promotion efforts by the SAAHAS initiative, ensuring that every respondent in the study was familiar.

Chart 7: Source of awareness of SAAHAS



The analysis reveals that the majority of respondents (43.3%) became aware of SAAHAS through public meetings, while 41.7% were informed through SAAHAS interventions. A smaller percentage mentioned posters/newspapers (8.3%) and television (0.8%) as their sources of awareness. Additionally, 5.8% reported other sources not included in the given options.

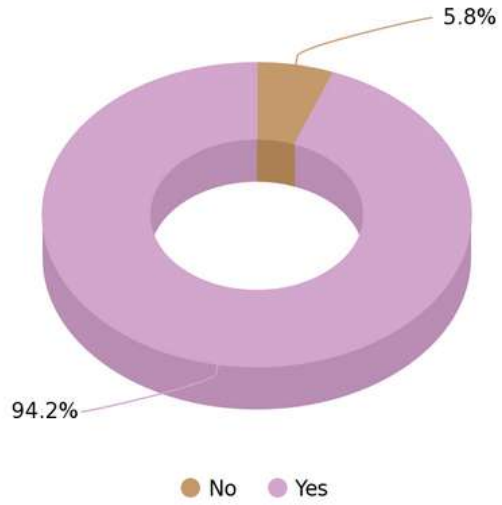
Chart 8: Was there any system for garbage collection by the local authorities before the SAAHAS Intervention?



The analysis shows that the majority of respondents (94.2%) indicated that there was a system for garbage collection by the local authorities before the SAAHAS intervention. A smaller percentage (5.8%) reported a negative response, indicating the absence of such a system.

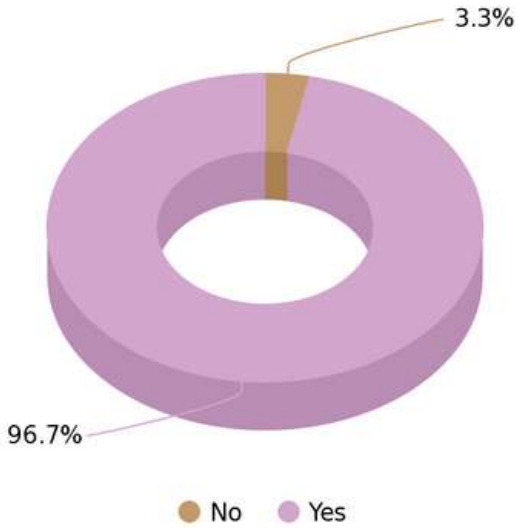
Segregation of Solid Waste

Chart 9: Have you ever been educated on proper waste disposal by the SAAHAS Team?



The analysis reveals that a significant majority of respondents (94.2%) have received education on proper waste disposal from the SAAHAS team. However, a small percentage (5.8%) of respondents were not educated on this aspect.

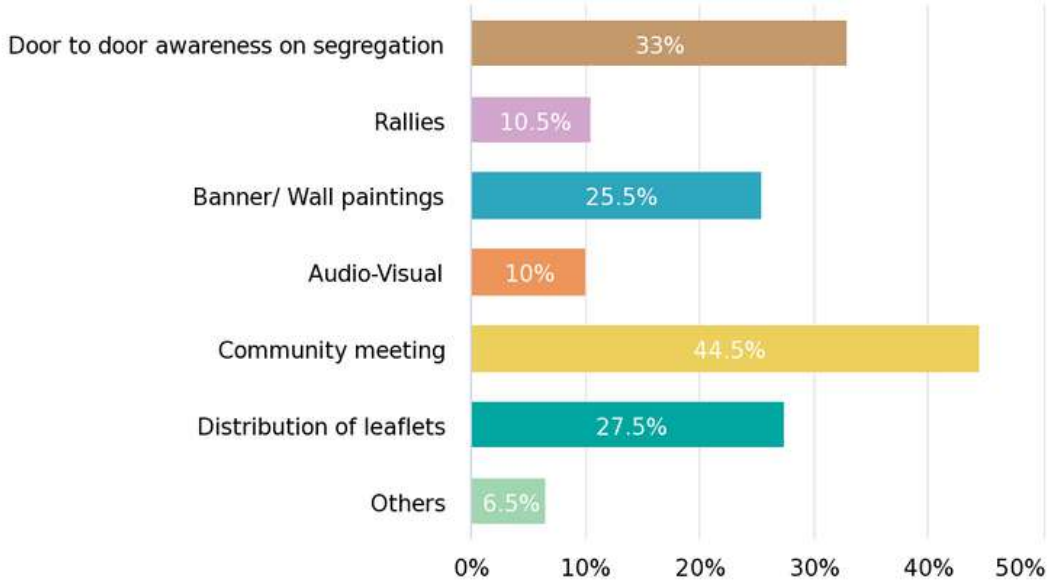
Chart 10: Was there any awareness drive on the segregation of wet and dry waste carried out by SAAHAS?



The analysis indicates that a high proportion of respondents (96.7%) reported being aware of awareness drives conducted by SAAHAS regarding the segregation of wet and dry waste. Only a small percentage (3.2%) of respondents stated that they had not received awareness on this aspect.

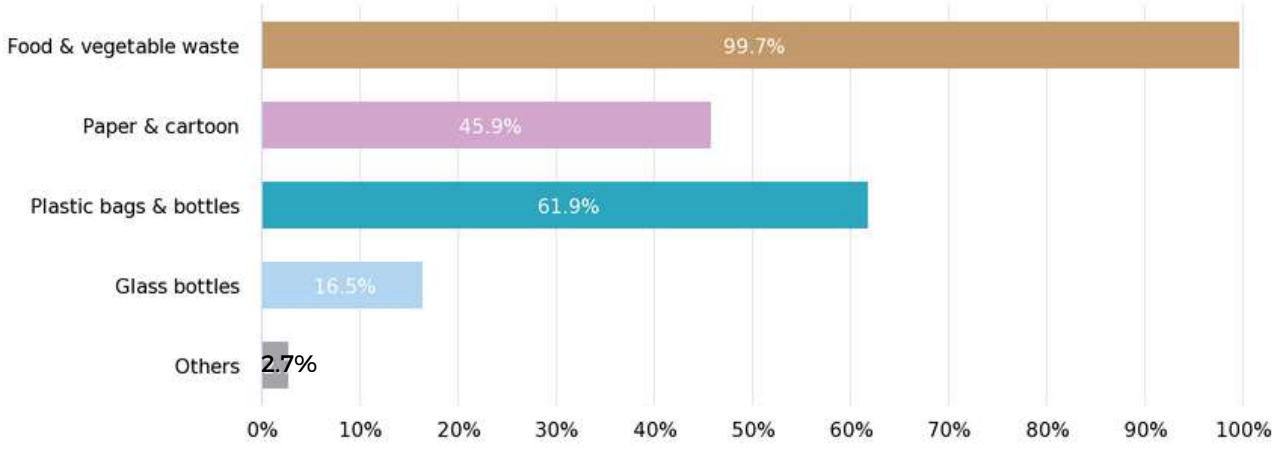
Field visit - Household and Udupi City

Chart 11: What was the mode of awareness generation?



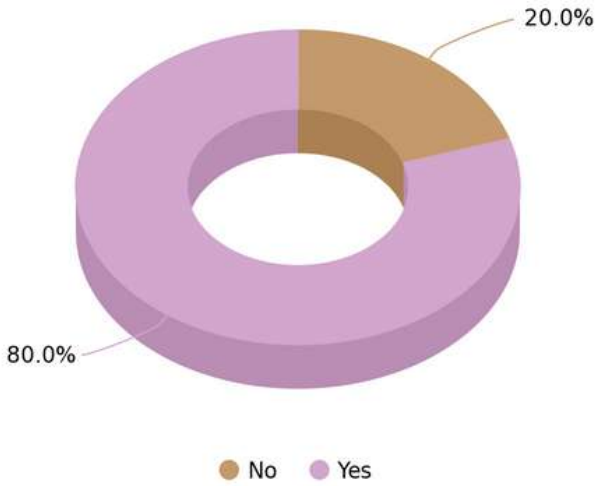
The analysis reveals that the majority of respondents (44.5%) reported community meetings as the mode of awareness generation. Door-to-door campaigns on segregation were mentioned by 33% of respondents, while 27.5% mentioned the distribution of leaflets. Banner/wall paintings were reported by 25.5% of respondents, while 10.5% mentioned rallies. Audio-visuals were reported by 10% of respondents, and a small percentage (6.5%) stated that the mode of awareness generation was not listed.

Chart 12: What types of solid waste are generated in your household on a daily basis?



The analysis reveals that a high percentage (99.7%) of respondents reported daily generation of food and vegetable waste in their households. Plastic bags and bottle waste were reported by 61.9% of respondents, while paper and cardboard waste was generated by 45.9% of respondents. Glass bottles were mentioned by 16.5% of respondents as a form of waste generated. A small percentage (2.7%) reported waste that was not mentioned in the provided list.

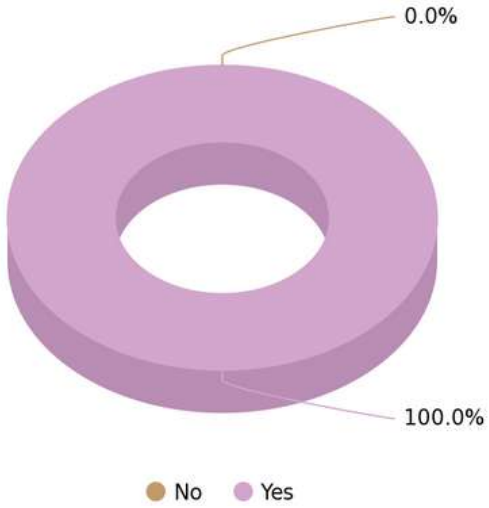
Chart 13: Do you separate/segregate different types of waste at your home?



The analysis indicates that a majority (80%) of the respondents separate or segregate different types of waste at their homes. However, a notable portion (20%) of the respondents do not engage in the practice of separating or segregating waste at their homes.

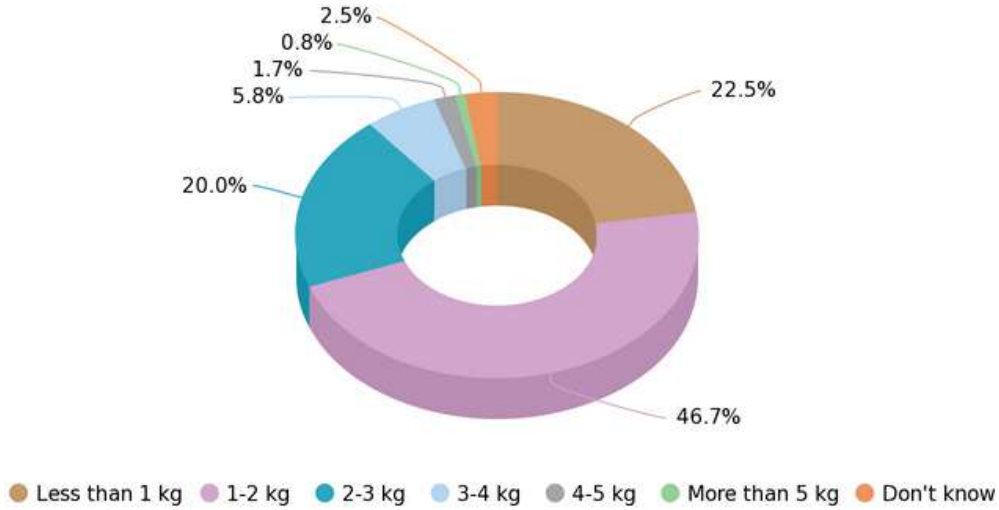
SHG Sheds at Udupi

Chart 14: Do you collect waste on a daily basis?



The analysis reveals that all respondents in the study collect their waste on a daily basis.

Chart 15: If yes, can you please specify the quantity?

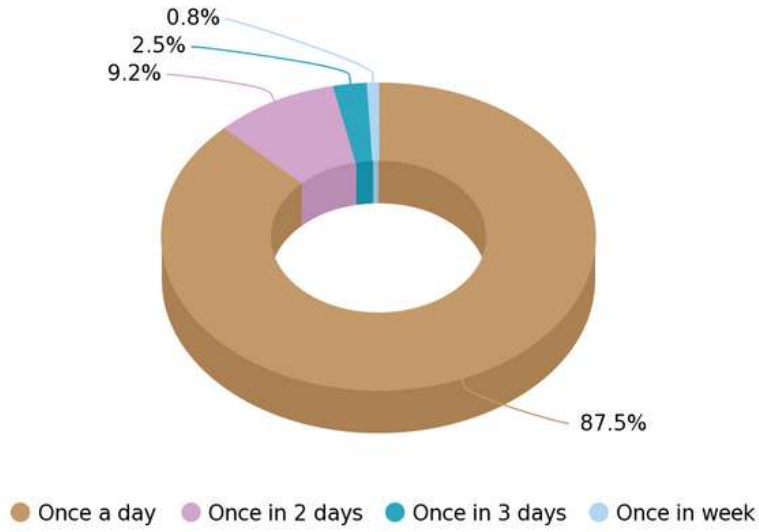


The analysis shows that the majority of respondents, 46.7%, collect less than 1-2 kg of waste on a daily basis. Additionally, 22.5% collect less than 1 kg of waste daily, while 20% collect 2-3 kg, and only a small percentage, ranging from 0.8% to 5.8%, collect higher amounts of waste. There is a small percentage of respondents who don't know how much waste they collect on a daily basis.

> Mrs. Sneha said that there was a tremendous improvement in the way SelfHelp Groups (SHGs) worked under the guidance of SAAHAS. The provision of Trommel and conveyor belts helped increase effective waste segregation, and every single inch of waste is now being properly segregated. The SHGs do not throw any garbage outside nor send it to landfills, and all waste is sold for income generation.

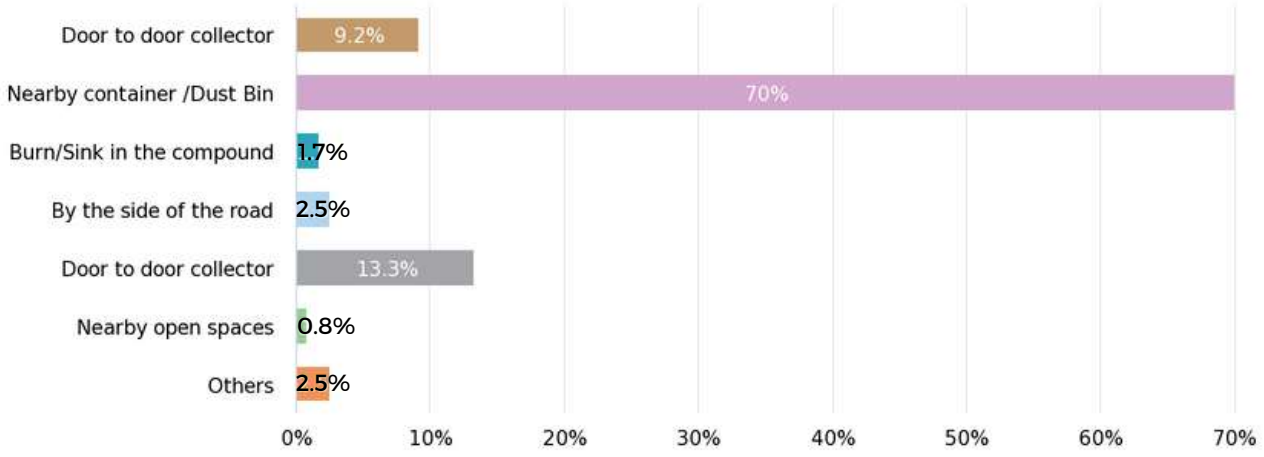
- Mrs. Sneha, an Environmental Engineer at the CMC

Chart 16: How often is the waste container emptied?



The analysis reveals that the majority of respondents, 87.5%, have their waste containers emptied once a day, indicating a high frequency of waste collection. A smaller proportion, 9.2%, have their containers emptied once in 2 days, while only 3% and 1% have their containers emptied once in 3 days and once a week, respectively. This indicates that most respondents require daily waste collection services.

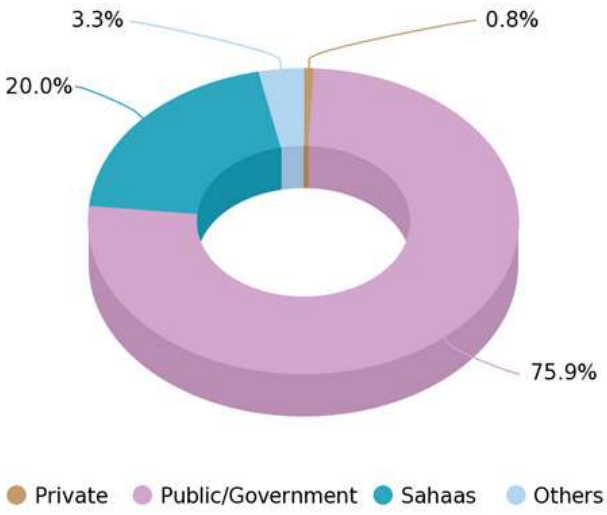
Chart 17: Place of disposal of generated waste?



The analysis shows that a majority of respondents, 70%, dispose of their generated waste in nearby containers or dust bins, indicating a preference for proper waste disposal facilities. Additionally, . 9.2% of the respondents opt for the convenience of door-to-door waste collection services. However, a small proportion, 2.5%, still resort to improper disposal methods such as disposing of waste by the side of the road. Another 2.5% choose other spaces for waste disposal, while 1.7% resort to burning or sinking waste in their compounds. Only 0.8% of the respondents dispose of their waste in nearby open spaces, suggesting a relatively low occurrence.

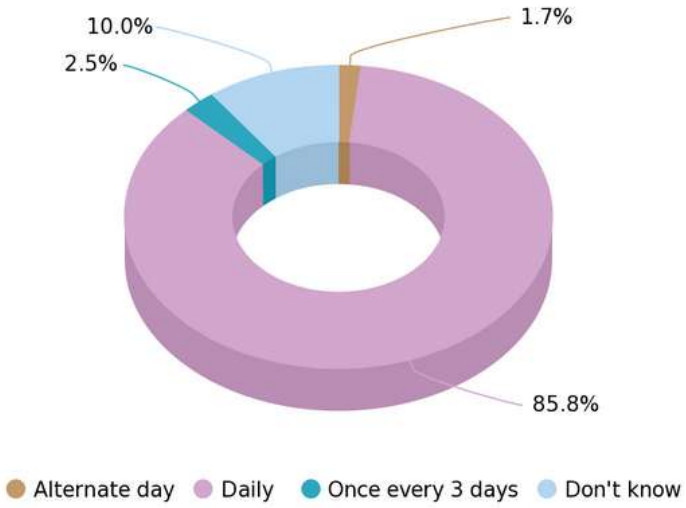
Waste Collection Services

Chart 18: Which collection service do you use?



The analysis of the pie chart reveals that the majority, 75.9% of the respondents, rely on public or government waste collection services. A significant portion, 20% of the respondents, utilize the services provided by SAAHAS for waste collection. A smaller percentage, 3.3%, choose other waste collection services, indicating some diversity in available options. Private waste collection services are preferred by only 0.8 of the respondents, representing a minority choice in waste management.

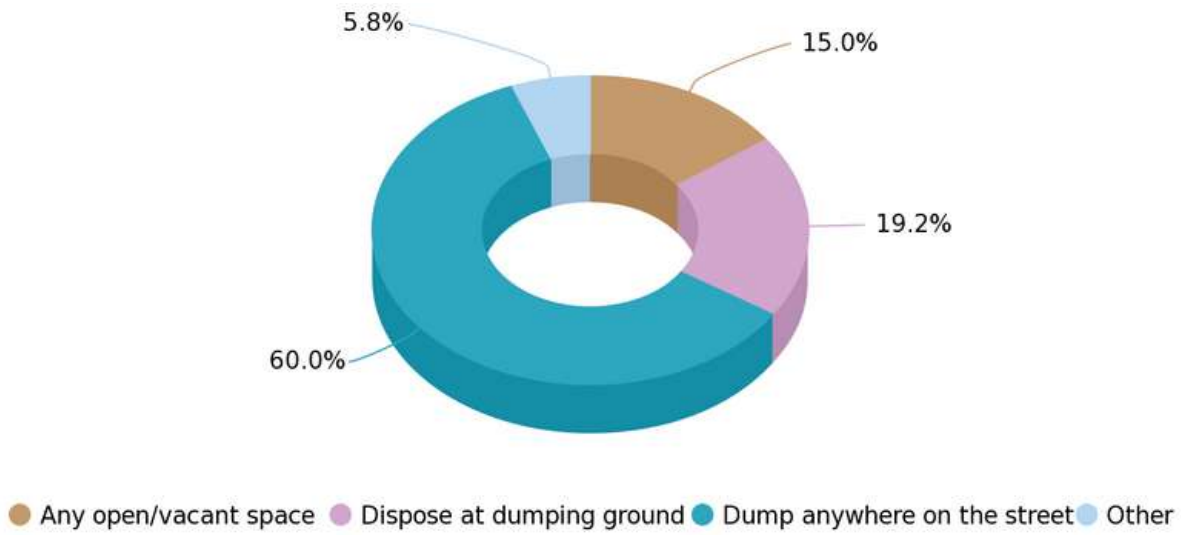
Chart 19: How often/frequent does the collector come to collect?



The analysis of the graph indicates that a large majority, 85.8% of the respondents, reported that the waste collector visits their location on a daily basis to collect the waste. A notable percentage, 10% of the respondents, expressed uncertainty about the collector's schedule. A smaller portion, 2.5% of the respondents, stated that the collector comes once every 3 days, while 1.7% reported that the collector comes on alternate days for waste collection.

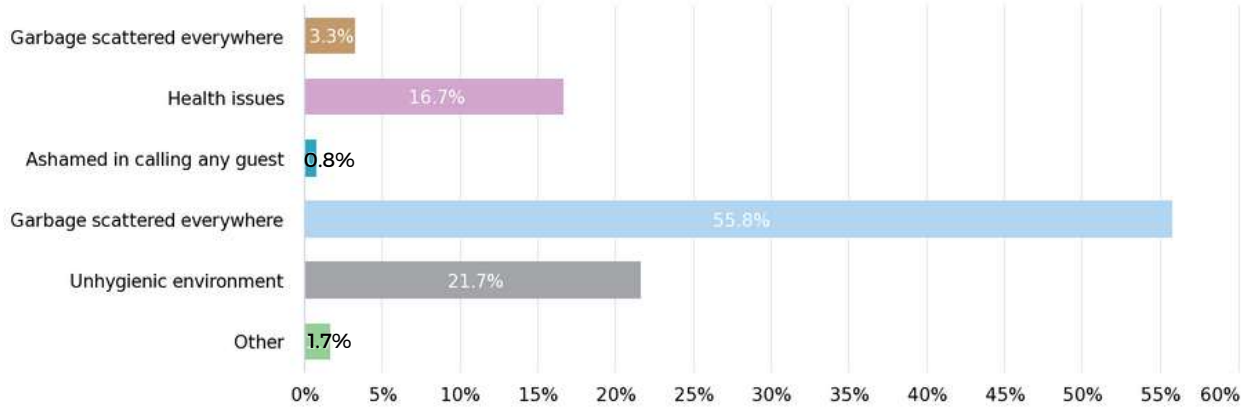
SHG Sheds at Udupi

Chart 20: Before SAAHAS practice of waste disposal?



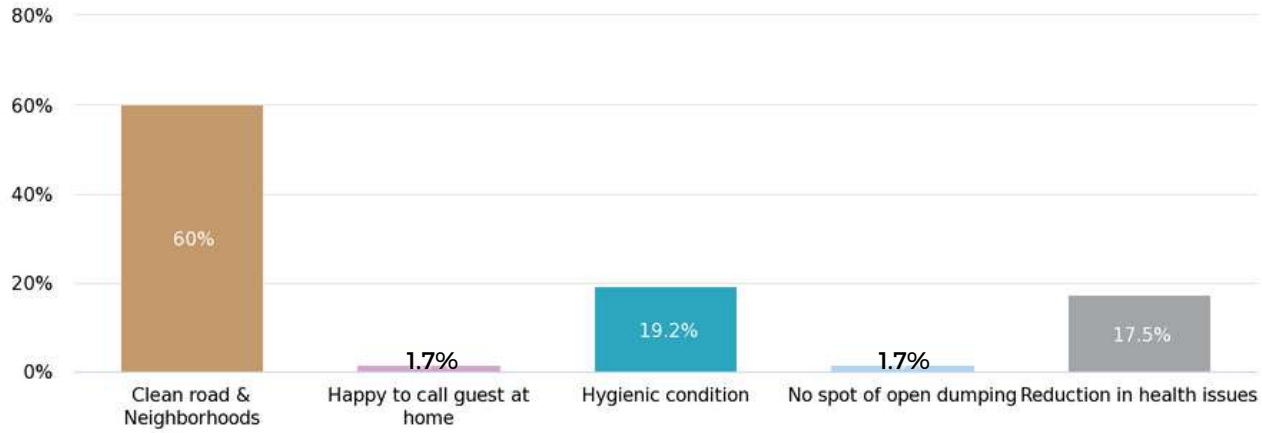
The analysis of the graph reveals that a majority, 60% of the respondents, reported that waste used to be disposed of indiscriminately anywhere on the street. A significant proportion, 19.2% of the respondents, stated that the waste was disposed of at designated dumping grounds. Another portion, 15% of the respondents, mentioned that waste used to be disposed of in any open or vacant space. A smaller percentage, 5.8% of the respondents, reported that waste used to be disposed of in other spaces.

Chart 21: Problems faced due to the lack of a proper waste disposal system?



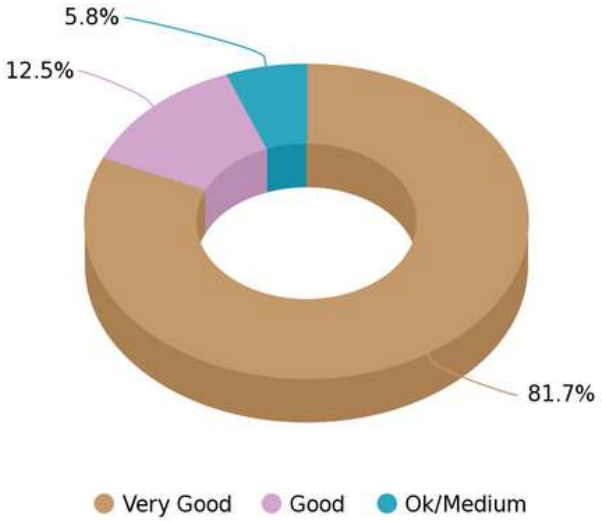
The analysis of the graph indicates that a significant proportion, 59.2% of the respondents, reported that garbage was scattered everywhere due to the lack of a proper waste disposal system. Additionally, 21.7% of the respondents reported an unhygienic environment resulting from the absence of a proper waste disposal system. Furthermore, 16.7% of the respondents faced health issues as a consequence, while 1.7% reported experiencing other issues related to the lack of proper waste disposal. A small percentage, 0.8% of the respondents, expressed feeling ashamed to invite guests over due to the inadequate waste disposal system.

Chart 22: Benefits of the garbage collection and disposal services



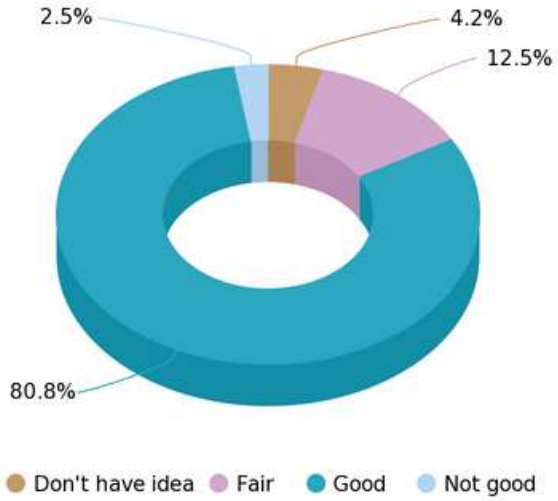
The analysis of the graph reveals that, following the solid waste management project,, 60% of the respondents reported that the benefits of the garbage collection and disposal services were cleaner roads and neighborhoods. Furthermore, 19.2% of the respondents highlighted the improved hygienic condition as a benefit of the services. Additionally, 17.5% of the respondents mentioned a reduction in health issues as a result of the garbage collection and disposal services. A small proportion, 1.7% of the respondents, stated that the services eliminated spots for open dumping. Lastly, 1.7% of the respondents expressed their newfound happiness in inviting guests over to their homes.

Chart 23: Satisfaction level about the present service of the collection



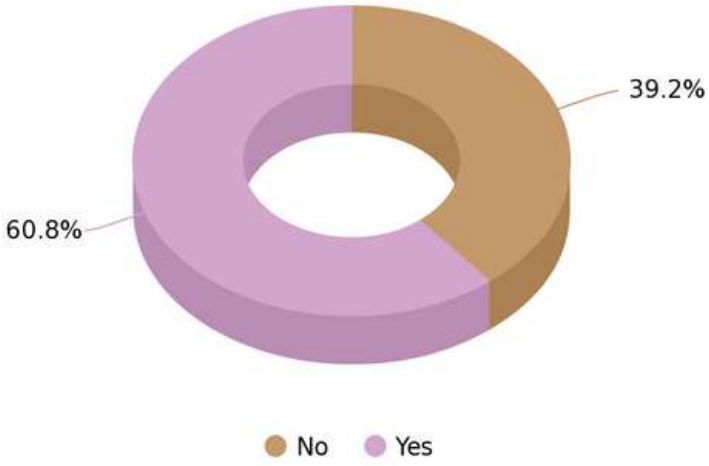
The analysis of the survey data indicates that a majority of the respondents, 81.7%, expressed a high level of satisfaction with the present service of waste collection, stating that they feel very good. Additionally, 12.5% of the respondents reported feeling good, indicating a positive satisfaction level. A smaller proportion, 5.8% of the respondents, mentioned feeling okay or having a medium level of satisfaction with the service.

Chart 24: How do you evaluate the condition of waste collection in your house area?



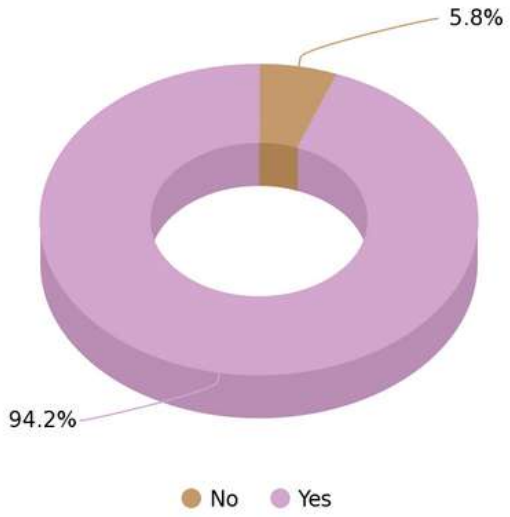
Based on the survey responses, it can be observed that a majority of the respondents, 80.8%, evaluated the condition of waste collection in their house area as good. A smaller percentage, 12.5%, considered it to be fair, while 4.2% admitted to not having an idea about the condition. Only 2.5% of the respondents stated that the condition of waste collection in their house area is not good.

Chart 25: Is dumping waste alongside the road still prevalent?



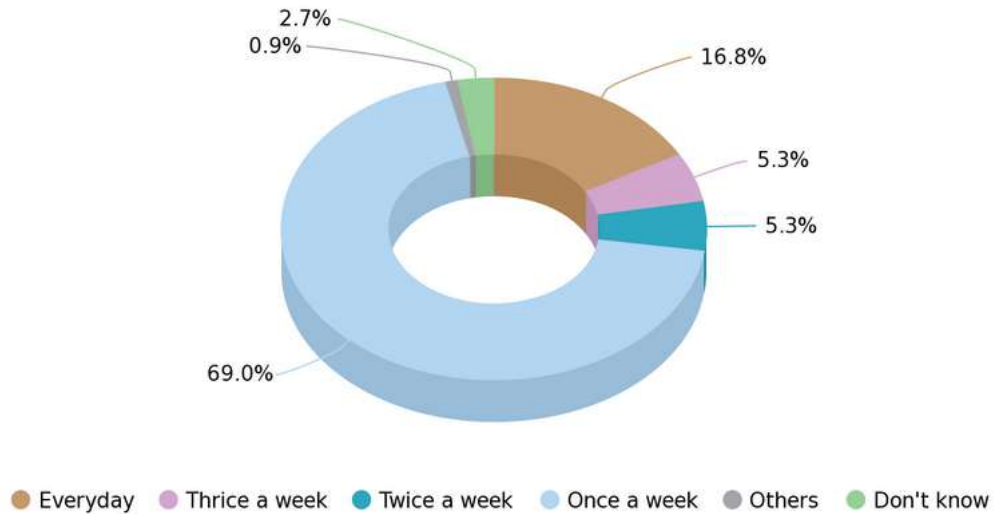
Based on the pie chart, it can be understood that 60.8 % of the respondents reported that people still dump their waste alongside the road instead of giving them to the collector. Conversely, 39.2 % of the respondents reported that people did not dump their waste alongside the road and instead gave it to the collector.

Chart 26: Is there any large bin in your locality?



The pie chart indicates that 94% of the respondents reported the presence of a large bin in their locality, while only 6% of the respondents reported the absence of a large bin in their locality.

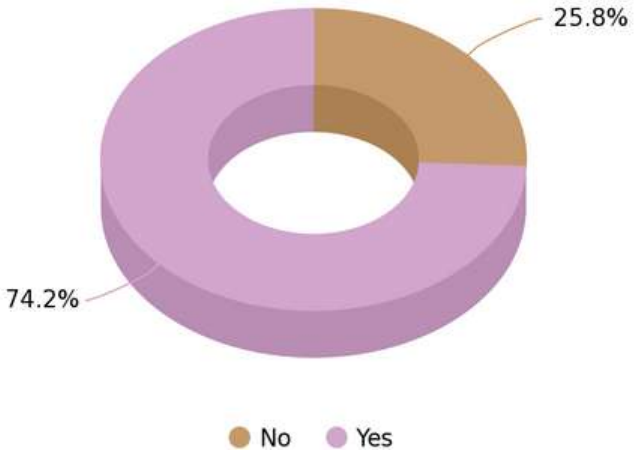
Chart 27: If there are waste bins, how often are the nearest bins emptied?



The graph indicates that 69% of the respondents reported that the nearest bins in their locality were emptied once a week, while 16.8% reported daily emptying. Additionally, 5.3% of the respondents mentioned twice a week emptying, and another 5.3% reported thrice a week emptying. A small percentage (2.7%) of the respondents stated that they didn't know the emptying schedule, and 0.9% indicated that their response wasn't listed.

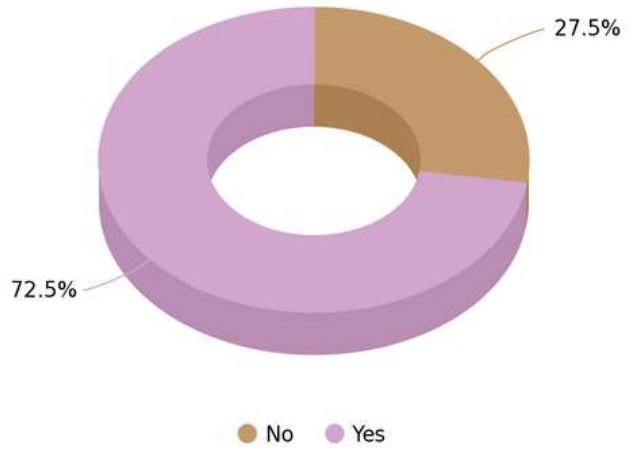
Field visit - Household and Udupi City

Chart 28: Is waste disposal in your neighborhood a problem?



The pie chart reveals that 74% of the respondents perceive the waste disposal method in their neighborhood as a problem, while 26% of the respondents do not consider it to be a problem.

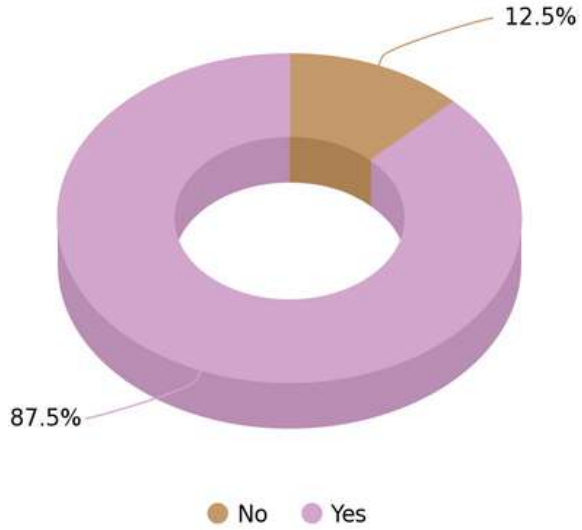
Chart 29: Any facility nearby for waste treatment or sanitary landfill?



The pie chart indicates that 72.5% of the respondents reported the presence of a nearby facility for waste treatment or sanitary landfill, while 27.5% of the respondents reported the absence of such a facility in their vicinity.

> Mr. Umesh is responsible for managing the landfill of the CMC, which occupies a total area of twenty-two acres. Out of this, two acres are dedicated to wet waste and another two to dry waste for landfill purposes. According to Mr. Umesh, the landfill receives approximately 10 MT of waste (both wet and dry) on a daily basis. However, he also noted that the amount of waste being sent to the landfill has decreased since SAAHAS intervened. Mr. Umesh believes that the segregation of dry waste will further improve once the material recovery facility (MRF) is up and running.
>
> **-Mr. Umesh (Landfill Manager)**

Chart 30: Is the landfill properly maintained?

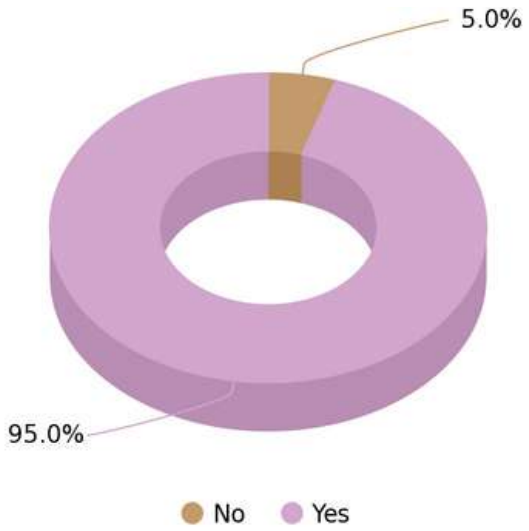


The pie chart illustrates that 88% of the respondents reported that the landfill is properly maintained, while 13% of the respondents expressed that the landfill is not properly maintained.

Field visit - Household and Udupi City

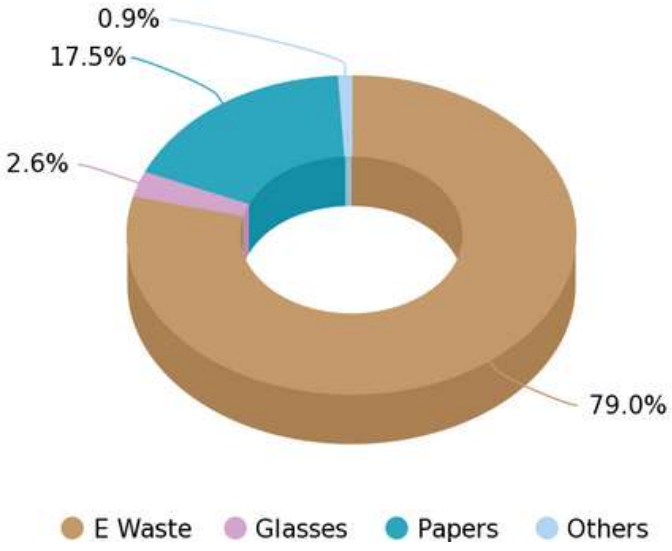
Recyclable waste

Chart 31: Awareness of the recycling process of the waste?



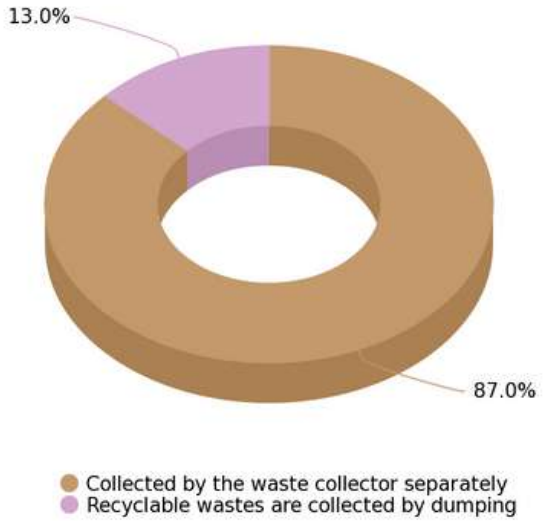
The pie chart reveals that 95% of the respondents reported being aware of the recycling process for the waste collected from the locality, while 5% of the respondents are unaware of the recycling process.

Chart 32: Wastes used for recycling?



From the Pie chart, it can be observed that 79% of the respondents reported that e-wastes are used for recycling, followed by 17.5% who mentioned paper as the main material recycled. Additionally, 2.6% of the respondents mentioned glasses as recyclable materials, while 0.9% indicated other unspecified materials used for recycling.

Chart 33: Collection of recyclable wastes?

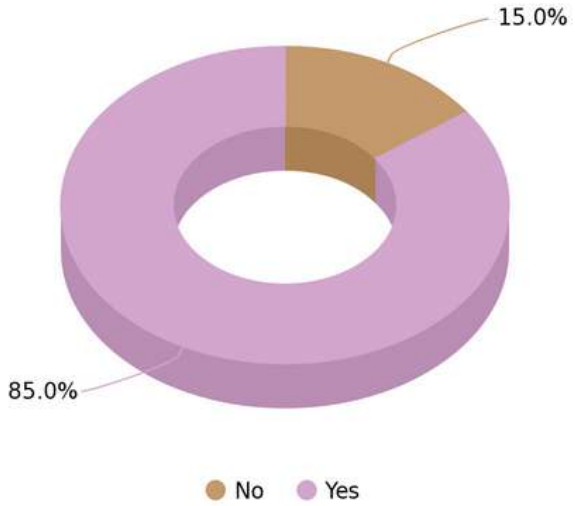


The pie chart indicates that 87% of the respondents reported that recyclable wastes are collected by the waste collector separately. On the other hand, 13% of the respondents reported that recyclable wastes are collected by dumping them in the drop box installed in the locality.

SHG Sheds at Udupi

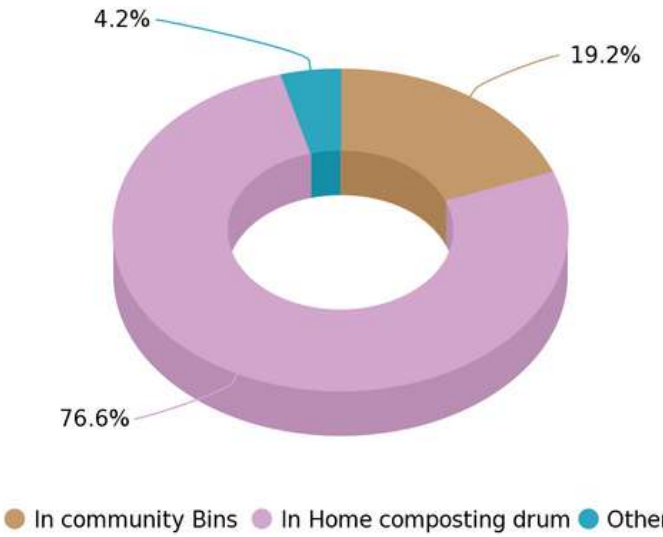
Home Composting

Chart 34: Have you attended any awareness programs on composting?



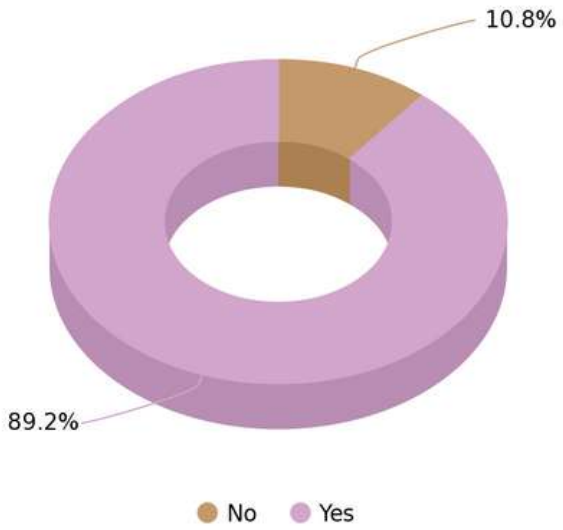
The study reveals that 85% of the respondents have attended awareness programs on composting, indicating a significant level of participation in educational initiatives. However, 15% of the respondents reported that they have not attended any awareness program on composting, suggesting a potential opportunity for further outreach and education in this area.

Chart 35: Place of dumping waste for composting?



From the graph, it can be observed that the majority of respondents, 76.6 %, reported dumping waste for composting in home composting drums. This indicates a prevalent practice of composting at the household level. Additionally, 19.2% of respondents reported using community bins for composting, while a small percentage (4.2%) opted for other methods of waste dumping for composting.

Chart 36: Awareness on benefits of composting?



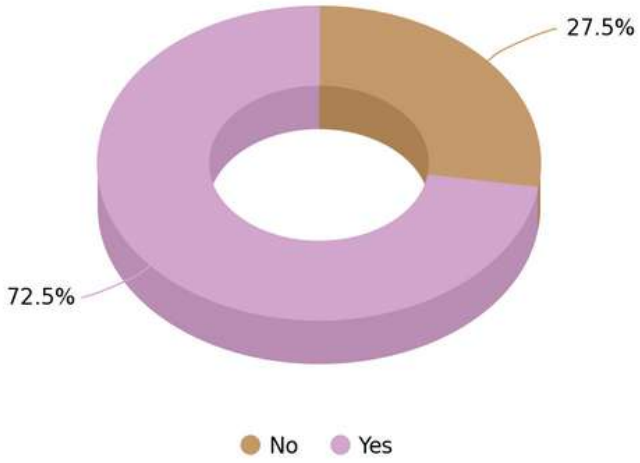
The pie chart indicates that a significant majority of respondents, 89.2%, reported being aware of the benefits of composting. This suggests a good level of knowledge and understanding among the respondents regarding the advantages associated with composting. On the other hand, 10.8 % of the respondents reported being unaware of these benefits, indicating a smaller portion of the sample lacked knowledge in this area.

Mrs. Chanda noted that there has been a 45% increase in income after SAAHAS intervened, which has enabled her to provide employment opportunities. She further reported that all the sheds under her supervision are functioning.

-Mrs. Chanda (Head), Shed Incharge

Waste-related diseases/Vector Borne

Chart 37: Do you think the diseases are related to improper waste management?

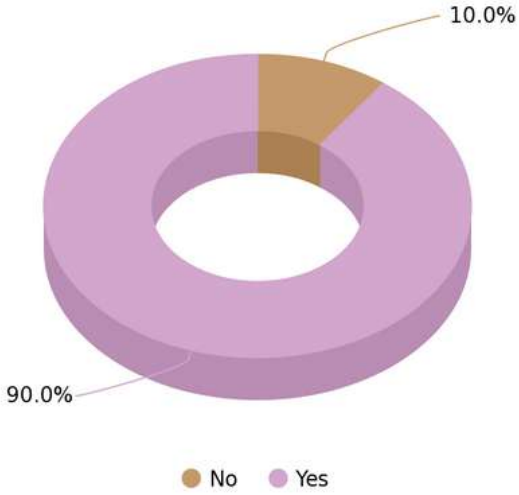


From the pie chart, it is evident that a majority of respondents, 72.5 %, believe that diseases are linked to improper waste management. This suggests a strong perception among the respondents that there is a connection between inadequate waste management practices and the spread of diseases. On the other hand, 27.5% of the respondents do not associate diseases with improper waste management, indicating a smaller portion of the sample holds a different viewpoint or lacks awareness about this relationship.

SHG Sheds at Udupi

Environmental Impact

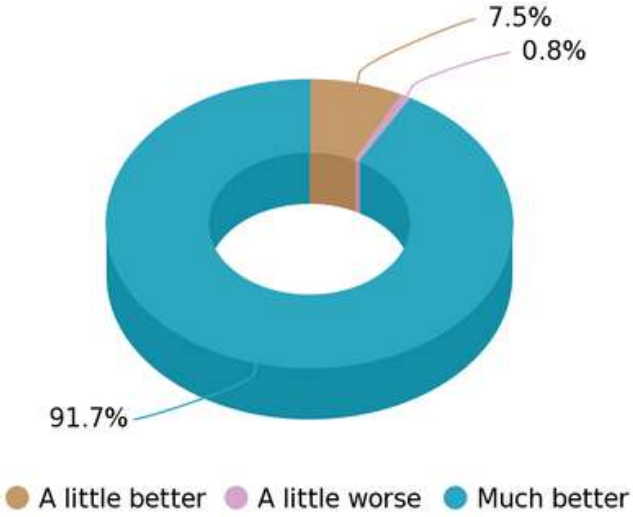
Chart 38: Knowhow on the environmental impact of solid waste management?



The graph reveals that a significant majority of respondents, 90%, claim to be aware of the environmental impact of solid waste management. This indicates a high level of knowledge and understanding among the participants regarding the effects of waste management practices on the environment. However, it is worth noting that 10% of the respondents reported not having knowledge about the environmental impact of solid waste management, suggesting a smaller subset of individuals who may require further information or education on this topic.

Field visit - Household and Udupi City

Chart 39: Rating on the condition 4 years ago, before the SAAHAS intervention?



The pie chart indicates that a large majority of respondents, 91.7%, believe that the condition of their locality has significantly improved after the intervention. This suggests that the waste collection and environmental measures implemented have had a positive impact on the overall condition of the area. Only a small percentage of respondents, 7.5%, reported a slight improvement, while an even smaller proportion, 0.8%, felt that the condition had slightly worsened compared to four years ago. This indicates that the intervention has generally been effective in improving the waste collection and environmental situation in the locality, with minimal negative feedback.

Field visit - Household and Udupi City

CHAPTER 4: OECD FRAMEWORK

RELEVANCE

RATING ● ● ● ● ●

The Solid Waste Management plan implemented in all wards of Udupi City is highly relevant as it raises awareness, and promotes home composting, waste segregation, and recycling. The program's collaboration with the municipality establishes an efficient waste management system, while the establishment of waste processing sheds and involvement of women SHGs contribute to environmental sustainability and economic empowerment. Overall, the program helps in creating a cleaner and healthier environment by reducing waste, conserving resources, and generating livelihood opportunities.

COHERENCE

RATING ● ● ● ● ●

The Solid Waste Management program is highly coherent as it aligns seamlessly with several Sustainable Development Goals (SDGs).
SDG 3: Aim to promote good health and well-being for all.
SDG 6: Aims to ensure clean water and sanitation for all.
SDG 11: Make cities inclusive, safe, resilient, and sustainable.
SDG 12: sustainable consumption and production patterns.
SDG 13: aims to mitigate climate change
SDG 15: aims to protect life on land
SDG 17: partnerships for the goals

The program's coherence extends to its support of several national policies, programs, and legislations.

The National Environment Policy, of 2006 emphasizes the relevance of disposal of waste along with recycling and treating waste.

Swachch Bharat Mission aims to accelerate the efforts to achieve universal sanitation coverage and to put the focus on sanitation.

The Plastic Waste (Management and Handling) Rules, 2011 is a regulatory framework set up to control the use, manufacture, and recycling of plastic waste.

The E-Waste (Management and Handling) Rules, 2011 that primarily aims to put in place a system that manages e-waste in an environment-friendly way by regulating the issue of recycling and disposal of e-waste.

EFFECTIVENESS

RATING ● ● ● ● ○

The program has proven highly effective in achieving its primary objectives of addressing the inadequacy of solid waste management facilities in Udupi and promoting awareness about waste segregation and proper disposal practices. As a result, there has been a notable reduction in waste generation, improved waste management practices, increased community participation, and positive environmental and social impacts. It is worth mentioning that the program's success has led to its integration into the municipality's operations, ensuring its continuity in meeting its objectives.

Index : 5 Points - Very High ; 4 Points - High ; 3 Points - Moderate ; 2 Points - Low ; 1 Point - Very Low

EFFICIENCY

RATING

The efficiency of the program stems from its streamlined design, which prioritized community awareness and participation, the establishment of waste segregation centers and recycling units, and the optimization of waste collection processes. By focusing on these key elements, the program effectively utilized available human and material resources in a cost-effective and timely manner. Furthermore, the involvement of women's self-help groups (SHGs) in activities such as packaging and sale of processed waste added an additional layer of efficiency by harnessing local expertise and promoting economic empowerment within the community.

IMPACT

RATING

The solid waste management program in Udupi City has had immediate impacts, including increased cleanliness, reduced health risks, and improved waste segregation and disposal practices. In the long term, it has brought about behavioral change, established effective systems for waste processing, created employment opportunities, and led to positive environmental outcomes. It serves as a model for other communities to follow.

SUSTAINABILITY

RATING

The program's sustainability lies in its successful use of behavior change communication and sustainable practices to drive lasting changes in waste management. Deep community engagement has fostered awareness and responsibility, while collaboration with and adoption by the local government ensure long-term viability.

However, to enhance its sustainability further, the program should prioritize two key areas: strengthening partnerships and fostering community ownership. By expanding collaborations with diverse stakeholders, such as local businesses, NGOs, and educational institutions, the program can increase its reach and access to additional resources. Additionally, empowering the community through active involvement, decision-making participation, and ownership will create a strong foundation for long-term sustainability.

Index: 5 Points - Very High ; 4 Points - High ; 3 Points - Moderate ; 2 Points - Low ; 1 Point - Very Low

CHAPTER 5: RECOMMENDATIONS

Support research and innovation in waste management technologies and practices. Encourage the development of sustainable solutions such as waste-to-energy projects, advanced recycling technologies, and innovative waste reduction methods.

The project should provide incentives for behaviour change, such as rewards for households that adopt proper waste management practices. These incentives can motivate community members to adopt new behaviours and sustain them over time.

At City Municipal Corporation Office with senior Environment Executive and NGO officials Mr. Sudesh Kini & Ms. Shruthi.

Conditions of the Sheds




Material Recovery Facility (CMC Udipi)



Discussion with Beneficiary

Discussion at Household levelel (Kadigalli, Kalmadi, Ambalpadi, Kodauooru, Vadobanedshwara, Malpe