CSR Impact Assessment Report

Clean Drinking Water, WASH & Water Conservation in Amravati, Akola, Wasim Districts of Maharashtra

Prepared For

HDB FINANCIAL SERVICES
REIMAGINING OPPORTUNITIES

Prepared By

SoulAce
Path to Sustainability

SOULACE CONSULTING PVT LTD

ISO 27001:2013 Certified

DELHI NCR | MUMBAI | KOLKATA

Website: www.soulace.in; Email: enquiry@soulace.in

CONTENT

ABBREVIATIONS

WASH	Water, Sanitation, and Hygiene
CSR	Corporate Social Responsibility
RO	Reverse Osmosis
SDG	Sustainable Development Goals
YRA	Yuva Rural Association
HIV/ AIDS	Human immunodeficiency virus infection and acquired immune deficiency syndrome
NGO	Non-Governmental Organization
OBC	Other Backward Class
SC	Scheduled Caste
ST	Scheduled Tribe
GEN	General
Water ATM	Anytime Water Machine
UTI	Urinary Tract Infection
FGD	Focus Group Discussion
TDS	Total Dissolved Solids
GP	Gram Panchayat
ASHA	Accredited Social Health Activist
HB	Haemoglobin
HM	Headmaster

LIST OF CHARTS

EXECUTIVE SUMMARY

Background

Project activities

- Hygiene Training:
- Village Awareness Programs
- Child Parliament
- Kitchen Garden in School
- Health Camp
- Construction of School Sanitation facilities
- Installation of RO Water Plants

Project year
Phase 1: September 2017 to August 2018 & Phase 4: Feb 28th, 2022- March 14th, 2022

Beneficiaries
6.8K+ Beneficiary

NGO Partner
Yuva Rural Association (YRA)

Project Location
Amravati, Akola, Wasim Districts of Maharashtra

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.

Geography Covered (States)
Amravati, Akola, Wasim Districts of Maharashtra

Direct Beneficiaries Covered
6.8K+ Beneficiary

Application of Qualitative Techniques

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

Sample Technique
Purposive and Stratified Random Sampling

Stakeholders
Villagers, students, Village heads, NGO partner, Local NGO leader

Clean Drinking Water by Installing an RO plant and Water ATM

71.5%

of respondents reported participating in the planning process or meeting before the RO installation, indicating high community involvement and input.

28.5%

of respondents did not participate in the planning process, potentially missing out on the opportunity to provide input and feedback.

Community involvement ensured that the project was tailored to their specific needs and requirements.

Benefits of RO Plant

98.5%

of respondents reported the availability of safe and clean drinking water and a reduction in waterborne diseases in their community.

93.5%

of respondents reported a decrease in healthcare expenses due to improved health outcomes.

95.5%

of respondents reported time-saving benefits from the availability of safe drinking water.

76%

of respondents reported a sense of security regarding the steady and regular supply of potable water through RO.

The installation of the RO plant positively impacted gender equality and women's empowerment.

Women in households are able to take sufficient rest, resulting in increased productivity.

41.4%

Female Households involved in income-generating work

24%

of respondents still do not have a sense of security regarding the regular supply of water.

The installation of the RO plant indirectly contributes to increasing the productivity of women in the community.

96.5%

of respondents reported a significant reduction in water-related illnesses among their children due to safe drinking water.

97.5%

of respondents find the RO plant very useful, indicating its effectiveness in meeting the community's need for safe drinking water.

Access to safe drinking water stimulates economic development by reducing healthcare costs, improving productivity, and encouraging investment.

90.5%

of respondents are very satisfied with the installation of the RO plant, indicating that it has met the expectations and needs of the community.

77%

of respondents are not paying any cost for getting safe drinking water after the installation of the RO plant.

88%

of respondents have stopped purchasing packaged water after the installation of the RO plant.

Significant decrease in the number of beneficiaries paying for safe drinking water, and those who still pay are paying significantly less.

Installation of the RO plant has led to a reduction in medical expenses for the respondents.

A reduced percentage of respondents spent more on medical care and an increased percentage spent less.

Absence of family members from work due to water-related illness significantly reduced after the installation of the RO plant.

Kitchen Garden

94%

of respondents reported saving money on regular vegetables and pulses by using produce from their kitchen gardens.

Respondents sowed a variety of plants in their kitchen gardens, with 76% sowing 5 to 10 varieties.

Growing a diverse range of plants provides nutritional benefits, biodiversity, and a sustainable ecosystem.

Regularly adding kitchen garden vegetables to diets benefits children and anemic family members by improving nutrition and reducing chemical exposure.

Using kitchen garden produce leads to health improvements, including increased nutrient intake and better mental health.

WASH

98.2%

of student respondents use the new sanitation blocks, contributing to improved hygiene, comfort, attendance, and academic performance.

93%

of students reported water availability in each toilet block, crucial for hygiene and a healthy learning environment.

Almost all students (99.1%) reported regular availability of soap in school toilets, with some also having access to mugs and buckets.

Hygiene workshops led to positive habit development, with 95.6% developing handwashing and cleanliness habits and 86% adopting proper toilet usage.

Improved sanitation blocks resulted in a cleaner environment, reduced foul smell (91.2% of respondents), increased female attendance (73.7%), and decreased waiting times (50.9%).

Hygiene workshops led to positive habit development, with 95.6% developing handwashing and cleanliness habits and 86% adopting proper toilet usage.

The WASH program received high satisfaction from students (97.4%), indicating its effectiveness in meeting their needs.

CHAPTER 1: INTRODUCTION

Considering the geographical location of the Vidarbha region, YRA realized that there are other issues related to health, personal hygiene, and sanitation. As a result, YRA decided to focus on some of the villages from the taluk of Karanja-lad as a pilot and designed a project for 5 villages. This project was focusing on Water, Sanitation & Hygiene, and HDB financial services supported it. YRA under this initiative, supported government schools to have proper sanitation facilities for the children, as they can become the catalyst in bringing change in the community. Along with that YRA set up community water treatment plants for the villagers to have access to safe drinking water.

Considering the importance of Water, Sanitation, and Hygiene (WASH) in Maharashtra, HDB Financial Services has partnered with the Yuva Rural Association (YRA) and conducted a study in 5 Gram Panchayats (village-level self-governing bodies). The study findings differed significantly from the statistics provided by the government, suggesting a disparity between official data and the ground reality in terms of WASH conditions in the region. The HDB Financial Services WASH Project is a development initiative focused on improving access to water, sanitation, and hygiene (WASH) facilities in rural communities in India. It focuses on the installation of Reverse Osmosis (RO) water purification systems and improvement of Water, Sanitation, and Hygiene (WASH) facilities, and the establishment of Kitchen gardens in rural and underprivileged communities of Maharashtra.

The data was collected by both qualitative and quantitative studies. The stakeholders(Village head, Yuva Rural Association (YRA) NGO partner, and Local NGO leader) were met individually and in-depth interviews were conducted to know the impact of this project in their schools and their satisfaction with this project. Data collectors were appointed to collect data from the local community people via the SoulAce app.

About YUVA Rural Association

Yuva Rural Association (YRA) is a non-profit organization based in Nagpur, India, established in 2002. The organization is registered under the M.P. Society Registration Act 1973 from Bhopal, Madhya Pradesh. YRA has been working towards strategic interventions related to livelihoods, natural resource management, gender, social discrimination, governance, and human rights in the states of Madhya Pradesh, Gujarat, and Maharashtra. Since 2010, YRA has been focusing only on Maharashtra, especially in the Vidarbha region, with project offices in five districts and a dedicated team of 26 members and thousands of volunteers. YRA has been working towards the development of rural areas by creating livelihood opportunities, protecting vulnerable groups from violence and social discrimination, and making government schemes available to people through policy advocacy and lobbying. The organization focuses on small and marginal farmers, landless laborers, Dalits, tribals, women, children, youth, people with disabilities, and people living with HIV/AIDS.

The work of YRA in the Amravati, Akola, and Washim district of Maharashtra, which are the main focus of HDB Financial Services. The main activities in this project are Water, Sanitation & Hygiene. year. YRA under this initiative, supported government schools to have proper sanitation facilities for the children, as they can become the catalyst in bringing change in the community. Along with that YRA set up community water purification plants for the villagers to have access to safe drinking water

SoulAce team member with YRA team in their office

CHAPTER 2: RESEARCH METHODOLOGY

Research can be defined as a logical and systematic search for new and useful information on a particular subject matter. Social science research refers to the systematic activity of gaining new knowledge by following scientific principles and methods in order to minimize bias and subjectivity, as opposed to writing something based on assumptions or speculations. Though information about certain facts can also be gained through common sense and based on general observations and hearsay, those facts won't be considered valid until they have been obtained in a methodical manner that can stand the test of time. The defining characteristics of scientific research are objectivity, ethical neutrality, reliability, testability, and transparency.

Identification of the research problem provides the starting point of research, which is then defined and redefined through a proper review of the literature on the problem or deliberations with research guides and other subject experts in the area. Each research problem has a multitude of perspectives and dimensions. Research cannot go on covering all these in one study. Thus, we need to delimit the research problem into a measurable problem and formulate objectives, make decisions on the research design, sample design, type of research instruments for collecting the data and how these data can be edited, coded, classified, tabulated and interpreted so that findings and conclusions can be reached.

Every research needs to have a proper methodology so as to foresee problems that could arise in the course of research and also to steer through the research process in the proper direction without losing focus.

Use of Mixed Methodology for Maximum Insights

The research problem consisted of understanding the extent of the impact created by HDBFS-supported initiatives in improving the health condition of agrarian communities through sustainable use of water resources and the adoption of hygienic practices. It aims to conduct an Impact Assessment of this project, supported by HDB Financial Services Ltd. and implemented by the YUVA Rural across three districts across three districts of Maharashtra. To gain maximal insights, both quantitative and qualitative techniques were used.

Application of Quantitative Techniques

A quantitative study will be required if the focus is on presenting the study problem in terms of numbers, frequencies, percentages, etc. A quantitative study always uses structured tools like questionnaires and interview schedules, in which questions are planned well ahead by the researcher before entering the field. Though the information that is obtained is easily amenable to various statistical measures and tests, quantitative information has its own limitations. It can uncover only the surface phenomenon. It is unable to penetrate beneath the surface and identify what is hidden deep beneath.

In this study for assessing the impact, the structured tool of the Interview Schedule was used.

Application of Qualitative Techniques

It is only qualitative research that can reveal the rich and hidden information that may not be evident on the face of it. The qualitative approach is distinguished by deeper probing and flexibility, and it can yield massive amounts of data that were not anticipated when the research was initiated. Quantitative techniques were used for better accuracy, to ensure anonymity and to cover a large sample population. Qualitative techniques of interviews with key stakeholders and interviews with community people were adopted for a better understanding of the problem alongside quantitative research.

Ensuring Triangulation

Triangulation is required to increase the credibility and validity of the research findings. It is also a measure taken to ensure the trustworthiness of the research process. The findings of the quantitative research have been verified with the insights from qualitative research, and the report has also been structured to reflect these points.

Research Design

- Name of the project : Clean Drinking Water, WASH & Water Conservation in Amravati, Akola, Wasim Districts of Maharashtra
- Implementation Agency : Yuva Rural Association
- Research Design : Descriptive Design
- Sampling Technique : Stratified random & purposive sampling
- Sample Size : 500 Beneficiaries
- Qualitative Methods Used : Focused Group Discussions, Testimonials, and Case Studies

Key Stakeholders

Stakeholders

- Local Community
- Gram Panchayat Members
- Teachers /Teachers, principals, and SMC Members
- NGOs
- Students

Ensuring Commitment to Research Ethics

Anonymity

Anonymity refers to not revealing the identity of the respondents. This research study strictly sticks to not revealing the identity of respondents unless the same is warranted for illustration of success stories or case studies. After the research is completed, the research should not reveal which individual respondents answered which question in what manner. The results will be revealed only as an aggregate, so one will not be able to single out the identity of a particular respondent. This is required to not break the trust of the respondent by revealing the individual's identity.

Confidentiality

Research subjects participate in the process only on the basis of the trust that confidentiality will be maintained. Hence, the research will not reveal any data regarding the respondents for purposes other than the research study.

Non-Maleficence

Research should not lead to harm to the research subjects. This study ensures that the respondents are not harmed in any way.

Beneficence

Any research study should lead to some benefits for the respondent. This research study ensures that individuals, groups, and communities are benefited and that their well-being is enhanced.

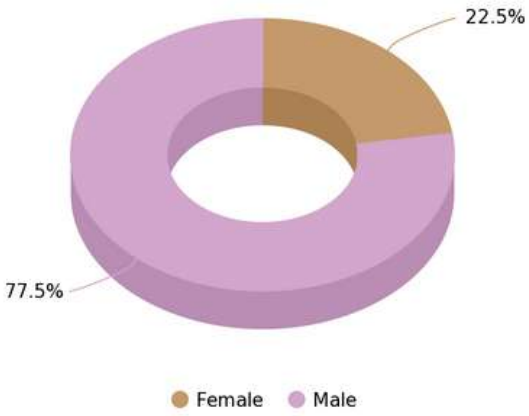
Justice

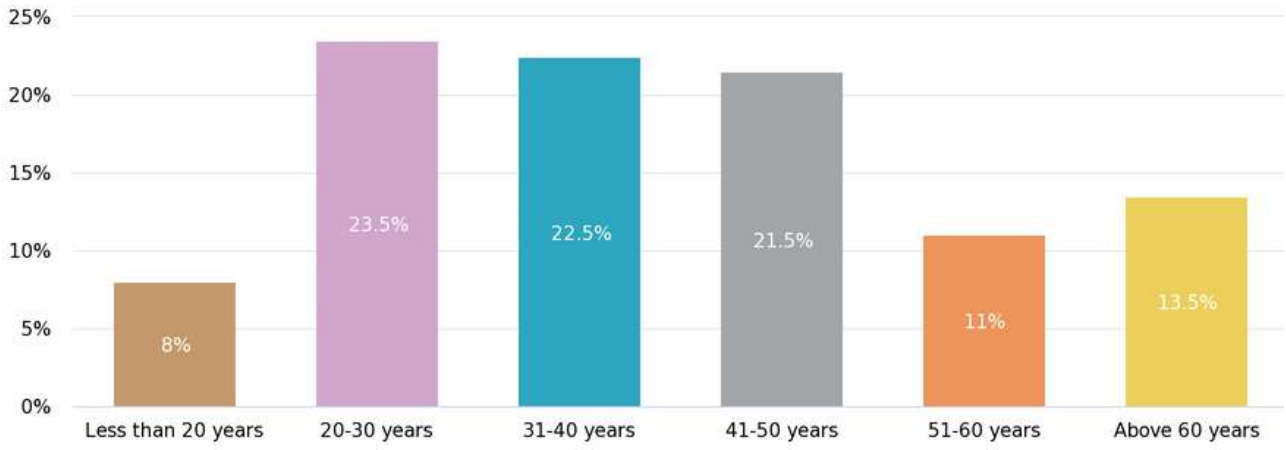
Justice refers to being fair to all. This research study ensures equal treatment of all i ts research subjects and no biases or prejudices towards any group based on social stereotypes or stigma associated with being a member of a certain group or class.

CHAPTER 3: MAJOR FINDINGS

Clean Drinking Water by Installing RO plant and Water ATM

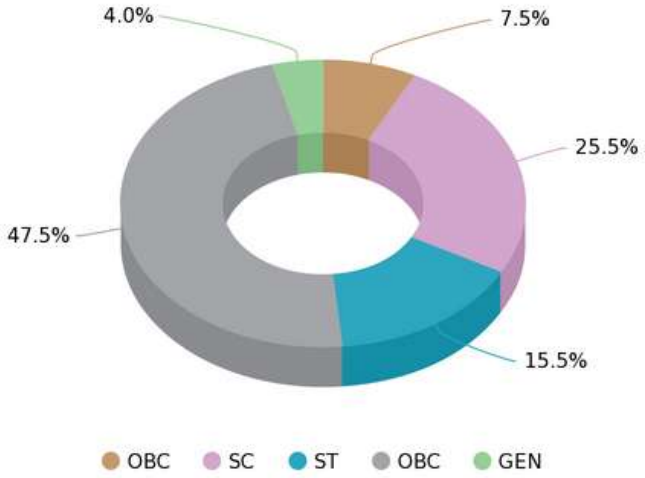
Chart 1: Gender and Age Distribution of the Respondents





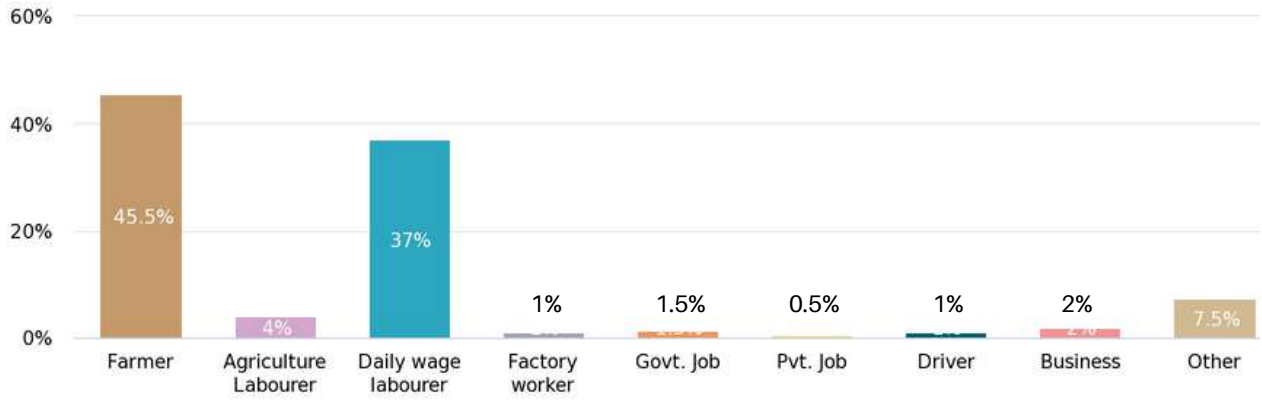
The charts indicate that the respondents in the RO plant installation are predominantly male, i.e. 77.5%, while there is only 22.5% of females in the project. Additionally, the respondents belong to a wide range of age groups, with the majority falling within the age range of 21-50 years, comprising 67.5% of the respondents. Within this range, the age group of 20-30 years has the highest percentage of respondents (23.5%), followed by those in the age group 31-40 years (22.5%). However, it is important to note that these results are specific to the sample surveyed and may not be representative of the larger population.

Chart 2: Community-wise distribution of respondents



From the chart, it can be seen that the majority of the respondents, i.e. 47.5%, belong to the OBC community, followed by 25.5 % composed of Scheduled Castes and 15.5% of the respondents composed of Scheduled Tribes. This information is important as it provides insights into the social and economic status of the surveyed population.

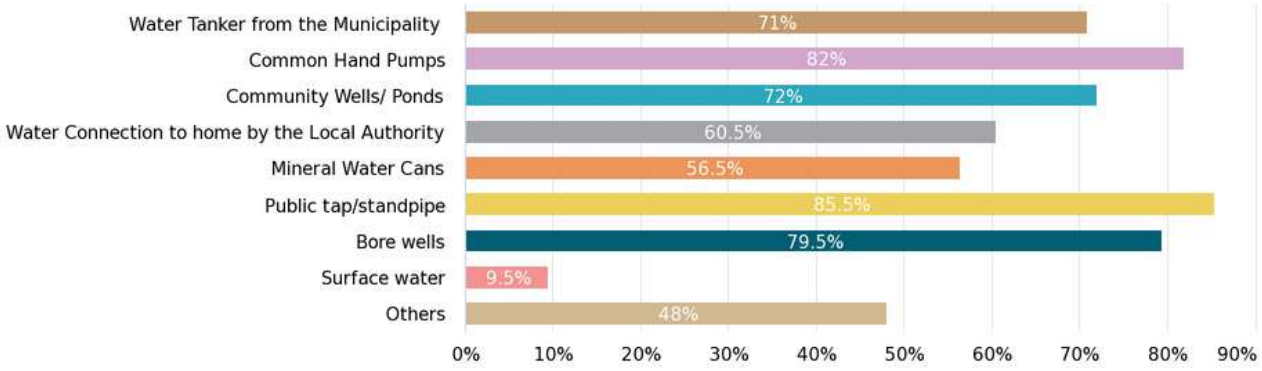
Chart 3: Primary source of income of the respondents



It can be observed that the majority of the respondents, i.e. 45.5%, responded that agriculture was their main source of occupation. This is followed by 37% of the respondents whose primary source of income comes from daily wage labour. It can be inferred from the data that a significant proportion of the respondents depend on agriculture and daily wage labour as their primary sources of income. These occupations are often associated with low-income groups and unstable employment conditions.

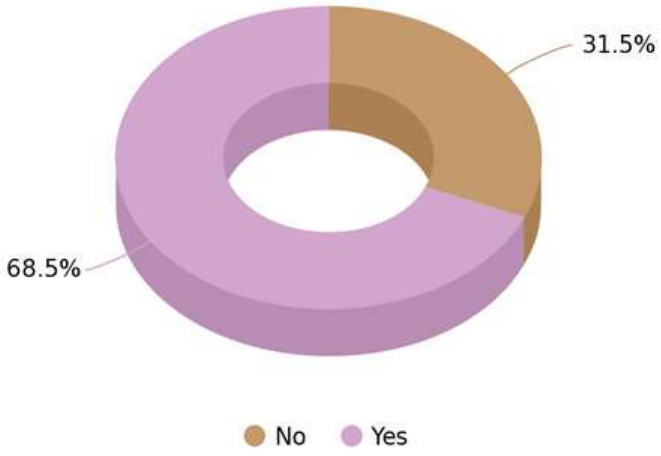
Previous status of the sources and condition of drinking water in the community

Chart 4: Source of Drinking water before RO Plant



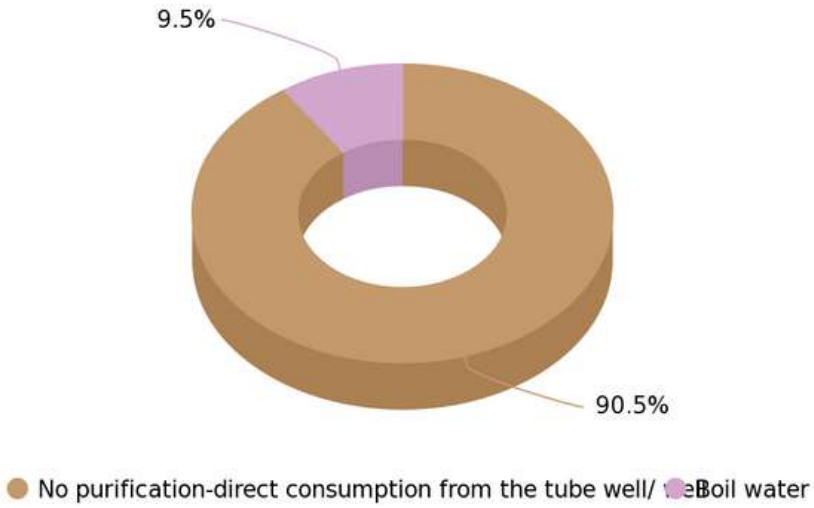
It can be observed from the graph that 85.5 % of the respondents use public tap/standpipe as a source of potable drinking water, followed by Common hand pumps(82%), Bore wells(79.5%), Community wells/ponds(72%), water tank from the municipality(71%), Water connection to home by the local body(60.5%) and mineral water cans (56.5%).

Chart 5: Possession of water purifier at home before this intervention



The pie chart indicates that 68.5 % of the respondents have a water purifier in their homes, while the remaining 31.5% do not. The high proportion of respondents with a water purifier suggests that there is growing awareness about the importance of clean, safe drinking water and a willingness to invest in technologies that can help to ensure water purity. However, the fact that around one-third of the respondents do not have a water purifier at home suggests that there may be a need to increase awareness about the benefits of water purification, particularly in underserved communities.

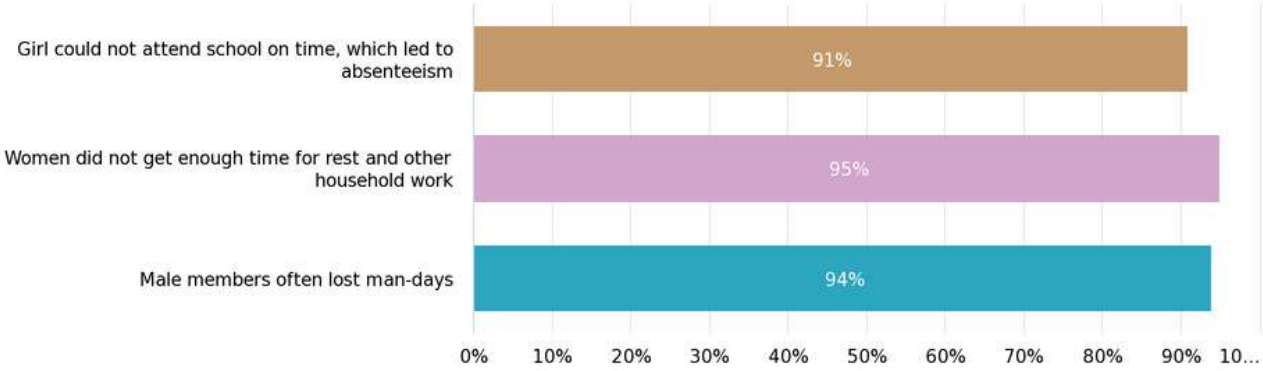
Chart 6: Percentage of respondents who reported the ways they purified water earlier, in the absence of a Water Purifier at home



The data presented highlights the low usage of water purification methods in households where water purifiers are not available. Specifically, the findings indicate that a large majority of respondents, i.e. 90.5 %, consume water directly from the tube wells or wells without any form of purification. This lack of water purification could have significant implications for public health, as consuming contaminated water can lead to a range of water-borne illnesses. The low usage of boiling as a water purification method, i.e. 9.5 %, suggests that there may be a need to increase awareness about the benefits of this method, as boiling water can be an effective way to kill harmful bacteria and viruses. Additionally, efforts to improve access to water purifiers in underserved communities could help to promote more widespread adoption of water purification practices.

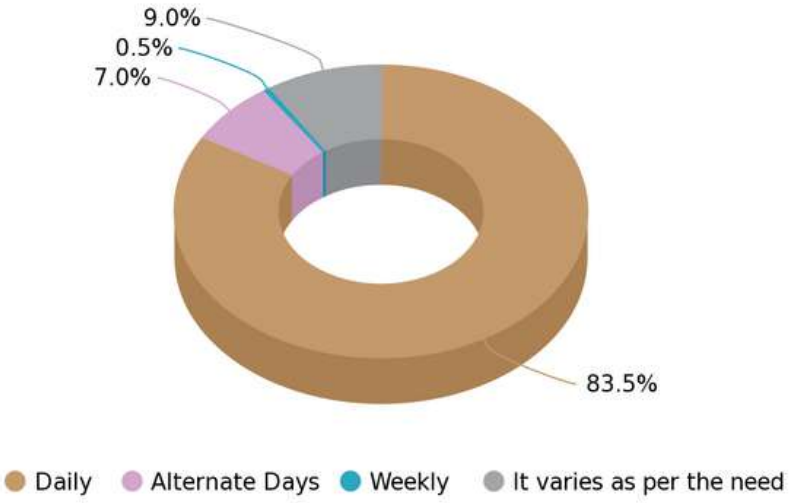
SoulAce team member with Village Water Committee of Nanded (Khurd)

Chart 7: Challenges faced due to consumption of long hours for fetching water



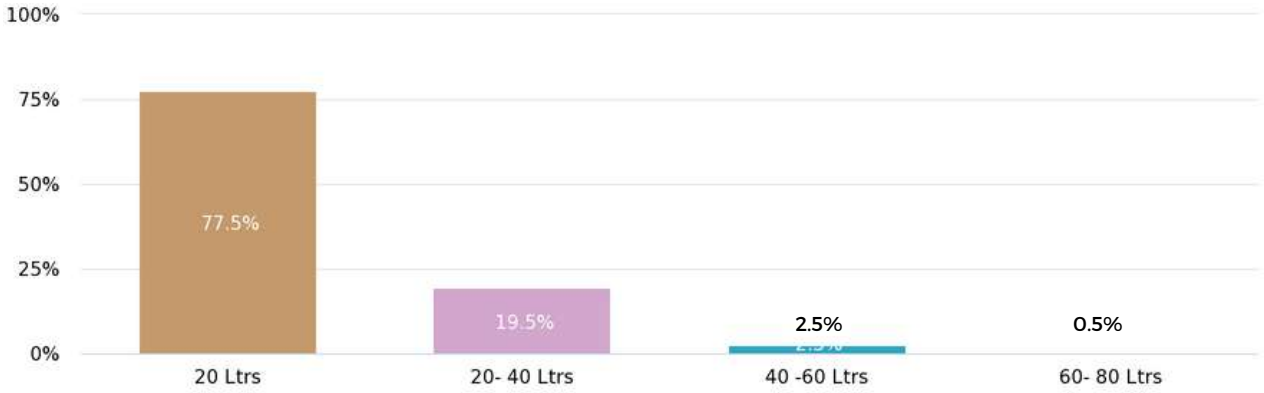
The data presented highlights some of the challenges faced by respondents related to access to safe drinking water. Specifically, the findings indicate that a large percentage of respondents, i.e. 95 %, reported challenges related to women not having enough time for rest and other household work, likely due to the time and effort required to access safe drinking water. Additionally, a significant percentage of respondents reported challenges related to losing man-days (94 %) and girls being unable to attend school on time and experiencing absenteeism (91 %), likely due to the time and effort required to access safe drinking water. These findings suggest that efforts to improve access to safe drinking water could have significant benefits for public health, social well-being, and economic development in the area.

Chart 8: Present usages of the RO plant



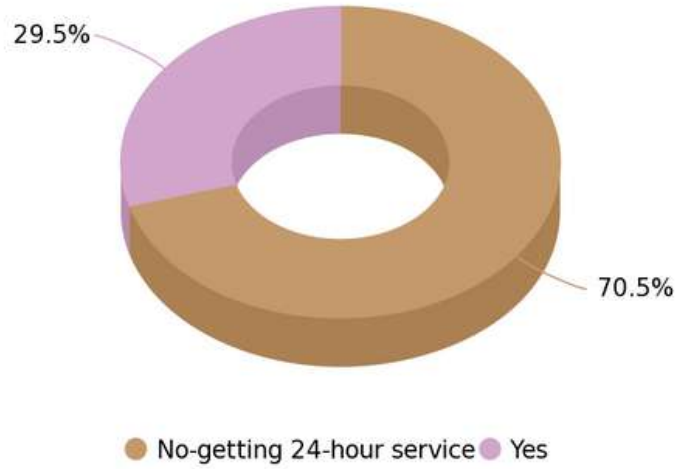
The pie chart indicates that the majority of respondents reported visiting the RO plant for their water usage on a daily basis. Specifically, 83.5% of respondents reported daily visits. A smaller percentage of respondents reported visiting the RO plant as per need (9%) or every alternate day (7%). These findings suggest that many individuals rely heavily on the RO plant for their daily water needs and may face challenges in accessing safe drinking water if the plant is not available or if there are disruptions in the services.

Chart 9: Usage of Water from RO



It can be observed that the majority of the respondents, i.e. 77.5% of the respondents received 20 litres of water every day, followed by 19.5 % of the respondents who received 20–40 litres of water. 2.5% of respondents received 40–60 liters of water, and only 0.5% of respondents received 60 – 80 litres of water. These findings suggest that the quantity of water available through water ATMs may be limited, particularly for those who require larger quantities of water for their daily needs.

Chart 10: Timings of Water ATM



The data presented in the graph indicates that a significant majority of respondents reported receiving water 24 hours from the water ATMs(70.5%). In contrast, 29.5% of respondents reported fixed timings for accessing water from the water ATMs. This suggests that water ATMs have been effective in addressing the drinking water needs of the people in the project communities most times of the day, necessary for providing a sense of water security to people.

School kitchen garden

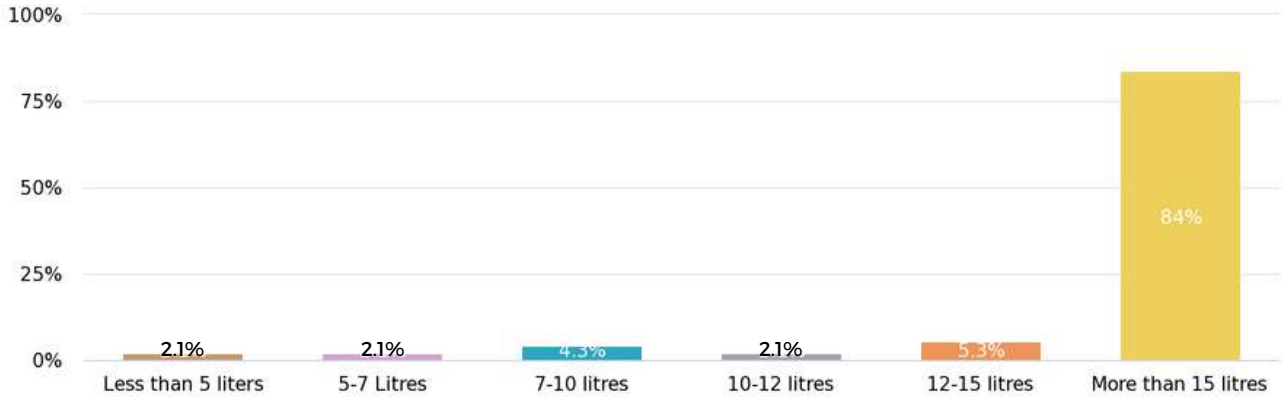
School kitchen garden In Z.P. School of Falegao Village

The maintenance of this kitchen garden is undertaken jointly by the teachers and students of the school. As an initiative taken by the school, the kitchen garden has been fenced and equipped with green nets to protect the plants from direct sunlight.

According to Sandip Thombe, an Assistant Teacher at Z.P. Primary School, Falegao, the school has received a kitchen garden kit from HDBF for their school. Utilizing this kit, a kitchen garden within the school premises has been established. Previously, procuring fresh vegetables for the daily midday meals was challenging in their village, and the variety of vegetables available was limited. However, with the kitchen garden, the school now has a ready supply of vegetables, enabling them to incorporate fresh and green products into the midday meals. This has greatly benefited the students by promoting a healthy diet.

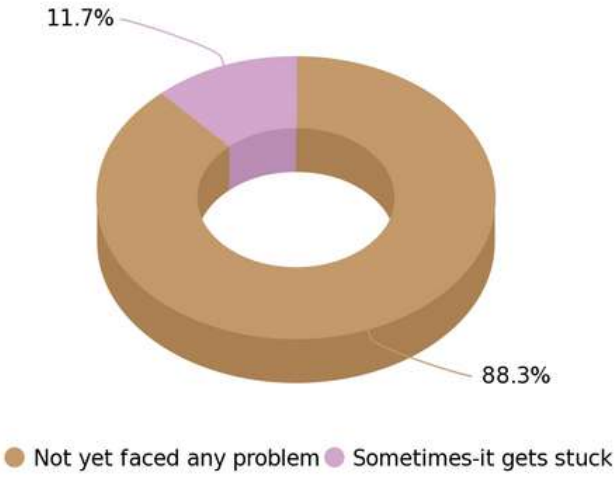
The maintenance of the kitchen garden is primarily carried out by the students, with support from the school staff in tasks such as installing nets and general upkeep. Additionally, the school premises also house an RO plant, and the wastewater generated by the plant is utilized for watering the trees and kitchen garden. This sustainable practice allows them to maintain the kitchen garden throughout the year. Sandip Thombe expresses gratitude towards HDBF and YRA for their valuable initiative in the school.

Chart 11: Quantity of water accessed by people having ATM cards



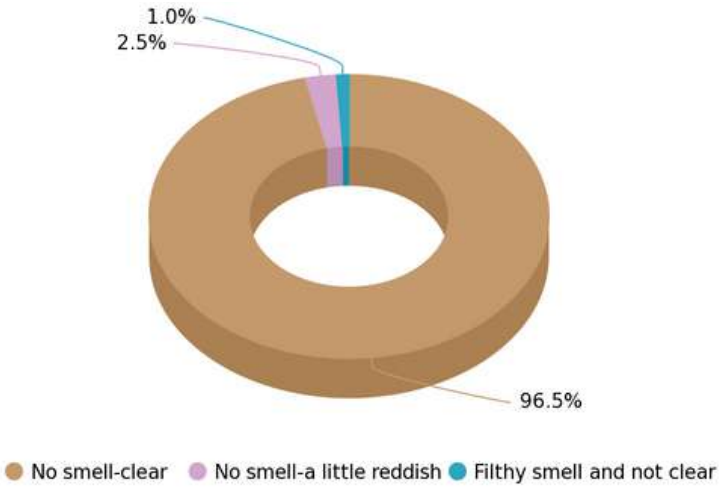
The chart shows that 84% of respondents who have an ATM card for water reported getting more than 15 liters of water, while 16% of respondents reported getting less than 15 litres of water. We can infer that ATM cards have helped in providing improved access to water, crucial for promoting public health and well-being..

Chart 12: Difficulties faced in accessing the card



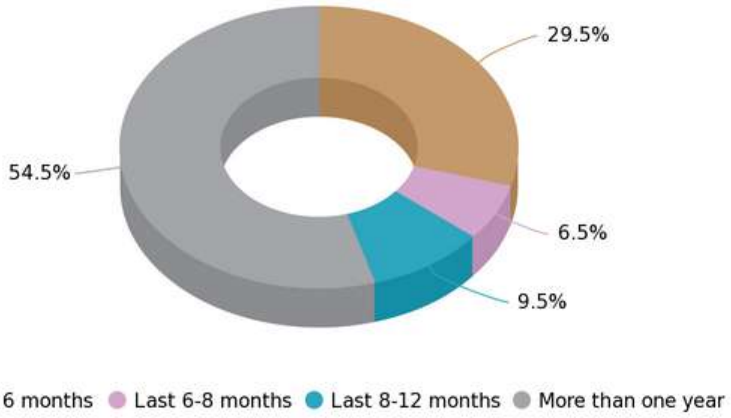
It can be observed that 88.3 % of the respondents who have ATM cars for RO have not yet faced any problems in accessing the card, and only 11.7% of the respondents faced difficulties in accessing the card. They responded that sometimes the card gets stuck and some times it is not read by the machine, These results indicate that the ATM card system for RO is generally reliable and functional, although there is still room for improvement to ensure a smoother user experience for all cardholders.

Chart 13: Quality of water



It can be observed from the graph that the majority of the respondents, i.e. 96.5%, reported that the water from RO is clear and has no smell. Only 3.5 % of the respondents reported some issues like little reddish water, filthy smell, and that it was not clear. Interactions with the beneficiaries in different project locations revealed that the quality of water is largely good, and there were generally happy about it. Hence it can be inferred that the water quality is good with occasional issues.

Chart 14: Duration of using RO water



It is observed from the graph that more than half of the respondents, i.e. 54.5%, have been using RO water for more than one year. 29.5 % of respondents have been using RO water for the last 6 months, and 9.5% of the respondents have been using RO water for the last 8 – 12 months. Therefore, it can be inferred that all of the respondents have been using RO water for more than six months and the RO plant is being used by most people for a considerable period of time.

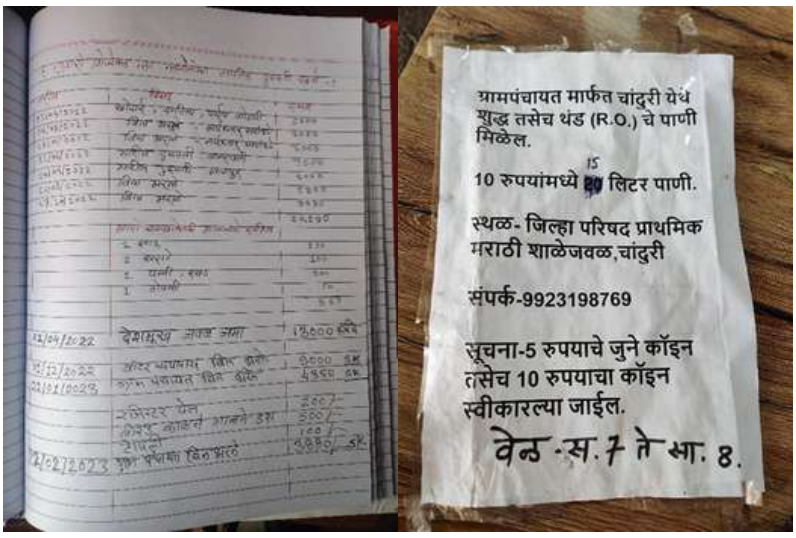
Source & Wastage water Management of the RO plant:

Sr.No.	RO Plant Village	Source	Waste Water
1	Chanduri (Amravati)	Borewell	Soakpit
2	Pimpri (Amravati)	Well	Finail Machine
3	Malkapur (Amravati)	Borewell	Disposing in closed well
4	Nanded (Kh) (Amravati)	Borewell	Soakpit
5	Kat-Amla (Amravati)	Borewell	Finail Machine
6	Nimbhora (Amravati)	Well	Soakpit
7	Falegao (Washim)	G.P. Water tank	Watering Plant
8	Bitoda Teli (Washim)	Well	Finail Machine
9	Ichori (Washim)	Well	Finail Machine
10	Kupati (Washim)	Borewell	Soakpit
11	Hivra-Lahe (Washim)	Borewell	Soakpit and Reuse Wastage water for outer use
12	Dongargao (Washim)	Borewell	Soakpit
13	Pimpalgao (Washim)	Well	Soakpit

The study found the rainwater harvesting structure is in excellent condition, with all pipes intact and without any damage. The responsibility of cleaning the pipes lies with the building's authority, such as the school authority in the case of rainwater harvesting at a school, or with the operator in charge of maintaining and cleaning the RO system. Additionally, a soak-pit has been constructed to effectively dispose of the rainwater harvested from the system.

Maintenance & operational activities of the RO Plants' Water User Committee

The study reveals that the Water User Committee (WUC) has appointed an operator to oversee the operation and maintenance of the RO plant. The members of the WUC have undergone training to ensure they are well-equipped to handle the functioning and upkeep of the RO plant. This committee plays a vital role in ensuring smooth operations and effectively managing the revenue generated from the RO system. The funds obtained are utilized for the maintenance of the RO plant. Working in collaboration with the GP (local governing body), the WUC is responsible for determining prices, establishing rules and regulations, and catering to the needs of the villagers. The RO operator maintains detailed financial records and manages the servicing requirements. To enhance the reach of the RO system, the WUC also actively engages in creating awareness within its community.



Record of Servicing and Maintenance & Pamphlet for awareness

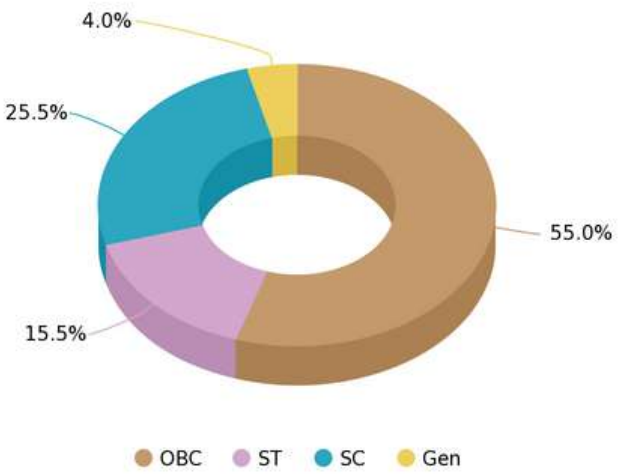
Do's and Don't at RO plant

Details of Handpump filtration units

In the surveyed villages, handpump filters have been installed on the main handpumps, which serve as the primary source of drinking water for the villagers. The installation of these filters is functional and in good working condition. The introduction of this innovative filtration method has made it possible to provide clean drinking water to the villagers at an affordable cost. The maintenance of the hand pump filters is the responsibility of the Gram Panchayat (GP). They ensure that the filters are replaced every 6 to 12 months, depending on the water test results. The GP of the village takes care of this task to ensure the continued functionality and effectiveness of the handpump filters.

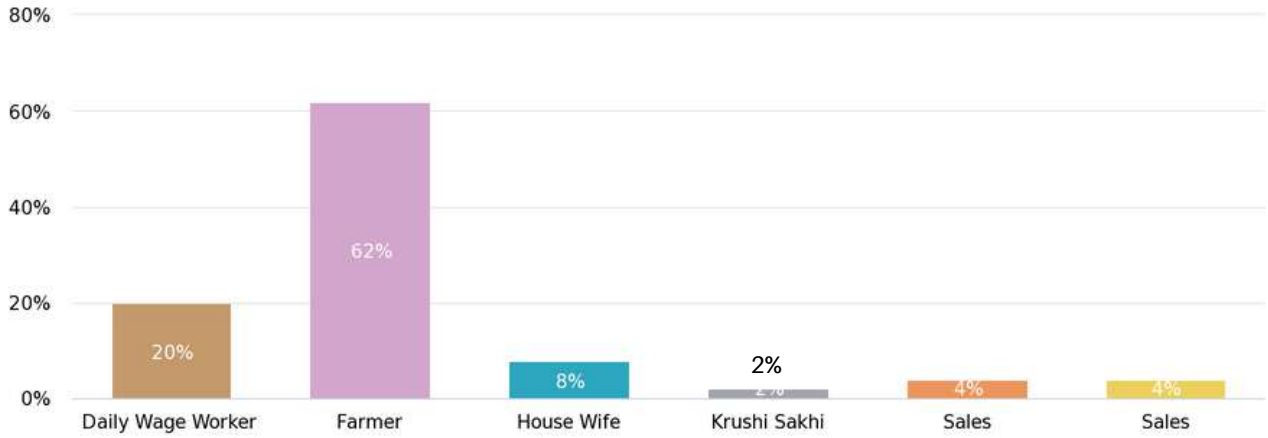
Kitchen Garden

Chart 15: Caste-wise distribution



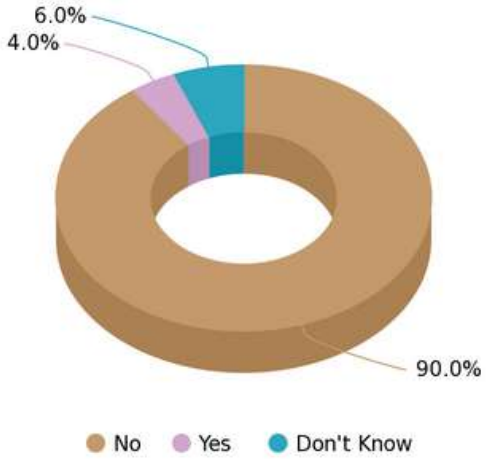
It can be observed from the pie chart that 55% of the respondents belong to the OBC community, 25.5 % belong to Scheduled Castes, 15.5% belong to Scheduled Tribes and 4% belong to the General category.

Chart 16: Primary Occupation



It can be observed from the chart that the majority of the respondents, i.e. 62%, are farmers. This is followed by 20% daily wage workers, 8 % housewives, 4% teachers and sales.

Chart 17: Family members suffering from Anaemia



It can be observed from the pie chart that 90% of the respondents reported that none of their adolescent or adult family members are suffering from anaemia. Only 4% of the respondents reported that their adolescent or adult family members were suffering from anaemia.

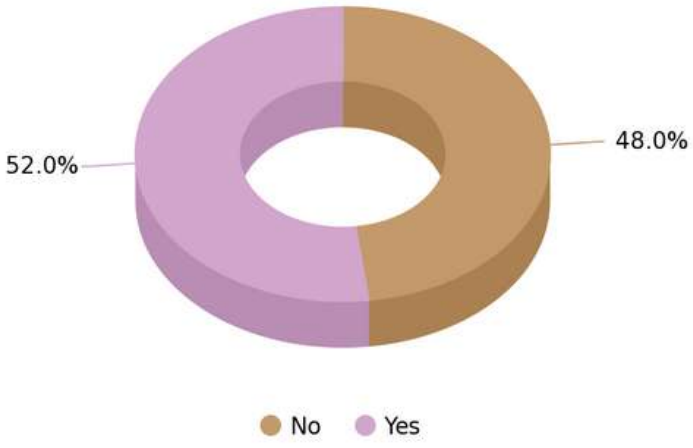
Mrs. Anita Khandate, Village Valad, Showing brinjals in her kitchen garden

Chart 18: Support received

It can be observed from the chart that through this project intervention, 84 % of the respondents have received seeds. They have received the seeds of tomato, potato, radish, brinjal, ginger, chilies, etc. 68 % of the respondents have received guidance, and 36% of respondents have received training.

Hence, most respondents have not only received seeds but also necessary Guidance and Training in Kitchen Gardening.

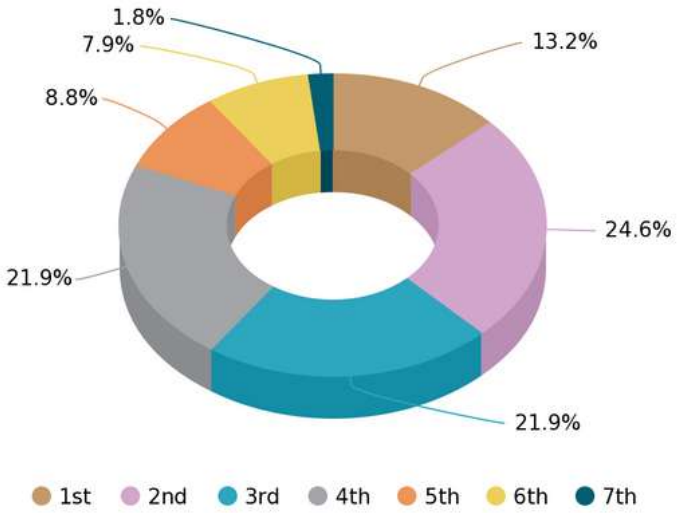
Chart 19: Hand-holding training to sow the seeds.



From the pie chart, it can be observed that 52%, i.e. the majority of the respondents, were provided with hand-holding training on how to sow seeds in a planned manner. This hand holding training helped them to learn the best practices for sowing seeds, such as selecting the right seed type and depth, spacing the seeds properly, and watering the seeds correctly. It is known fact that proper seeding can lead to good crop productivity.

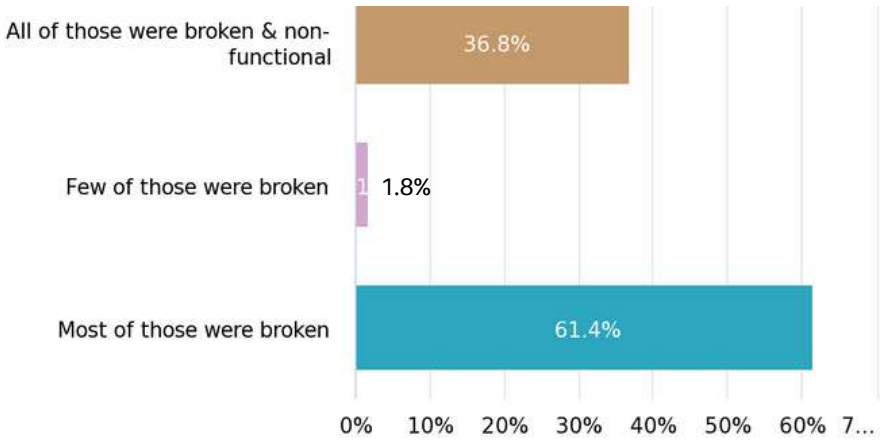
WASH Student

Chart 20: Distribution of students



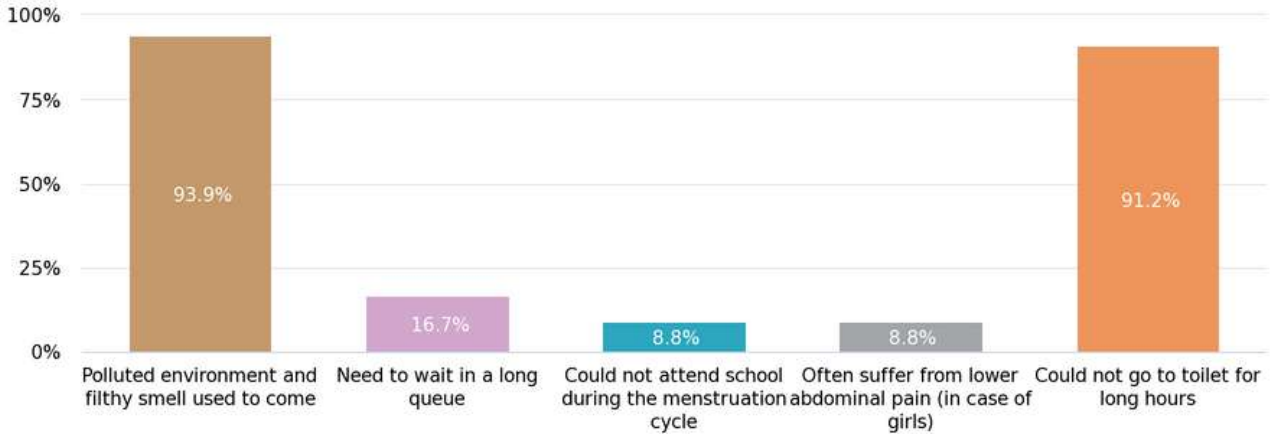
It can be observed from the chart that 24.6% of the respondents are from grade 2nd and 21.9% each from grade 3rd and grade 4th respectively . 13.2% of the respondents are from grade 1st, 8.8% from grade 5th, 7.9% from grade 6th and 1.8% from grade 7th. Hence, it can be observed that the majority of the respondents involved in this study are from primary school.

Chart 21: Condition of toilets in school before implementation of the project



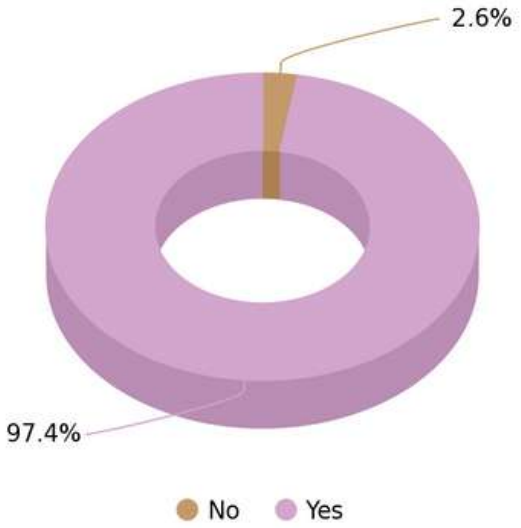
It can be observed from the chart that the majority of the respondents, i.e. 61.4%, reported that most of the toilets were broken before the execution of the project. 36.8% of the respondents reported that all the toilets were broken and non-functional. Only 1.8% of the respondents reported that only a few of the toilets were broken. Hence, we can infer from the above data that the majority of the toilets were broken and non-functional before the execution of this project.

Chart 22: Challenges face by the students earlier



The chart indicates that 93.9% and 91.2% of the students faced challenges of a polluted environment, filthy smell and not being able to go to the toilet for long hours, respectively. 16.7% of the students said that they have to wait in a long queue to use the toilet, and 8.8% of girl students often suffered from lower abdominal pain and had to take leave from school due to menstruation. It can be inferred that lack of a proper hygienic, environment had deleterious effects on physical health of students like the risk of Urinary Tract Infections and also catching other infectious diseases.

Chart 23: Participation in Sanitation and Hygiene workshops



The pie chart shows that the majority of students, i.e. 97.4%, have attended the workshops on sanitation and personal hygiene, indicating that the program was successful in reaching a large proportion of the student population. This high level of student participation suggests that the program was well-received and valued.

Observation of School sanitation units:

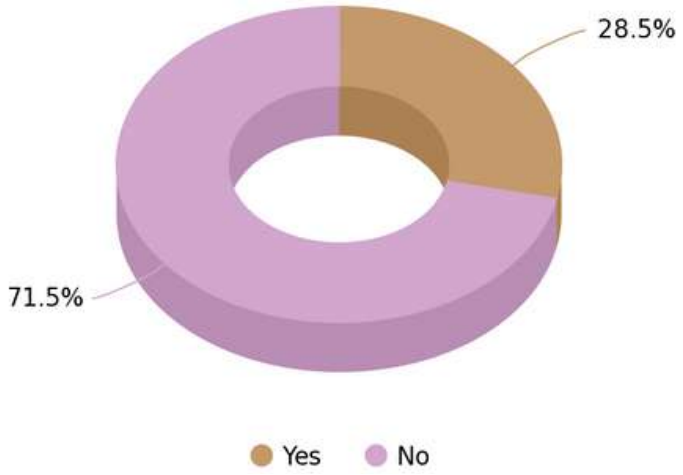
Sr.No.	School Name	Urinal		Toilet for differently able students	Mirrors	Soaps/ Sanitizer	Overhead tank
		Male	Female				
1	Z.P. Primary School, Chanduri	3	3	1	No	No	Yes
2	Z.P. Primary School, Pimpri Yadgire	3	3	1	No	No	Yes
3	Z.P. Primary School, Sarsi	3	3	1	No	No	Yes
4	Z.P. Secondary School, Khalkoni	3	3	1	No	No	Yes
5	Z.P. Primary School, Falegao	3	3	1	No	No	Yes
6	Z.P. Primary School, Katamla	3	3	1	No	No	Yes
7	Z.P. Upper Primary School, Kupati	3	3	1	No	No	Yes

Aananda Gabaji Khadse, Farmer, Bitoda Teli village, In the farm of Anananda recharge pit, has been constructed. He said “Before getting water for farming after November was difficult because the well used to get dry and we were able to cultivate only one crop. Now with the help of the recharge pit water level in the area has been increased and water in the well is remaining for a long duration.

It has significantly increased the water level resulting in the recharge pit itself water remaining after the rainy season. We are also using the water from the recharge pit for spraying purposes. It is not only beneficial for me water level in the well of neighboring farmers also increased. I am thankful to HDBF for this big help it has solved the water issue for us and it is beneficial for surrounding farmers also.

RO Installation

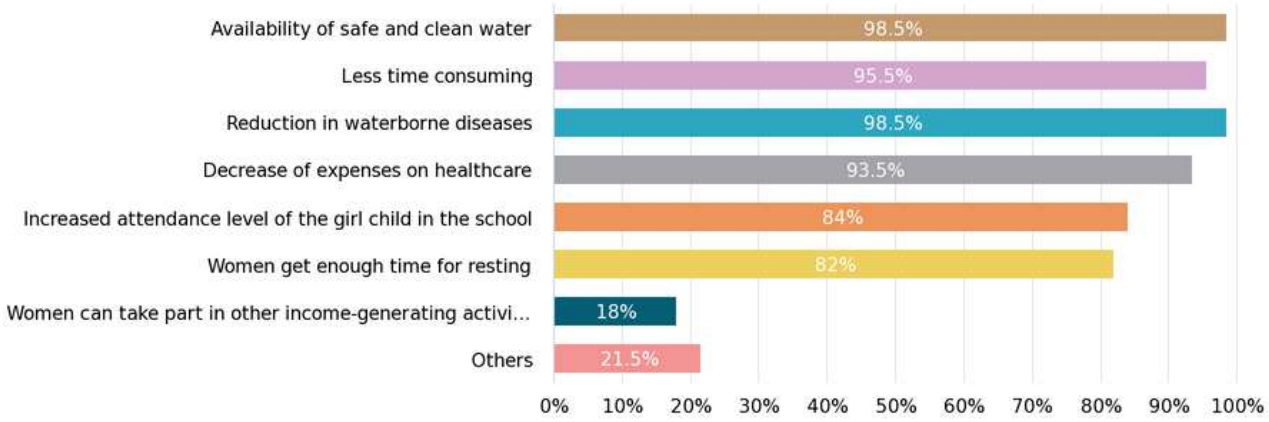
Chart 24: Clean Drinking Water by Installing RO Plant and Water ATM



The graph shows that the majority of the respondents, i.e. 71.5 %, reported that they participated in the planning process or meetings before the RO installation in the community. This high level of participation suggests that the project was implemented with the involvement and input of the community, ensuring that the project was tailored to their specific needs and requirements. When communities are involved in the decision-making process, they are more likely to take ownership of the project and ensure its sustainability. The high level of participation reported in this survey suggests that the community engagement was built as a strategy for program implementation.

School Sanitation Unit, Sarsi Village

Chart 25: Benefits of RO Plant



The results of the survey show that the installation of the RO plant has had a significant positive impact on the community. Almost all of the respondents (98.5%) reported that there is an availability of safe and clean drinking water and a reduction in waterborne diseases in their community. This has not only improved the health outcomes of the community but also resulted in a decrease in healthcare expenses, as reported by 93.5% of the respondents. The installation of the RO plant has also resulted in time-saving benefits for the community. 95.5% of the respondents reported that it takes less time due to the availability of safe drinking water, which can be attributed to the reduced need for water collection and purification.

Additionally, the installation of the RO plant has had a positive impact on gender equality and women empowerment in the community. The survey results show that 82% and 84% of the respondents reported that women get enough time for resting and have an increased attendance level in school respectively, after the installation of the RO plant. Furthermore, 18% of the respondents informed that now women can take part in other income-generation activities.

The survey results highlight the significant impact of the RO plant installation project on the community, improving the quality of life and empowering women. The results suggest that the project has been successful in achieving its objectives and has been a valuable contribution to the betterment of the community.

Roof Water Harvesting at School

Borewell Recharge

Borewell recharge pit

Borewell recharge has been done at the RO plants getting water from the borewell. Under the program, a soak pit has been constructed near the borewell, and water from the RWH and wastewater of the RO plant has been disposed of in the soak pit. This borewell recharge structure is helping in the increase of the groundwater level which is benefiting in terms of water availability throughout the year for the RO plant as well as it is helping in increasing the groundwater level.

Roof water harvesting at RO plant

RWH system has been installed in the schools and RO plants. Through the system collect the rainwater on the roof and dispose of that into the soak pit near the structure. This is increasing the groundwater level and it has shown the water remains for a longer duration in the borewell and well located nearby to the system. Maintenance and cleaning of the pipes are taken care of by the school authority and RO plan operator.

Recharge pit in Kupati village

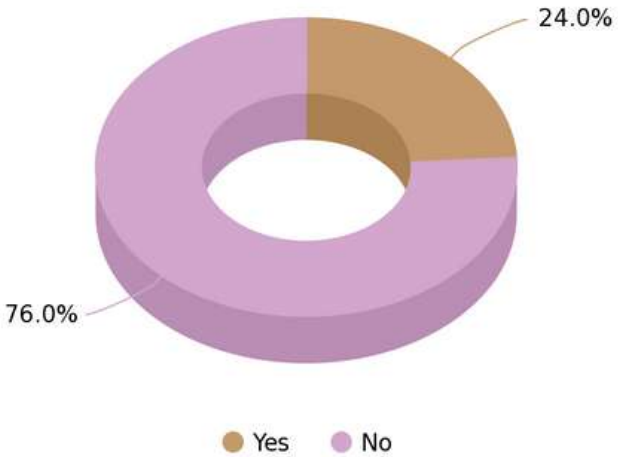
Water is available in the well in the month of March in Kupati village. This well is located near the recharge pit previously this well used to remain dry from January onwards. People are using this well for drinking water purposes. This picture is taken during the field visit in the month of March

Recharge pit in farm

FGD IN THE PANCHAYAT OF DONGARGAO VILLAGE

FGD in the Panchayat of Dongargao Village revealed that people from the village were suffering from waterborne diseases, especially kidney-related diseases, as the TDS of the water in the village was higher than the required percentage. Most of the people from the village are small farmers and farm laborers for whom buying water from outside was not affordable. Most of the people were drinking water from the village; only a few had water filters in their houses which is very costly. Also, fetching clean water was time-consuming for the villagers. Due to this, women had to compromise their work, and girls used to spend their time fetching water. It has also impacted the livelihood of people. Now, due to the RO plant in the village, all the villagers are getting water on time. The RO has also reduced waterborne diseases and it has improved the overall health of the people. Now, women can engage in farming work and focus on house chores. People from the neighboring villages also get clean drinking water from the RO plant.

Chart 26: Sense of Security of steady/regular supply of potable water



It is evident from the chart that the majority of the respondents, i.e. 76%, have a sense of security regarding the steady and regular supply of potable water through RO. This indicates that the installation of the RO plant has been successful in providing a reliable source of clean drinking water to the community and in instilling a sense of water security for majority in the project communities.

Mr. Pravin says, "I was acting as a Sarpanch when this program was introduced. In our village, we were struggling to get clean water as the water in our area is saline. I worked with Mr. Diwakarji, the co-ordinator of YRA, for all the procedures. As the head of the Panchayat, I was involved, along with the villagers, to taking decisions regarding the appropriate permissions and formation of the village water committee. We, as a GP, helped them avail land and constructed a shed for the RO plant. For the planning and implementation of the program, I was actively involved along with the village water committee and YRA team.

-Mr. Pravin Shinde, Vice Sarpanch, Chanduri

Interaction with Mr. Sachin Shevale, RO plant operator and the president of Bitoda Teli village water committee, revealed that he is providing water to the villagers free of cost. All the villagers can get water without any charges. Because of that, all the villagers are drinking water from the RO plant. For the maintenance of the RO, they are providing water at programs and social gatherings at a minimal cost. In the other villages, they are selling water cans at a minimal cost of Rs 10, and this helps them maintain the plant as well as provide water to other villages also. This RO plant became self-sustainable due to the earning, and people are buying water from the plant as it is very cheap compared to the other RO plants. Maintenance of the plant is regular, and the village water committee is making sure that they can supply regular water to the village without any disruptions. For this, they are using the above strategy, which is successful and self-sustainable for the plant.

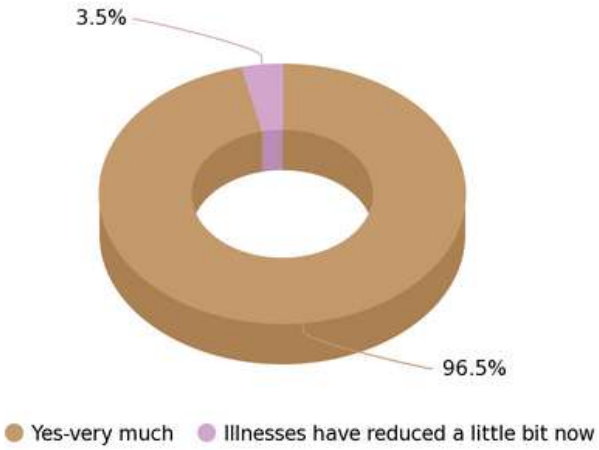
Chart 27: Female Households involved in income-generating work

The survey results suggest that after the installation of the RO plant, there has been increased productivity in households where women are also involved in remunerative work. 33% of women members involved in additional income-generating work have earned Rs. 500, followed by 16.7% who have earned Rs. 1000, and 22.2% each who have earned Rs. 200 and Rs. 300 respectively. Only 5.6% of them have earned Rs. 2000. This indicates that the women in these households are able to earn a steady income despite not having to work long hours, due to the availability of clean drinking water. Therefore, the installation of the RO plant has not only provided a reliable source of clean drinking water but has also indirectly contributed to increasing the productivity of women in the community.

Mrs. Mina Shinde, Village Chandori highlighted that "I am doing the kitchen garden at my home and I also have plenty of places to do that so I also planted some trees and fruits. I am adding this vegetable to our daily food. My daughter was suffering from anemia and it is necessary for her to include green veggies in her diet. But getting fresh green veggies was challenging for us. But due to the kitchen garden seed kit, I started growing my own vegetable and now my daughter's health is also good. Thank you HDB and YRA for supporting us."

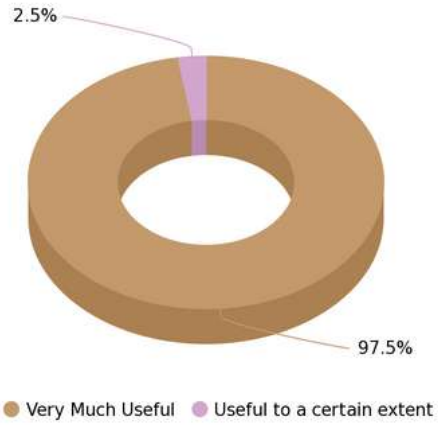
-Mrs. Mina Shinde, Village Chandori

Chart 28: Reduction in Water-borne diseases



It can be observed from the chart that after the installation of the RO plant in the community, there is a decrease in the cases of waterborne diseases. It is evident from the statistics that 96.5% of the respondents reported that there is a great reduction in water-related illnesses among their children due to safe drinking water. Only 3.5 % of the respondents informed that water-related illnesses have reduced a little bit now. Hence, it can be inferred from the data that access to safe drinking water can also stimulate economic development by reducing healthcare costs, improving productivity, and encouraging investment in the community.

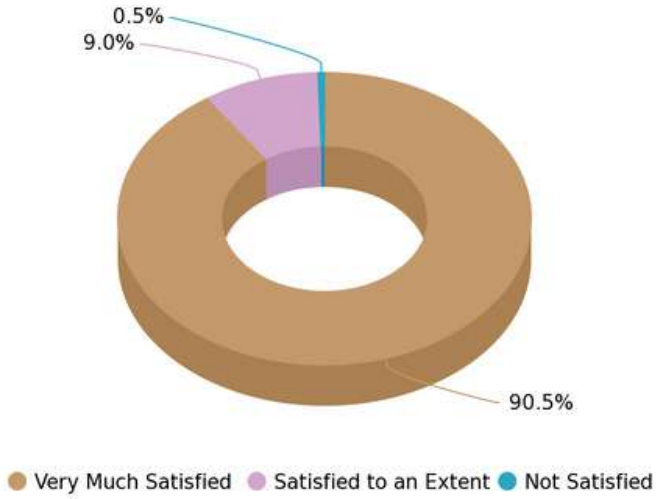
Chart 29: Usefulness of the RO plant



The survey results indicate that the majority of the respondents, i.e. 97.5%, find the RO plant to be very useful, while only 2.5% of the respondents find it useful to a certain extent. This suggests that the RO plant has been successful in meeting the community's need for a reliable source of clean drinking water. The high level of satisfaction among the respondents indicates that the project has been implemented effectively and has met its objectives.

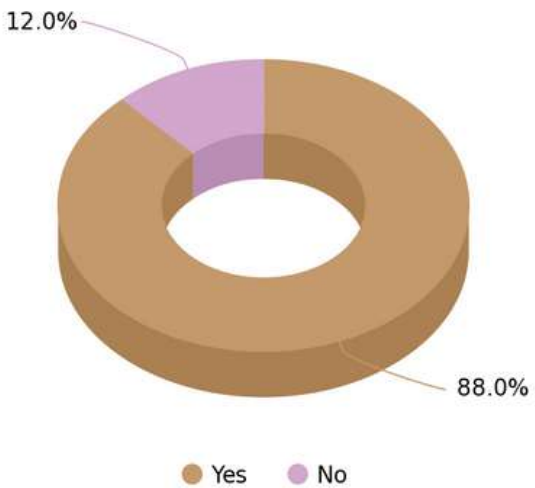
Mr. Subodh Ingale, GP Secretary, Kat-Amla Village, states: "Water in our village is salty water; its TDS is 3, 000 which is way higher than the required value. The water quality was so bad that even the utensils for water storage used to get spoilt due to the salt contained in the water. Only one well has good quality water, but it is situated on a private farm, and people used to fetch water from a well that was far from the village. The situation was so bad in our village that 14 people are suffering from kidney-related diseases and are on dialysis. The kidney stone was the most common disease in our village. We, as a panchayat, were facing these health issues and needed solutions. In our village, the groundwater level is very good, but the water is not useful for us. This RO plant was much needed and necessary for us. The RO is solving our health issues as well as saving money that people had been spending on water. Now, people are getting clean and sweet drinking water. I am thankful to the HDB finance on behalf of our village for providing us with the RO plant. I can't describe how much it is helping us."

Chart 30: Ratings of the RO Plant



Based on the data collected from the respondents, it can be concluded that the majority of them, i.e., 90.5 %, are very much satisfied with the installation of the RO plant. This indicates that the project has successfully met the expectations and needs of the community in terms of providing safe drinking water. Furthermore, 9% of the respondents reported being satisfied with the RO plant, which suggests that the project has had a positive impact on their lives. However, there are still 0.5% of respondents who are not satisfied with the RO plant. On the whole, the high level of satisfaction among the majority of the respondents indicates that the RO plant has been effective in addressing the need for safe drinking water in the community.

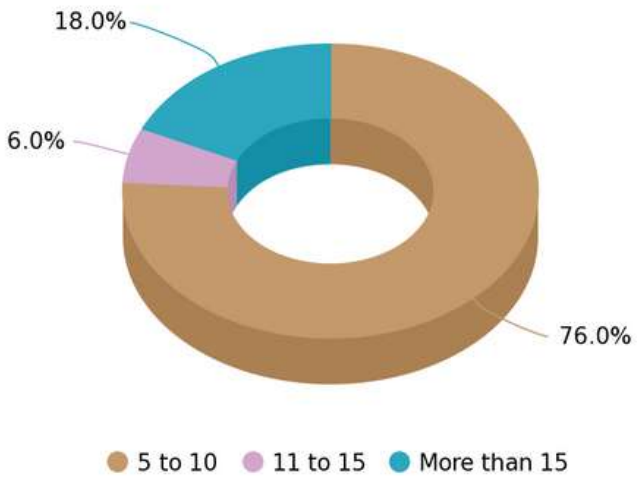
Chart 31: Purchase of Packaged water



Based on the pie chart, it can be concluded that the installation of the RO plant has significantly reduced the dependence of the community on packaged water from other sources. The data indicates that a large majority of respondents, i.e. 88 %, have stopped purchasing packaged water after the installation of the RO plant, which suggests that they have access to safe drinking water from the RO plant. This could lead to significant cost saving for households who no longer need to purchase packaged water.

Kitchen Garden

Chart 32: Different varieties of plants sown in the kitchen garden

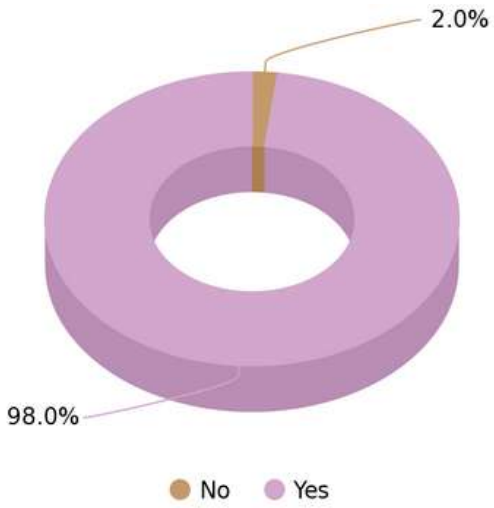


It can be observed from the pie chart that 76 % of the respondents have sown 5 to 10 varieties of plants in their kitchen garden. 6 % have sown 11 to 15 varieties, and 18% of respondents have sown more than 15 varieties of plants in their kitchen garden. Different plants provide different nutrients, so growing a variety of vegetables, fruits, and herbs ensures that they have a diverse range of vitamins and minerals in their diet. Growing a wider variety of plants helps to increase biodiversity in the garden, which is essential for maintaining a healthy ecosystem. On the whole, sowing a greater variety of plants in the kitchen garden can help to create a more sustainable and resilient ecosystem, while also providing a wider range of health benefits and a more diverse harvest.

Mrs. Anupama Shejav, 70yrs, from Kupti village, says, "These kitchen garden seeds helped us to grow our own vegetables. Nowadays buying vegetables is very costly; we have to spend Rs 500 on buying vegetables for a week. We are now growing vegetables at our home. I am consuming homegrown vegetables which are nutritious, and I'm also saving money. I created seeds from the existing plants, and now I have my own collection of seeds from last year's kitchen garden. In this way, I can grow my vegetables throughout the year and for longer periods. Now I am not buying any vegetables. I am thankful to HDB Financials for their support.

-Mrs. Anupama Shejav, 70yrs, village Kupti

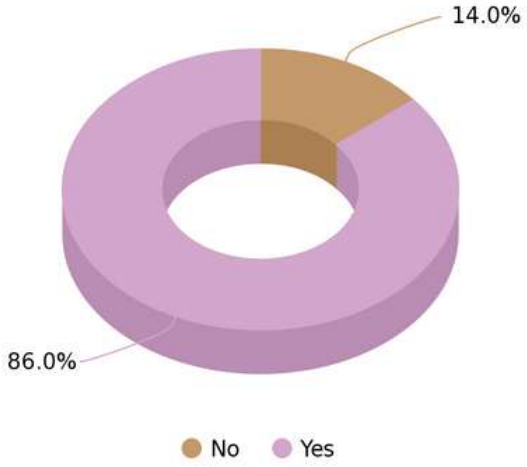
Chart 33: Consumption of vegetables by children and anaemic family members



The pie chart indicates that almost all, i.e. 98%, of the respondents, said that they are regularly adding vegetables to their children's and anaemic family members' diets. Regularly adding vegetables from a kitchen garden to the diets of children and anemic family members can provide a range of health benefits, including improved nutrient intake, digestion, immunity, and cost-effectiveness.

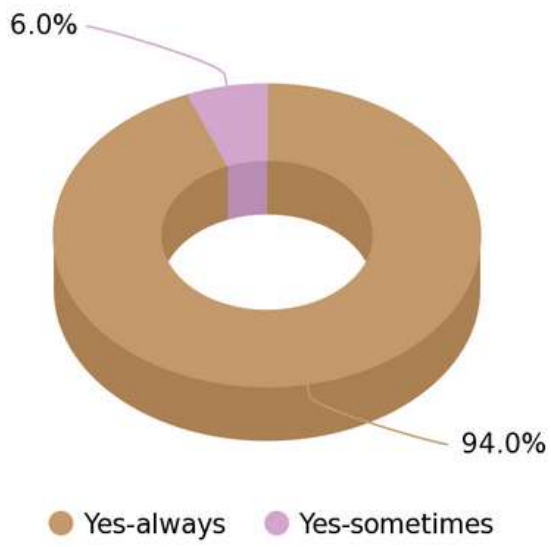
Moreover, it can also help reduce the risk of exposure to harmful chemicals that may be present in commercially grown vegetables. Therefore, the results of this study suggest that encouraging the cultivation and consumption of home-grown vegetables can be a beneficial strategy for improving the health and nutrition of children and anaemic family members.

Chart 34: Health Improvement after the Intervention



It can be observed from the pie chart that 86% of the respondents reported that they observed improvement in health after they started using the produce from the kitchen garden. 14% of the respondents reported no improvement in health. Improved health can be due to intake of a balanced nutrition owing the availability of a wide variety of vegetables and fruits from the Kitchen garden.

Chart 35: Saving Money after using the kitchen garden vegetables and pulses



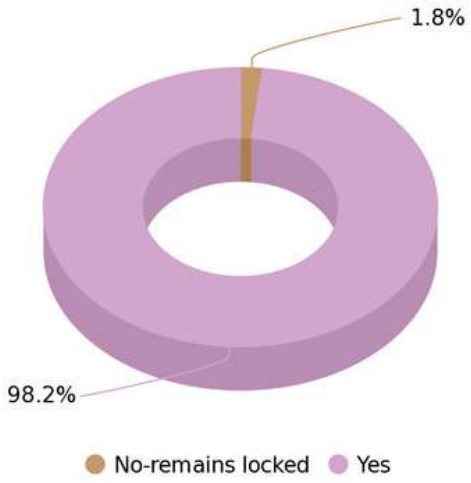
The pie chart indicates that 94 % of the respondents said that they are saving money on regular vegetables and pulses since they started using the vegetables and pulses from the kitchen garden. And 6% of respondents said they are able to save money sometimes. On the whole, saving money on regular vegetables and pulses by growing them in a kitchen garden can provide a range of benefits, including cost savings, fresher produce, and health benefits.

Moreover, the results of this study suggest that cultivating a kitchen garden can be a useful strategy for individuals who want to reduce their household expenses and improve their dietary habits. Therefore, encouraging the cultivation of a kitchen garden can be a beneficial step toward achieving sustainable and healthy lifestyles.

FGD with kitchen garden women in Kupti villages revealed that kitchen gardens are helping them in getting fresh green vegetables like spinach, which is high in iron. These vegetables are helping them in fulfilling the nutritional value required for the female body. ASHA workers of this village have noticed a significant improvement in iron and HB in the women who are doing kitchen gardening and consuming vegetables daily. This kitchen garden is not only saving money but has also improved the health of female members of the family.

WASH

Chart 36: Use of new Sanitation Blocks

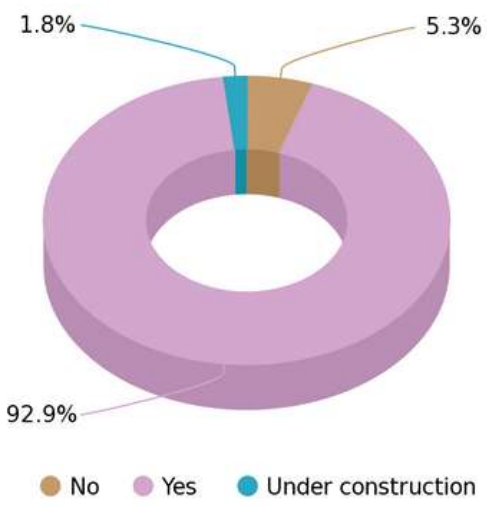


It can be observed from the pie chart that almost all, i.e. 98.2 %, of the students use the new sanitation block, and only 1.8% of students do not use the new toilet block. The impact of using a new toilet block in school by students can be highly positive, contributing to improved hygiene, increased comfort and well-being, reduced absenteeism, improved morale and better academic performance.

Mr. Dnyandev Lodam, HM, Z.P. Primary School, Sarsi, says, "Before, our school did not have adequate toilets, due to which students were facing difficulties. The students used to go home from school to use the toilet. Girls were more vulnerable in terms of accessing the toilets. Students used to go in the open for urinating on the school premises. Our school environment was stinky. The perception of the parents looking at our school was different, and they did not want their children to enroll in our school. Studies were also disturbed due to this, and in the rainy season, it was more challenging for us. After the construction of the WASH unit in our school, all the students are using it .We are also using this unit. All the cleaning of the unit is being taken care of by us. Now students don't feel any difficulties, and their attention in the classroom has increased. We have also got several new admissions in our school after the construction of this block. Parents are also happy now. I am thankful to HDB financial for such a huge help to our school."

-Mr. Dnyandev Lodam, HM, Z.P. Primary School, Sarsi

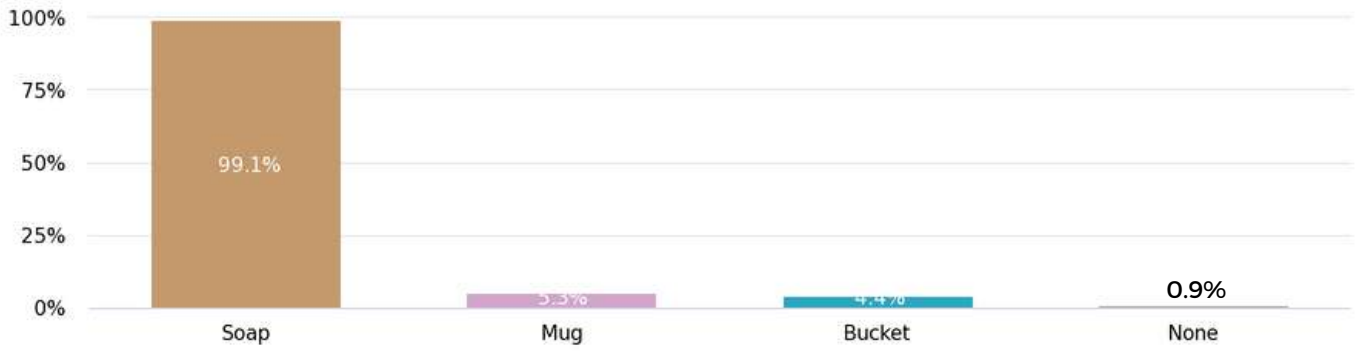
Chart 37: Availability of Water in toilet



The pie chart indicates that 93% of the student respondents reported that there is availability of water connection in each toilet block, while 1.8% that water connection is under construction. 5.3% said no to the availability of water connection in each toilet block. Hence, the majority of the students reported the availability of water in the toilet block. Overall, the availability of water connections in school toilets is crucial for maintaining hygiene, promoting attendance and academic performance, and creating a healthy learning environment.

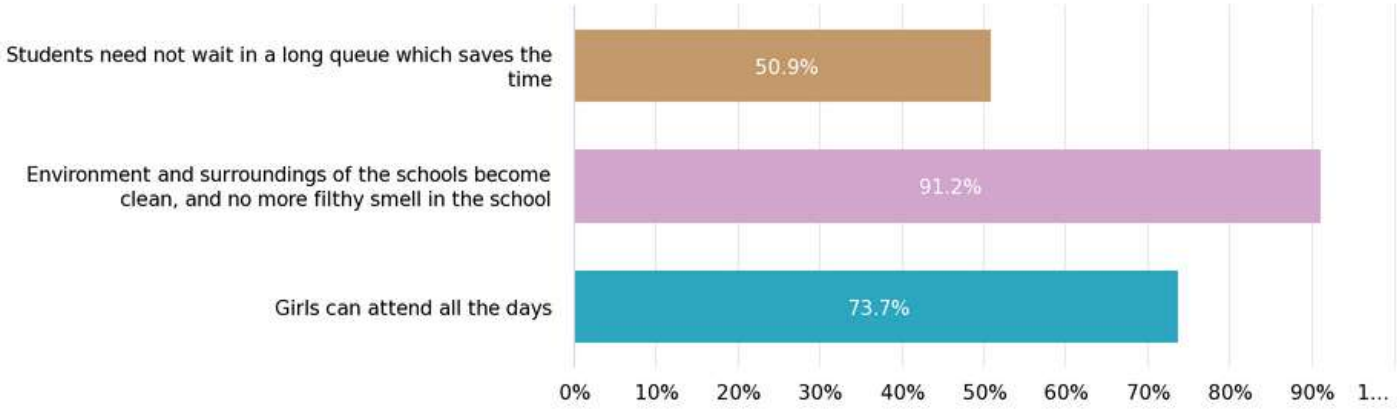
Mr. Manoj Gadling, Villager, Chanduri, says: “Earlier, getting clean water was very challenging for us. We used to fetch drinking water from another village, and we had to buy RO water from another village which is 18 km far. Outside, it was charged Rs 25 per can. Most of the time, I had to compromise my work for getting drinking water, which was a headache for me. Now, because of the RO plant in the village, it became very convenient for us to get clean drinking water. I need one can in two days, which I can get whenever I want through the water vending machine that is 24x7 open for us. It is very useful to the entire village as the drinking water available in the village was not clean. I am thankful to all those behind this; the RO plant was much needed and very useful for us.”

Chart 38: Availability of soap/ mug/ bucket in the toilet regularly



It can be observed from the above chart that almost all of the student respondents i.e. 99.1% said that there is regular availability of soap in the toilet. Also, 5.3% of student respondents reported that there is regular availability of mugs in the toilet, and 4.4% said there is regular availability of buckets in the toilet. Only 0.9% of student respondents said that none of the above is available regularly. Hence we can infer that regular availability of soap in school toilets is essential for maintaining good hygiene, promoting attendance and academic performance, creating a healthy learning environment, and improving sanitation.

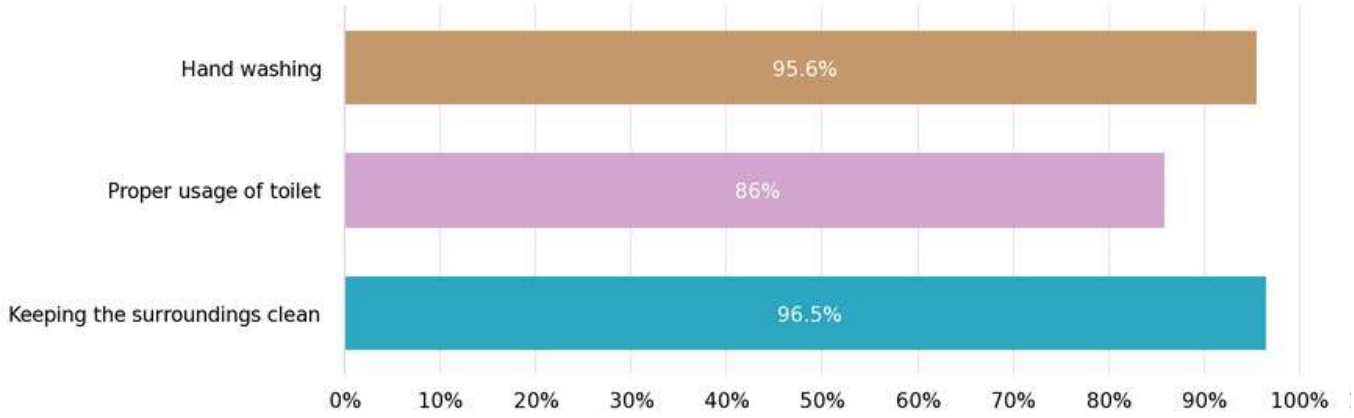
Chart 39: Changes after execution of the sanitation block



Based on the survey results, it can be concluded that there have been significant improvements in the school environment and facilities. The majority of the respondents, i.e. 91.2%, reported a clean environment and no more filthy smell in the school, indicating that efforts to improve sanitation and hygiene have been successful. The survey also highlights the positive impact of the improvements on the attendance of female students, with 73.7 % of respondents reporting that girls can now attend school on all days. This is a significant achievement as a lack of adequate facilities can often result in girls missing school during menstruation. In addition, 50.9% of respondents reported that students no longer have to wait in long queues, which has saved time and improved the overall school experience.

Summing up, the survey results indicate that the improvements to the school facilities have been successful in enhancing hygiene, attendance, and overall school experience. These results demonstrate the importance of investing in school infrastructure and facilities to create a positive and conducive learning environment for students.

Chart 40: Development of hygiene-related habits after attending the workshop

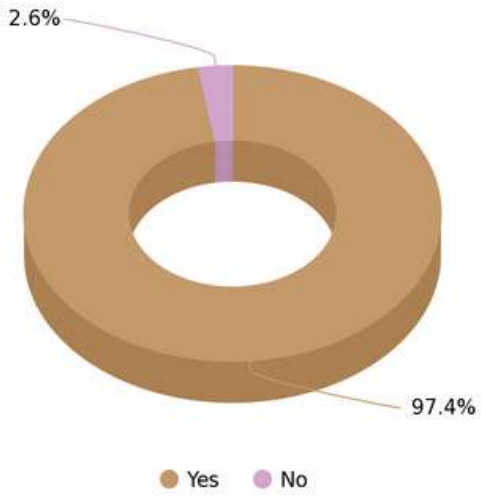


The chart clearly indicates the positive impact of attending the workshop on the hygiene-related habits of the respondents. A significant majority of the respondents, i.e. 95.6 %, reported developing the habit of handwashing and keeping the surroundings clean (96.5%) after attending the workshop. This indicates that the workshop was effective in promoting good hygiene practices and encouraging behavioural change among the participants. Furthermore, 86% of respondents reported developing the habit of proper usage of toilets, indicating that the workshop was successful in addressing specific hygiene-related issues that may have been prevalent in the community.

On the whole, the findings of this survey suggest that hygiene workshops can be an effective tool for promoting behavioral changes and improving hygiene practices among participants. The results also highlight the importance of investing in hygiene promotion programs and workshops to create awareness and encourage good hygiene practices in communities.

FGD with students and parents revealed that because of the new sanitation block and training on sanitation, parents have seen changes in their children's behavior. Children are now following the hand washing practices at home and not going outside for defecation. This also revealed that children demanded toilets to be constructed at their homes because now they have a good toilet in schools. Parents of girl students are happier, and they have said now their children are attending school regularly, even during their menstrual cycle.

Chart 41: Students' satisfaction with the program



The pie chart clearly indicates that the vast majority of student respondents, i.e. 97.4%, are satisfied with the program. This high level of satisfaction is a positive indication that the program has been effective in meeting the needs and expectations of the students. The small percentage of respondents, i.e. 2.6%, who reported not being satisfied with the program suggests that there may be areas for improvement in the program. It would be important to investigate the reasons for dissatisfaction and address any issues that may have contributed to the negative feedback.

Summing up , the results of this survey demonstrate the importance of implementing effective WASH programs in schools. The high level of satisfaction among the majority of respondents suggests that these programs can play an important role in promoting good hygiene practices and improving sanitation in schools. It is essential to continue to monitor and evaluate the effectiveness of such programs to ensure that they meet the needs of students and promote positive outcomes.

OECD FRAMEWORK

RELEVANCE

RATING

The project communities in the Amravati, Akola, and Washim districts are in the Vidarbha region of Maharashtra. This region is water-scarce, and the community in this region faces challenges to safe and accessible drinking water. This project helped to address the felt needs of the communities by providing access to safe water and proper sanitation facilities, which is crucial for ensuring good health and reducing the spread of waterborne diseases. The project was very much needed to reduce the burden of collecting water among women and children. The project also addressed the need for better sanitation facilities for girl children in schools.
As the Project was observed to be addressing the felt needs of the community, the project is highly relevant.

COHERENCE

RATING

The Project is well aligned with multiple SDG Goals:
SDG 1: No Poverty
SDG 3: Good Health and Well being
SDG 4: Quality Education
SDG 5: Gender Equality
Goal 6: Clean water and sanitation
Goal 10: Reduced Inequalities
Goal 13: Climate Action
Since the project is in alignment with multiple SDG Goals, the project is highly coherent.

EFFECTIVENESS

RATING

The program has improved access to clean and safe drinking water through the installation of an RO plant. Kitchen gardens have also improved access to fresh, healthy food and provide an opportunity for individuals to engage in physical activity and spend time outdoors. Sanitation practices among students have reduced the incidence of waterborne diseases and other illnesses. In addition, improved sanitation can have social and economic benefits, including increased school attendance, improved productivity, and reduced healthcare costs.

Hence, the project is highly effective as it has largely met its objectives, achieved the results expected, and reached out to the right target groups.

EFFICIENCY

RATING

Considering the investments made on the RO Plant installation, kitchen garden, soak pits, and sanitation practices among students and the benefits obtained by the community in terms of clean and safe drinking water, improved access to fresh, healthy food, reduction in the spread of waterborne diseases and improved sanitation, it can be said that the project is highly efficient in nature.

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

IMPACT

RATING

The installation of a Reverse Osmosis (RO) plant had a significant impact on the quality of drinking water, leading to improved health outcomes in communities. Kitchen gardens helped families have balanced nutrition and also significantly reduced the expenses of buying vegetables and fruits for consumption. The construction of sanitation blocks helped in improving the sanitation status of schools, leading to reduced illnesses, among school children. This led to better school attendance among the children. Thus the project can be stated to be high in its impact.

SUSTAINABILITY

RATING

The sustainability of the Project can be improved if the operation of the RO plants is entrusted to Village Sanitation and Water Committees. The sustainability of the Sanitation blocks can be enhanced by ensuring the formation of a School Sanitation Committee and their effective monitoring and supervision. The kitchen gardens and soak pits can be sustained by having proper mechanisms to educate and motivate people in the project communities to continue them as a practice.

There is scope for the sustainability of the Project.

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

CHAPTER 5: RECOMMENDATIONS

- Formation of Village wash and sanitation committees
- Formation of School Sanitation Committees
- Periodic Inspection and monitoring of Sanitation Blocks