
CSR Impact Assessment Report

Lake Restoration Project

Prepared For



Prepared By



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ABBREVIATIONS

NGO

Non-Governmental Organization

EFI

Environmental Foundation of India

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EXECUTIVE SUMMARY

Background



Project activities

- Removal of weeds and other solid garbage.
- Removal of Excessive Silt Sand from the Lake.
- Recharging of water in the lake.
- Construction and strengthening of the bund.
- Inlet Canal Regulation.
- Lake Fencing.
- Make the water usable for farming, irrigation, drinking, and other useful purpose.



Project year
FY 2020



Beneficiaries
500 +



NGO Partner
Environmentalist
Foundation of India (EFI)



Project Location
Tamil Nadu

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)

Tamil Nadu

Direct Beneficiaries Covered

195 beneficiaries

Sample Technique

Purposive & Stratified
Random Sampling

Stakeholders

Village Heads, NGO partner, Local
NGO leader

Major Findings:

79%

of the beneficiaries had said they were not able to use the lake previously due to hyacinth Spread.

61.5%

of the people use the water from the lake for cattle, prior to the lake restoration.

98%

of the villagers said that the villagers had communicated before conducting the restoration process.

95.4%

said that tree plantation had been done around the lakes.

74%

said that the water storage capacity had been increased.

71.9%

had said that the water level had increased by 2 to 4 metres.



92%

had reported that in the nearby water and bore wells the water level had been increased post-restoration process.

91%

of the villagers said that the biodiversity had increased.

79%

of the community people use the lake for fishing.

100%

respondents said that there is a local committee to take care of the lake.

CHAPTER 1: INTRODUCTION

Project Background

Lake restoration refers to the process of revitalizing and improving the ecological health and water quality of lakes that have been impacted by pollution, degradation, or other human activities. It is of paramount importance due to the crucial role that lakes play in supporting biodiversity, providing clean water, and offering various ecosystem services. Restoring lakes helps to mitigate the adverse effects of pollution, restore habitats for aquatic plants and animals, and enhance recreational opportunities. By improving water quality, lake restoration contributes to the overall well-being of surrounding communities and promotes sustainable development, ensuring the preservation and long-term viability of these valuable freshwater ecosystems.

Considering the importance of lake restoration, HDB Financial Service has partnered with the Environmentalist Foundation of India (EFI) and restored 3 lakes in Ambattur (Tiruvallur district in Chennai), Tirupur, and Tuticorin. The previous conditions of these lakes are so bad that local people do not go near to the lake. Previously The lakes were filled with solid garbage wastes, invasive weeds, and toxic effluents from nearby factories. Due to this abuse of these lakes, there were no life forms at all to survive. The bird's migration and nesting were also severely affected before. After the restoration, the aquatic life started to flourish, and bird migration and nesting had also supported been supported. The people are using these lakes for irrigation and for groundwater recharge.

During the initial period of March to May 2020, HDB Financial Service Funded Rs. 52,50,000/- After signing the grant agreement with EFI NGO. Post performing the de-silting of all 3 lakes along with the submission of the first interim report for all 3 sites, HDB Financial Service funded Rs. 42,00,000/- from June to August 2020 and after submission of the project report and fund utilization statement by EFI, HDB Financial Services funded Rs. 10,50,000/- from September 2020 to February 2021.

The data was collected by both qualitative and quantitative studies. The stakeholders (Village head, EFI NGO partner, 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 NGO Partner

The Environmentalist Foundation of India (EFI) is a non-governmental organization based in India that focuses on environmental conservation and wildlife protection. The organization was founded in 2007 by Arun Krishnamurthy, a wildlife conservationist and environmentalist.

The primary objective of the Environmentalist Foundation of India is to create awareness about environmental issues and actively engage in conservation efforts. The organization's activities encompass various aspects of environmental conservation, including wildlife conservation, habitat restoration, and ecological research. Some key initiatives and areas of focus for the Environmentalist Foundation of India include:

- **Lake and Water Body Conservation:** EFI works towards the restoration and conservation of lakes and water bodies across India. They undertake activities such as cleaning, desilting, and removing invasive species to improve the health and ecological balance of these water ecosystems
- **Biodiversity Conservation:** EFI actively participates in projects that aim to protect and conserve biodiversity. This includes initiatives such as habitat restoration, afforestation, and creating awareness about the importance of preserving native flora and fauna.
- **Waste Management and Cleanliness Drives:** The organization organizes cleanliness drives and waste management programs to raise awareness about the detrimental effects of littering and improper waste disposal. They work towards creating sustainable waste management practices and promoting cleanliness in urban and rural areas.
- **Environmental Education and Outreach:** EFI conducts educational programs, workshops, and awareness campaigns to engage and educate people about environmental issues. They collaborate with schools, colleges, and communities to promote environmental consciousness and sustainable living practices.
- **Wildlife Rescue and Rehabilitation:** The organization actively participates in wildlife rescue and rehabilitation efforts, working closely with authorities and local communities. They provide medical assistance, rescue operations, and support for the rehabilitation of injured or orphaned wildlife.

CHAPTER 2: RESEARCH METHODOLOGY

Research can be understood to be 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 understanding by following scientific principles and methods to minimize bias and subjectivity, which is contrary to reaching conclusions based on assumptions or speculations. Though information in certain areas can also be gained through common sense and based on general observations and hearsay, it will not be considered valid until it has been obtained methodically, which can stand the test of time. The defining characteristics of scientific research are objectivity, ethical neutrality, reliability, testability, and transparency. Identifying the research problem forms the starting point of the research, which is then defined and redefined through a proper review of the literature or deliberations with research experts and knowledgeable others on the subject. Each research problem comes with many perspectives and dimensions, and a single study cannot possibly cover all of those. 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 follow a proper methodology to predict possible problems and steer through in a proper direction without losing focus.



Use of Mixed Methodology for Maximum Insights

The research problem involved understanding the extent of the impact created by HDB Financial Services-supported initiatives, and increasing awareness and sensitivity of the local communities towards improving the quality of life by restoring the lakes by partnering with EFI. To gain maximal insight, both quantitative and qualitative techniques were used.

Application of Quantitative Techniques

A quantitative study is needed 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 in advance by the researcher before entering the field. Though the information obtained is easily amenable to various statistical measures and tests, quantitative information has its own limitations. It can uncover only surface phenomena and cannot penetrate beyond and identify what is hidden deep beneath. This study assesses the impact of structured tools like the interview schedule administered. This helped in getting quantifiable information.

Application of Qualitative Techniques

Qualitative research can only reveal enriched and hidden information that may not be evident at the surface level. The qualitative approach is distinguished by deeper probing and flexibility, and it can yield massive amounts of data not anticipated when the research was initiated. For better accuracy, ensuring anonymity, and at the same time, covering a larger sample population, quantitative techniques are used. The qualitative technique of interviews with key stakeholders and community people was adopted to gain a better understanding of the problem alongside quantitative research.

Ensuring Triangulation

Triangulation is needed to increase the credibility and validity of the research findings. It also helps 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 been structured to reflect this point.

Research Design

- **Name of the Project** : Lake Restoration Project in Ambattur (District- Thiruvallur), Thiruppur and Tuticorin
- **Project Partner** : Environmentalist Foundation of India
- **Research Design Employed** : Descriptive research design
- **Sampling Technique** : Stratified Random sampling and Purposive Sampling
- **Sample Size** : 195 beneficiaries
- **Qualitative Methods Employed** : Key Stakeholder Interviews; Focus Group Discussions

Key Stakeholders



Study Tools

Tools used during the study

SoulAce has developed a mobile application a platform for data collection that the field team used to undertake the study. This application has real-time data entry and data upload with GPS location details with a questionnaire, for interaction with the project beneficiaries, as well as a provision to take pictures of each respondent.



Primary data was collected using two types of questionnaires.

Questionnaire for Primary Beneficiaries:

Structured questionnaires were developed reviewing the project details for each of the focus areas and indicators were pre-defined before conducting the surveys.

Questionnaire for Secondary Beneficiaries & Stakeholders:

Semi-structured questionnaires were developed for each type of sample of this group. Stakeholders were identified across the focus areas.

One on One discussion was done with beneficiaries to prepare the case studies.

Ensuring Commitment to Research Ethics

Anonymity

Anonymity implies not revealing the identity of the respondents. This research study strictly maintained anonymity unless the same was warranted for the illustration of success stories or case studies. After the research was completed, the study did not reveal how the individual respondents answered the questions. The results were revealed only as an aggregate, so no one would not be able to single out the identity of a particular respondent. This was required to not maintain the trust of the respondents.

Confidentiality

Research subjects participate in the process only based on the belief that confidentiality will be maintained. Hence, the research did not reveal any data regarding the respondents for purposes other than the research.

Non-Maleficence

This implies that the research would not harm the research subjects. This study ensured that the respondents were not harmed in any way.

Beneficence

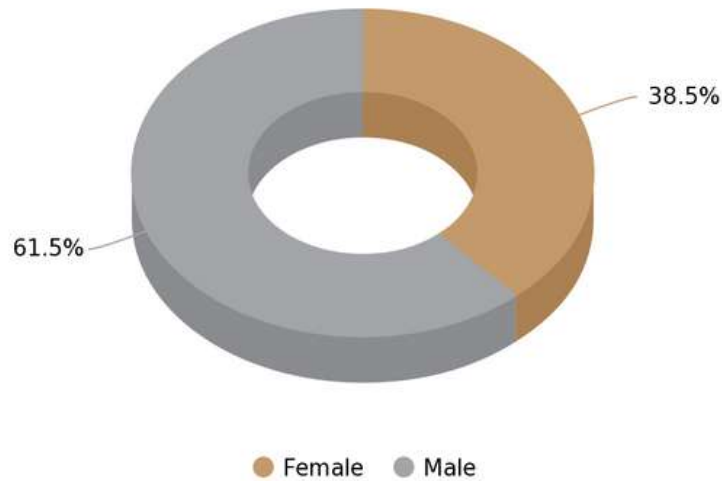
Any research study should lead to some benefits for the respondents. This research study ensured that individuals, groups, and communities benefit and that their well-being is enhanced.

Justice

Justice refers to fairness to all. This research study ensured equal treatment of all its research subjects, and there were no biases or prejudices toward any group based on social stereotypes or stigma associated with belonging to a +group or class.

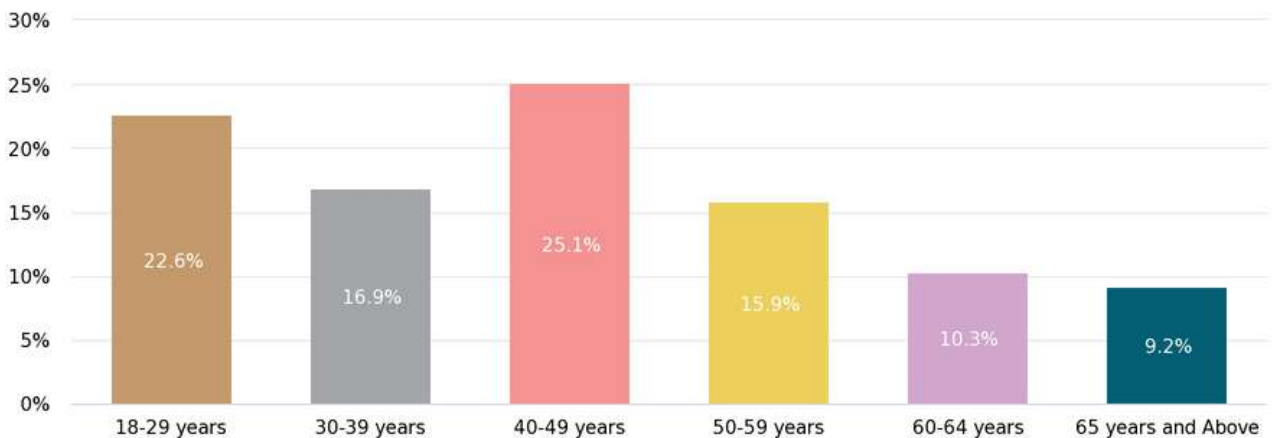
CHAPTER 3: MAJOR FINDINGS OF THE STUDY

Chart 1: Population in terms of gender



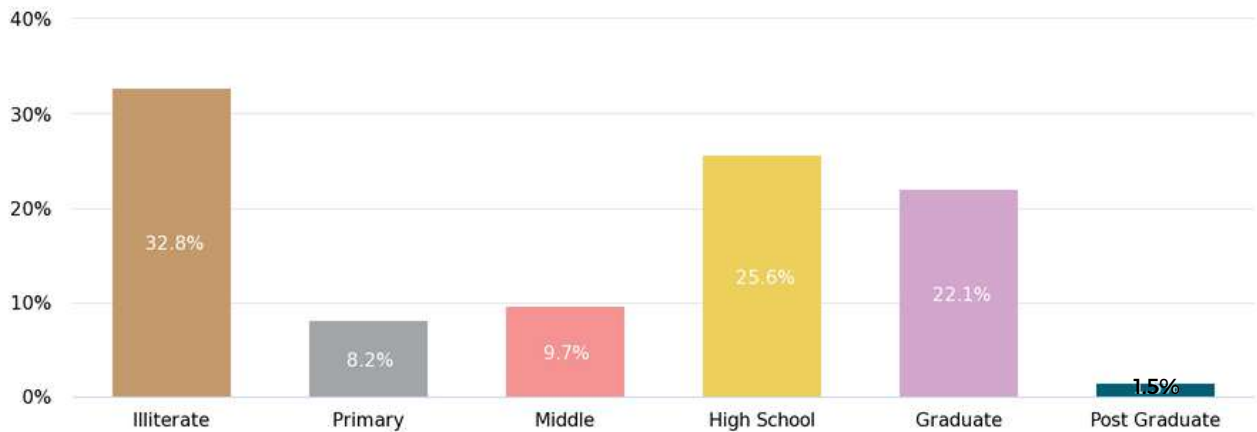
From the respondents who participated from their localities, it was found that 61.5% were male and 38.5% were female.

Chart 2: Population in terms of age group

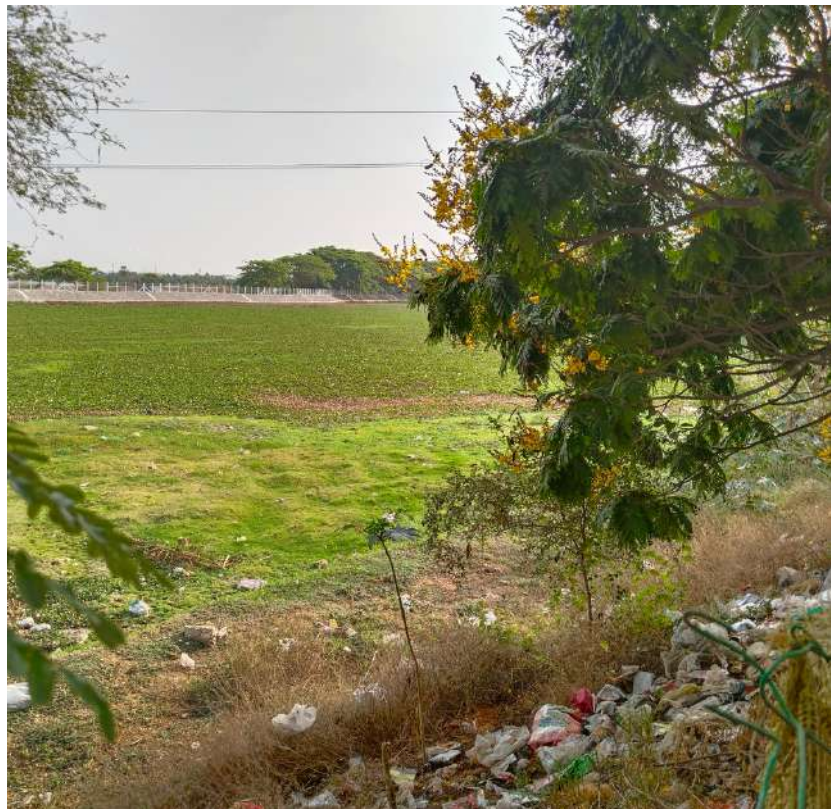


It has been found from the responses that 25.1% of the population is in the age category of 40 to 49 years old. 22.6% are between the ages of 18 and 29. 16.9% between the age groups of 30 and 39, 15.9% are between the ages of 50 and 59 years old, 10.3% are from the age group 60 to 64 years and 9.2% are from the age group 65 years and above.

Chart 3: Population in terms of educational level

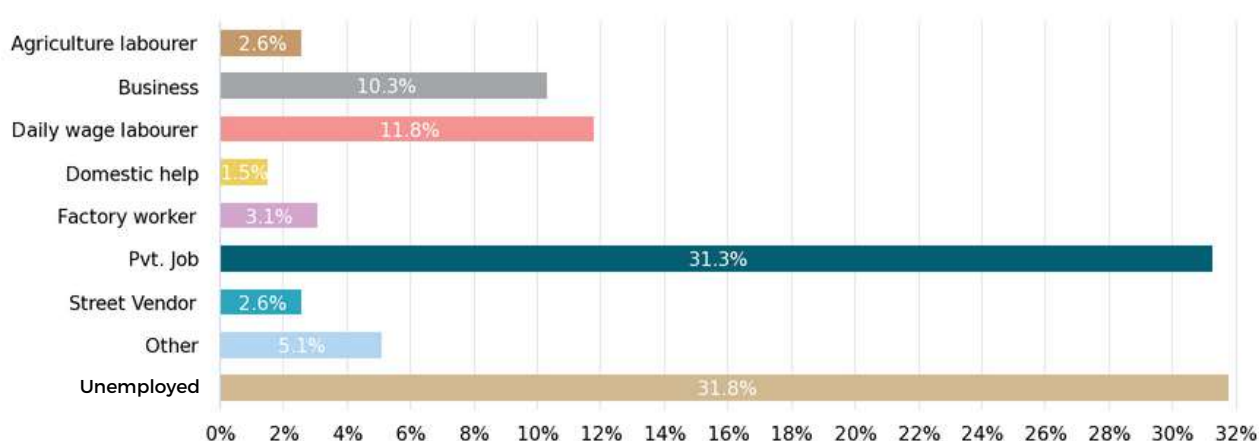


From the survey, it has been found that 32.8% are illiterate. 25.6% are High school passed outs. 22.1% of them are graduates, 9.7% had completed middle school, 8.2% have done only up to the primary level, and 1.5% are postgraduates.



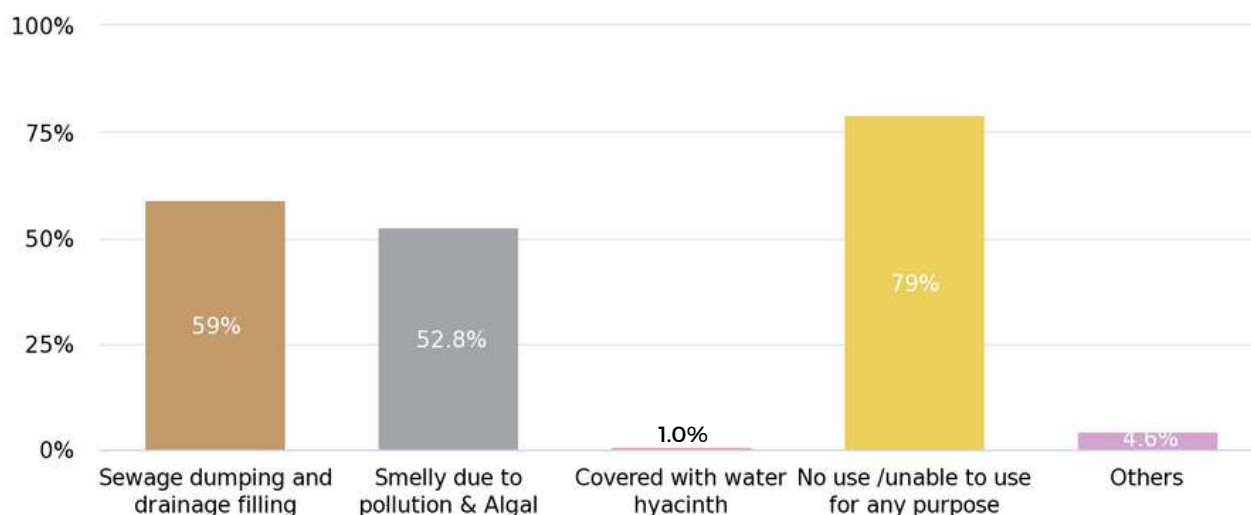
Mooli Kulam Lake

Chart 4: Population in terms of occupation



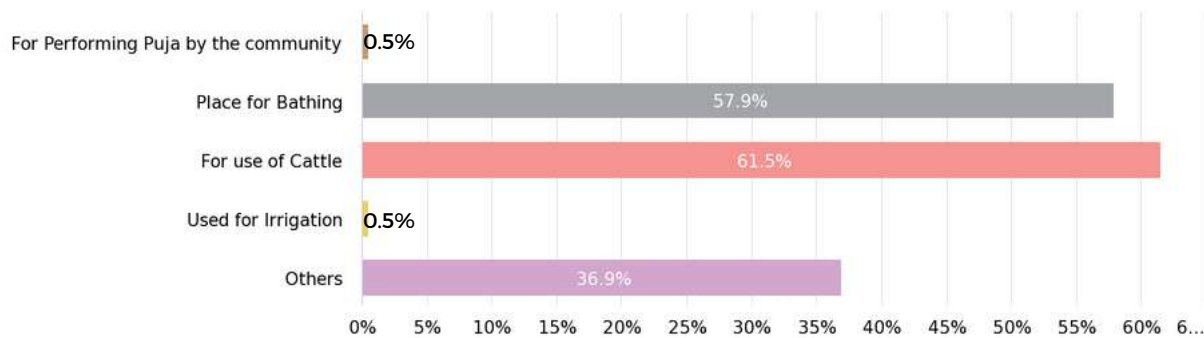
It was discovered that 31.8% of the people in the villagers were unemployed and 31.3% are going for private jobs. 11.8% are daily wage laborers, 10.3% are in business, 5.1% are doing other jobs, 3.1% are factory workers, 2.6% are agriculture laborers, 2.6% are street vendors and 1.5% are domestic helpers.

Chart 5: Condition before restoration



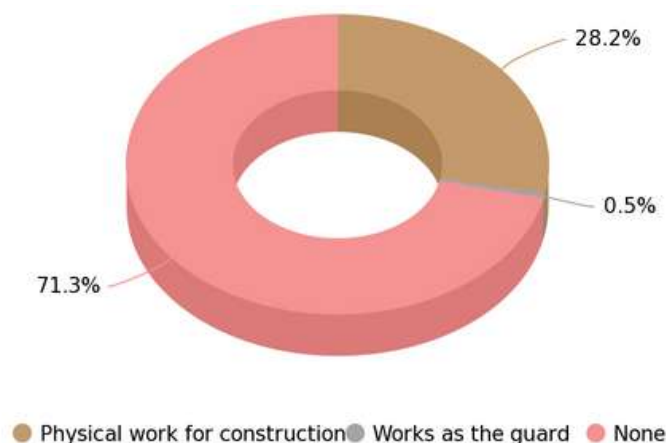
Previously, 79% had said that it was not usable at all. 59% had said that the lake was used for sewage dumping and drainage filling. 52.8% percent said that the pond is smelly due to pollution and algal formation. 4.6% had said that it's used for other activities such as illegal drug usage, theft, and robbery while 1% had said it was covered with water hyacinth.

Chart 6: Usage prior to restoration



Prior to the restoration of the pond, the people of the villages responded that 61.5% were using it for cattle. People used to bathe the cattle in the lake and feed water to the cattle. 57.9% of them were using the pond for bathing. 36.9% were using it for other good purposes, like taking water to water their garden plants and using water to wash clothes. 0.5% is used for irrigation and 0.5% is used for puja purposes.

Chart 7: Ways in which respondents contributed to this project



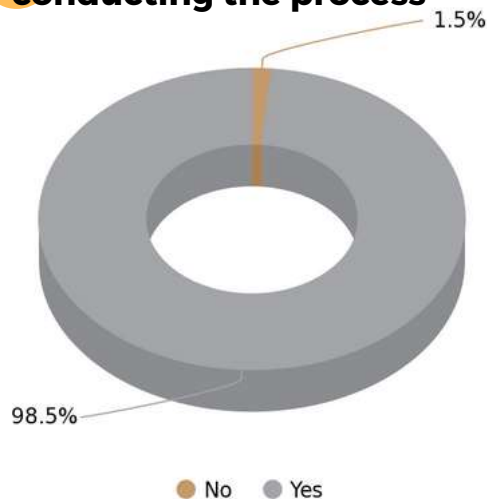
From the responses of the villagers, 71.3% of the respondents have not contributed to the project. The main reason for this is that many of the people here are day laborers, and some work in rotational shifts as well. 28.2% helped with physical work for construction and 0.5% are working as guards.



The lake was dirty before, and there was no life support within. There were many illegal activities going on, like substance abuse; it was also used as a smoking zone, and so on. Initially, we conducted a baseline study and found the possibilities for groundwater recharge.

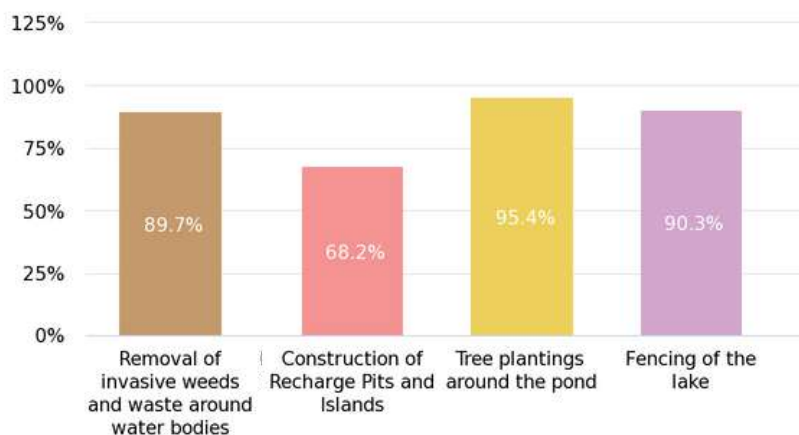
-Ram Mohan, EFI Coordinator, Thattankulam

Chart 8: Whether the NGO discussed with the villagers before conducting the process



A total of 98.5% of the villagers reported that the NGO had discussed the lakes' restoration before the start of the project and 1.5% said no one had conducted any such discussions.

Chart 9: Knowledge about the Work done for restoring the lake



The Villagers were asked about the kind of restoration work done in the lake restoration project. 95.4% said that the NGO had planted trees around the lake. 90.3% said that fencing activities were done around the lake. 89.7% said that invasive weeds and waste around the water bodies were removed. 68.2% said that the construction of recharge pits and islands was done.

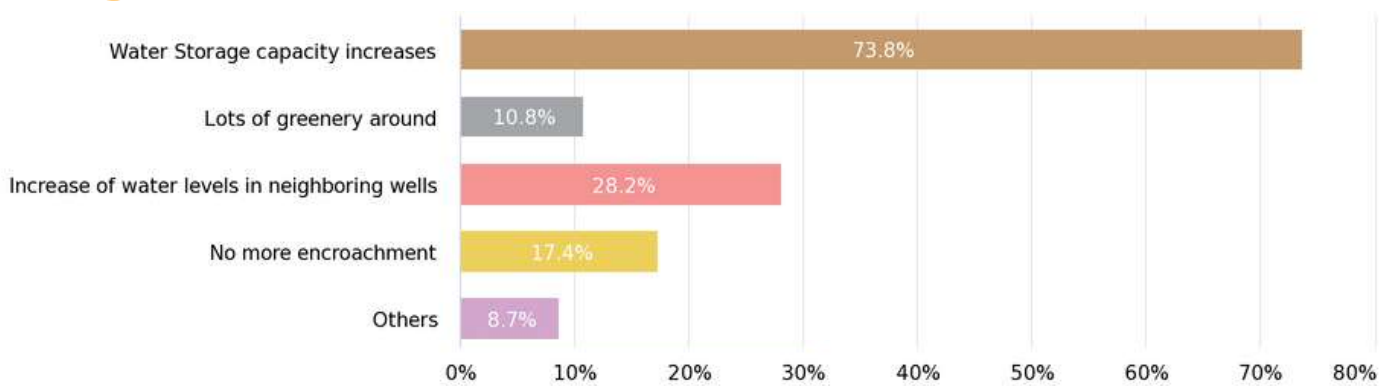


“Villagers provided moral support by giving them accommodation and arranging mechanics for machinery repair. Some elderly people worked as security guards to prevent cattle from grazing saplings. Some villagers who were unemployed in our village helped with the physical work in bunding, planting of trees, and fencing also.”

-Mr.Mahesh, Temple priest, Thiruppur



Chart 10: Benefits of lake restoration

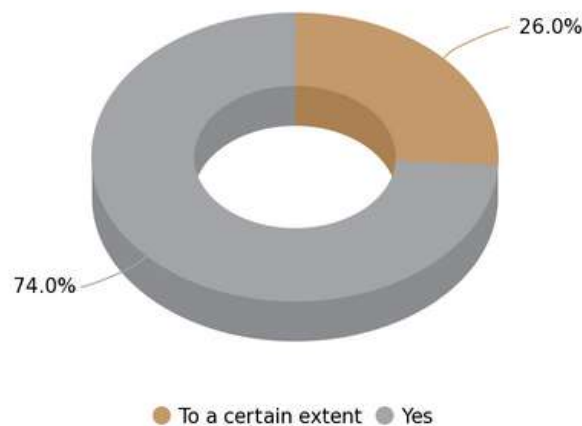


The prominent factor was an increase in water storage capacity (73.8%) while 28.2% believe that there is increase in the water level and 17.4% said there is no more encroachment. 10.8% said that there is lots of greenery around, and 8.7% said that there are other benefits after pond restoration.



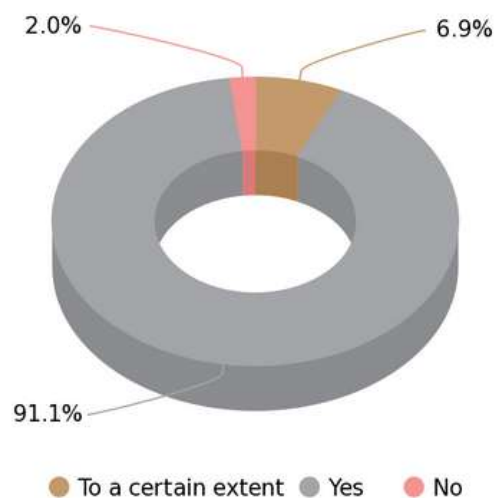
Mooli Kulam Lake

Chart 11: Whether the water level at the pond/lake is increasing post-restoration



About 3/4 of the population (74%) said that there has been a significant increase in water level, and 26% said that it has been raised to a certain extent.

Chart 12: Increase in water level in nearby bore well post-restoration

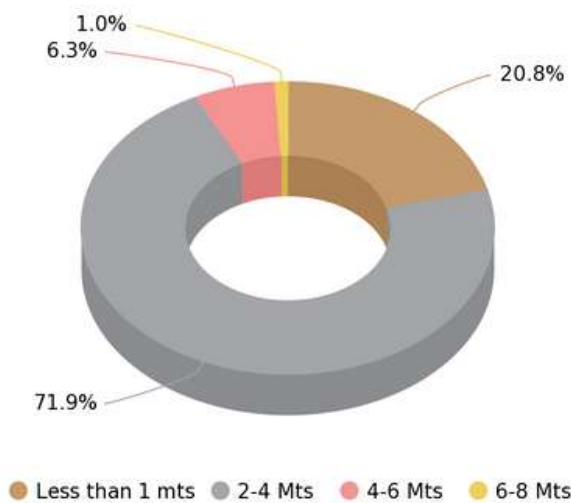


91.1% agreed that there has been an increase in water levels in nearby wells. 6.9% said it has increased to a certain extent, and 2% said disagreed with it.

“The lake is now flourishing with water; we all villagers can see a visible increase in the water table. The trees that are planted give a fresh breeze during the evenings. All illegal activities had come to a halt after fencing, and due to the prevention of water pollution, we could see migrating birds visiting the bird island.”

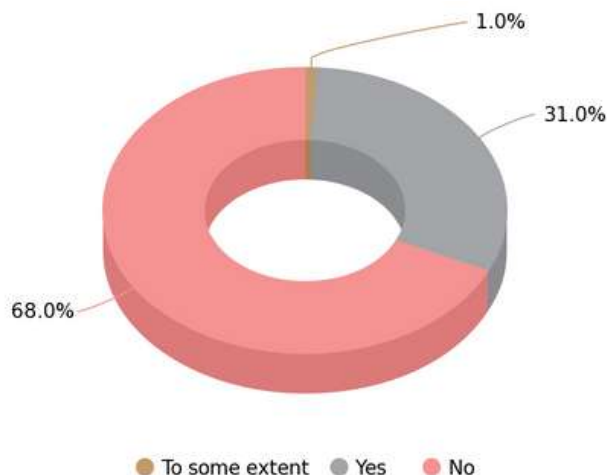
-Lavanya, daily wage labourer, Thattankulam

Chart 13: Increase in water level



Most of the villagers said that the water level had risen by 2 to 4 metres (71.9%); 20.8% said that the water level had risen by less than 1 metre; 6.3% said it had risen 4 to 6 metres and 1% said it had from 6 to 8 metres.

Chart 14: Whether respondents are receiving clean water from the pond/lake

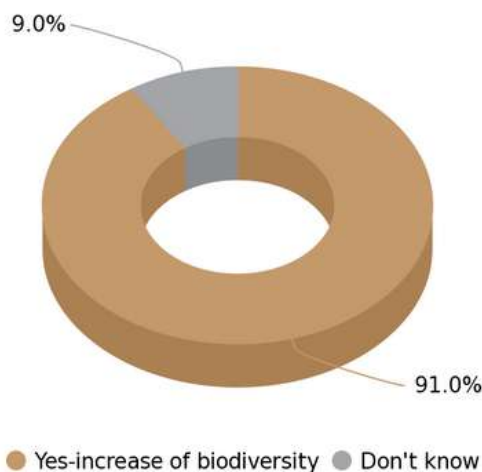


68% of respondents said they did not receive clean water from the lakes. The reason behind this was that the water was used to bathe cattle and for washing clothes. Then, 31% of people said that they receive clean water from the lakes and they treat the water before drinking; 1% said they receive clean water to some extent.

“In the construction phase, we did de-weeding, desilting, bund formation, hyacinth removal, inlet regulation, and garbage removal. Around the lake, we built eiyal vaagai, pungamia and planted paradise trees, neem, and palm seedlings. The soil taken out was used for bund formation and highland creation. There is an operating committee led by the villagers, who help in protecting the lake from pollution and provide local support. Post restoration, we did fencing and maintenance through volunteering events, and conducted awareness camps.”

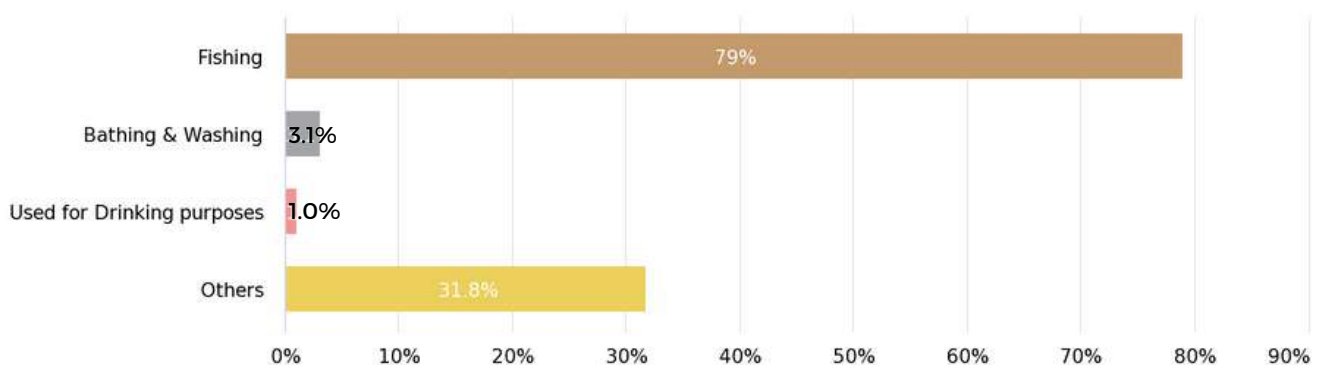
-Ajai Shashangank, Chief Manager, EFI NGO

Chart 15: Whether the respondents have noticed/ observed any change/ improvement of biodiversity post-restoration



After the lake restoration, 91% of people said that the biodiversity had increased greatly and 9% reported having no knowledge about this.

Chart 16: Common activities carried by the people around the lake



In the discussion done among the local villagers, they said that 79% of the villagers use the lake for fishing. 31.9% use the lake for other purposes, like bathing cattle and providing water for cattle drinking. 3.1% use it for bathing and washing, and 1% used it for drinking water purposes.

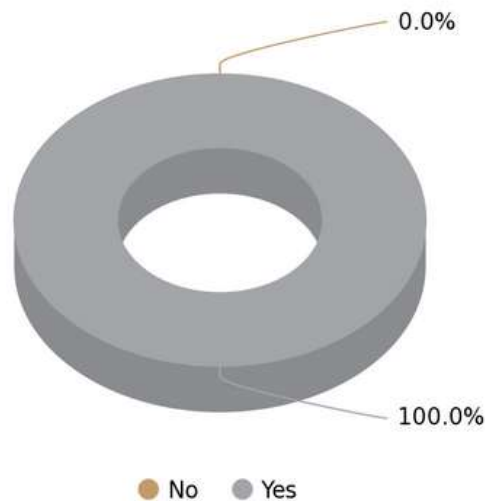


"We had taken very strict measures to prevent the pollution of water, but we were not able to control the local people. They were using this lake to bathe their cattle and for excessive washing of clothes as they don't have attached bathrooms in their homes. We are asking the maintenance committee to impose a fine if the people violate the rules."

-Sandeep, Vergal NGO Leader, Moolikulam



Chart 17: Whether there is a local committee set up for proper maintenance of the pond/lake



All the people said that there are local committees set up for proper maintenance of the pond/lake.



“We would permit the villagers to perform fishing activities, allow them to wash clothes and bath during a specified period, and sometimes allow them to visit the temple to take a holy dip in the water and use the water as an offering to a god. We made a separate portion of the lake untouched for this purpose alone. We took stringent measures to prevent vandalism, illegal use of drugs, and other malpractices in and around the lake.”

-Local stakeholders from Moolikulam



CHAPTER 4: OECD FRAMEWORK

RELEVANCE

RATING ● ● ● ● ●

The Lake Restoration project is highly relevant as it tackles pressing environmental challenges by removing invasive weeds, pollutants, and waste, leading to improved water quality and increased biodiversity (ecological relevance). Further, it directly benefits the local communities by providing them with vital water resources for various purposes such as cattle care, bathing, and domestic use, thereby enhancing their livelihoods and quality of life (social relevance). The project contributes to promoting the conservation and restoration of natural resources, supporting ecological balance, and fostering community participation and engagement.

COHERENCE

RATING ● ● ● ● ●

The program aligns well with the following Sustainable Development Goals and National priorities:

- 1.Goal 6: Clean Water and Sanitation - The restoration of the lakes contributes to improving water quality and availability, ensuring access to clean water for both humans and wildlife.
- 2.Goal 11: Sustainable Cities and Communities - The program helps create sustainable and livable communities by restoring and preserving natural resources such as lakes, which are vital for the well-being of local communities.
- 3.Goal 13: Climate Action - The restoration of lakes and the associated ecosystem services contribute to climate resilience and mitigation efforts by improving water resources and preserving natural habitats.
- 4.Goal 15: Life on Land - The restoration efforts enhance biodiversity by creating a suitable habitat for aquatic life, supporting bird migration, and promoting ecological balance.
- 5.Goal 17: Partnerships for the Goals - The collaboration between HDB Financial Services, the Environmentalist Foundation of India, and local communities demonstrates the importance of partnerships in achieving sustainable development objectives.



It is also coherent with the goals of the National Plan for Conservation of Aquatic Eco-systems (NPCA).

EFFECTIVENESS

RATING ● ● ● ● ●

The Lake Restoration program has been effective in transforming three uninhabitable lakes into habitable states, restoring aquatic life, and supporting bird migration. It successfully addressed challenges by removing weeds, garbage, and silt sand, improving water quality. Measures like water recharging, bund construction, inlet regulation, and fencing ensured sustainable management, protecting the lakes and enhancing their ecological health.

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

EFFICIENCY

RATING



The Lake Restoration program efficiently addressed pollution-induced eutrophication by employing cost-effective methods such as dredging and de-weeding. It effectively tackled water pollution and invasive weed growth, resulting in improved water quality and the revival of aquatic ecosystems. The program's efficiency was further enhanced by the establishment of a lake management committee and the active involvement of local stakeholders, facilitating coordinated decision-making.

IMPACT

RATING



The Lake Restoration program has had a significant impact on the community and the environment. It's now allowing people to access and utilize the ponds. The restoration efforts have increased water storage capacity and raised water levels, benefiting nearby areas. Additionally, the restoration project has led to an increase in biodiversity.

SUSTAINABILITY

RATING



The Lake Restoration program has demonstrated elements of sustainability through its focus on long-term environmental and community benefits. Key elements include water availability, the restoration of habitat for aquatic life, support for bird migration, and the utilization of lakes for irrigation and groundwater recharge. The involvement of the local community and the establishment of a lake management committee further contribute to the program's sustainability. All the benefits will now depend on how the processes and systems continue in the future.

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

CHAPTER 5: RECOMMENDATIONS

To enhance the impact and sustainability of the program, the following recommendations are suggested:

- **Establish Monetary Contribution for Lake Guard Appointment:** Encourage a small monetary contribution from all households in the vicinity of the restored lakes to appoint a dedicated lake guard to actively prevent activities that may pollute the lakes, such as dumping waste.
- **Strengthen Community Engagement:** Encourage active participation of local communities, especially the youth, by involving them on a rotational basis to oversee the upkeep of the restored lakes to foster a sense of ownership and responsibility towards the lakes.
- **Implement Waste Management Strategies:** Develop and implement effective waste management strategies in collaboration with local authorities to prevent people from dumping garbage into the lakes.
- **Strengthen the Lake Management Committee:** Enhance the effectiveness of the Lake Management Committee by providing them with training and resources to effectively manage and monitor the lakes' condition.